Fundamentals of Nursing

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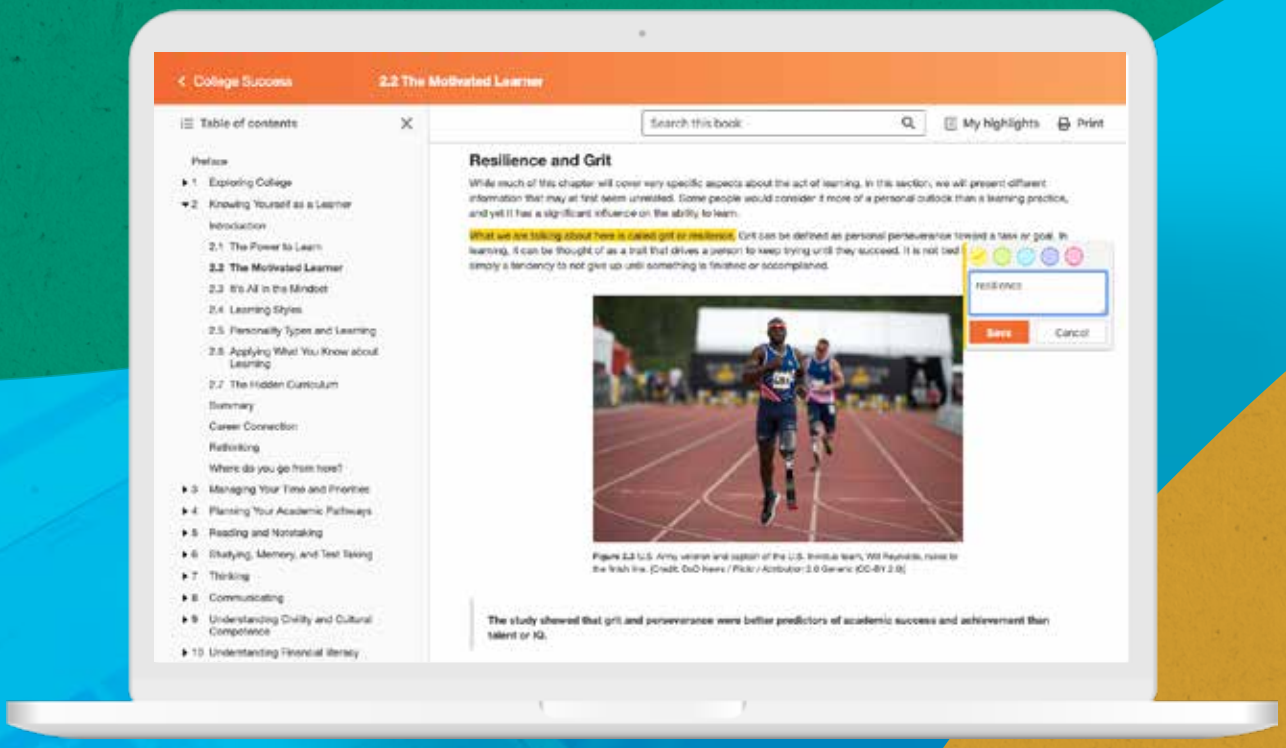

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PREFACE

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About *Fundamentals of Nursing*

Summary

Fundamentals of Nursing aligns with the core curriculum of a nursing fundamentals course and is designed to provide nursing students with the foundational knowledge and practical expertise essential for delivering holistic patient care. This textbook emphasizes the application of clinical judgment across diverse healthcare environments, ensuring readiness to deliver high-quality, compassionate, and patient-centered care to patients from various backgrounds and in different clinical scenarios. As the cornerstone of nursing education, the principles and practices presented in this text provide the foundational knowledge for students embarking on their journey into the nursing profession.

Fundamentals of Nursing features a variety of engaging and informative resources designed to prepare students for real-world practice. By simulating patient interactions, students develop critical communication skills essential for effective nursing care. Insights from practicing nurses provide real-world perspectives, helping bridge the gap between theory and practice. Focus on Quality and Safety Education for Nurses (QSEN) equips students with the skills necessary for providing safe, high-quality care.

Fundamentals of Nursing is more than just a textbook; it is a vital resource guiding students through the initial stages of their nursing education and beyond. By integrating a holistic approach and respecting inclusivity, this textbook prepares students for clinical rotations and provides a solid groundwork for their future careers as professional nurses.

Pedagogical Foundation

Fundamentals of Nursing offers comprehensive instruction on fundamental nursing concepts such as hygiene, mobility assistance, vital signs assessment, medication administration, safety, and wound care. With 43 chapters, *Fundamentals of Nursing* offers an in-depth exploration of the roles and responsibilities of a nurse, the healthcare environment, and the application of critical thinking and evidence-based practice for effective care delivery. Structured to build confidence and competence, *Fundamentals of Nursing* starts with fundamental concepts and progressively introduces more complex topics. It emphasizes holistic care, addressing the physical, emotional, spiritual, and social needs of patients, and highlights the importance of communication, cultural competence, and ethical decision-making in nursing practice.

Organizational Framework

The table of contents for *Fundamentals of Nursing* presents content in 43 chapters, organized into 7 thematic units.

- **Unit 1** introduces the evolution, theories, and practice of the nursing profession. It covers the history and development of nursing theories, effective communication strategies, and the structure and barriers within healthcare delivery systems. The unit also emphasizes health, wellness, community-based health care, and cultural competence, ensuring that students understand the diverse contexts in which they will work.
- **Unit 2** focuses on essential nursing skills and procedures, from taking vital signs to ensuring patient safety and administering medications. It provides the foundational skills necessary for effective patient care and emphasizes infection control, patient transfer, and discharge processes.
- **Unit 3** explores the nursing process, covering assessment, diagnosis, planning, implementation, and evaluation. It teaches students how to systematically approach patient care, ensuring thorough and effective management of patient needs.
- **Unit 4** addresses advanced topics such as evidence-based research, quality improvement, and collaborative practice. It also covers legal and ethical considerations, patient and family education, and leadership and management in nursing, preparing students for the complexities of professional practice.
- **Unit 5** provides in-depth coverage of physiological aspects, including oxygenation, perfusion, fluid and electrolyte balance, nutrition, and more. It prepares students to manage various physiological conditions effectively.
- **Unit 6** covers the psychosocial dimensions of nursing, including self-concept, sexuality, stress, adaptation, spirituality, and end-of-life care. It highlights the importance of holistic care that addresses both the physical and psychological needs of patients.
- **Unit 7** emphasizes health promotion and disease prevention across different stages of life. It covers family dynamics, growth and development from conception through older adulthood, and care for patients with disabilities and chronic illnesses. The unit also focuses on the development of clinical judgment and critical thinking skills through case studies and practical applications. The final chapter brings all the information together in an unfolding case study.

Nursing Features

To further enhance learning, *Fundamentals of Nursing* includes the following features:

- **Clinical Judgment Measurement Model** boxes guide students through the application of the Clinical Judgment Measurement Model. The content explores the critical thinking and decision-making processes necessary to navigate patient care at different points in the process, from recognizing cues to evaluating outcomes.

- **Clinical Safety and Procedures (QSEN)** align with the Quality and Safety Education for Nursing competencies by providing detailed explanations of safety protocols and procedures specific to nursing fundamentals. This feature emphasizes the importance of patient safety and quality care and offers checklists, step-by-step, or tips on various safety practices.
- **Cultural Context** boxes explore the impact of cultural factors on nursing procedures and practices. Some features describe care provided in other countries, while other features discuss cultural considerations for patients in the United States. Cultural Context boxes encourage students to approach each patient individually, respecting their culture and values.
- **Life-Stage Context** features describe topics that are affected by a patient's age. Age-related topics allow the students to critically think about what influences certain conditions and the specific considerations needed for patients at different life stages.
- **Link to Learning** features provide a very brief introduction to online resources—videos, interactives, collections, maps, and other engaging resources that are pertinent to students' exploration of the topic at hand.
- **Patient Conversations** features provide students with key information about how to interact with patients, including patient assessment guidelines for various situations and steps describing how to teach specific skills, such as adopting a healthy lifestyle, to a patient.
- **Real RN Stories** feature firsthand accounts from registered nurses in the field. These stories help students make connections to topics on a deeper level.
- **Unfolding Case Studies** present a hypothetical client scenario that unfolds in three parts across chapters, with each subsequent part presenting new information on the same client, to help foster clinical judgment. In each part of an unfolding case feature, the scenario is followed by two questions that require students to apply their knowledge of evidence-based care and allow them to practice with questions that mimic the style of Next-Gen NCLEX. The answers to these questions, with explanations, are included in the Answer Key for students at the end of the book.

Pedagogical Features

To support student learning, *Fundamentals of Nursing* includes the following standard elements:

- **Learning Outcomes:** Every chapter section begins with a set of clear and concise student learning outcomes. These outcomes are designed to help the instructor decide what content to include or assign and can guide students on what they can expect to learn and be assessed on.
- **Assessments:** A variety of assessments allow instructors to confirm core conceptual learning, elicit brief explanations that demonstrate student understanding, and offer more in-depth assignments that enable learners to dive more deeply into a topic or history-study skill.
    - **Review Questions** test for conceptual apprehension of key concepts.
    - **Check Your Understanding Questions** require students to explain concepts in their own words.
    - **Reflection Questions** and **Competency-Based Assessment Questions** dive deeply into the material to support longer reflection, group discussion, or written assignments.
    - **What Should the Nurse Do?** and **Critical Thinking About Case Study Questions** assess students' clinical judgment skills using case-based scenarios. Students review either a single case or an unfolding case that reveals information gradually. In response to their observations of the patient, students must decide how to navigate the Clinical Judgment Measurement Model process. This approach challenges them to apply theoretical knowledge to practical situations, determining the most appropriate interventions based on the patient's specific circumstances.
- **Answers to Questions in the Book:** The assessments are intended for homework assignments or classroom discussion; thus, student-facing answers are not provided in the book. Answers and sample answers are provided in the Instructor Answer Guide for instructors to share with students at their discretion, as is standard for such resources.
- **Chapter Summary:** Chapter summaries assist both students and instructors by outlining the primary subtopics addressed within the chapter.
- **Key Terms:** Key terms are presented in bold text and are followed by an explanation in context. Definitions of key terms are also listed in the end-of-chapter glossary.
- **References:** References are listed at the end of each chapter.

About the Authors

Senior Contributing Authors

Senior contributing authors: Christy Bowen (left), Lindsay Draper (middle), and Heather Moore (right)

Christy Bowen, Chamberlain University. Dr. Christy Bowen, DNP, RN serves as the Dean of Academic Affairs for Chamberlain University's BSN-Online. Dr. Bowen holds an ASN from Excelsior University, a BSN in Nursing and MSN in Nursing Education with a focus in Curriculum Development and Revision from Western Governor's University, and a Doctor in Nursing Practice in Nursing Leadership and Management from Capella University. Dr. Bowen has been a nurse for more than 20 years and is certified in the specialty of Critical Care nursing, and Wound Care. In her clinical practice she held roles such as Department Chair, Unit Educator, and Lead Nurse. In her Academia role, she has served as Lead Instructor, Curriculum Chair, Program Coordinator, Program Director, and Associate Dean of Faculty. Dr. Bowen has taught courses throughout all levels of nursing education such as associate, bachelor, master, and doctoral level programs. She enjoys teaching both clinical and didactic learning for nursing students. Dr. Bowen served as a key member of the curriculum team to develop a Concept-Based Curricula as part of the Texas Nursing Concept-Based Curriculum (TxNCBC) project; develop a standardized concept-based curriculum for the state of Texas. She has led over 50 Workshops as part of the Implementation and Customization service for schools across the US transitioning to Concept-based Nursing. She developed over 20 Board of Nursing Continuing Education (CE) Certified Workshops and presented as Keynote speaker for all workshops to Universities and Colleges across the US. Throughout Dr Bowens career she has received many prestigious awards including Nurse of the Year, Clinical Nurse Leader of the Year, Employee of the Year, Top Requested Nursing Education Consultant (NEC), Phi Theta Kapa Faculty Member of the Year, and Presidential Award Outstanding Faculty Service.

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Additional Resources

Student and Instructor Resources

We have compiled additional resources for both students and instructors, including Getting Started Guides, an instructor's answer guide, test bank, and image slides. Instructor resources require a verified instructor account, which you can apply for when you log in or create your account on OpenStax.org. Take advantage of these resources to supplement your OpenStax book.

Instructor's answer guide. Each component of the instructor's guide is designed to provide maximum guidance for delivering the content in an interesting and dynamic manner.

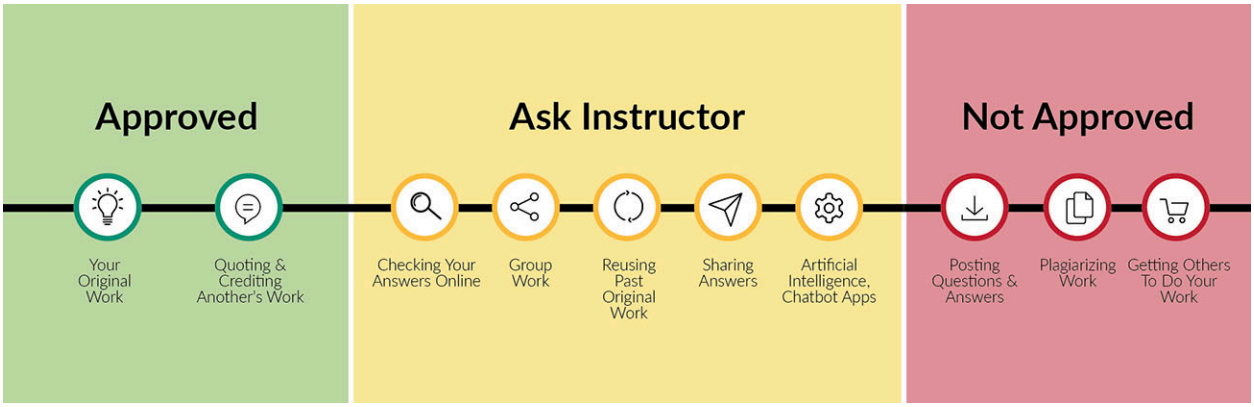
Test bank. With more than 1,100 assessments, instructors can customize tests to support a variety of course objectives. The test bank includes review questions (multiple-choice, identification, fill-in-the-blank, true/false), short answer questions, and long answer questions to assess students on a variety of levels. The test bank is available in Word format.

PowerPoint lecture slides. The PowerPoint slides provide learning objectives, images and descriptions, feature focuses, and discussion questions as a starting place for instructors to build their lectures.

Academic Integrity

Academic integrity builds trust, understanding, equity, and genuine learning. While students may encounter significant challenges in their courses and their lives, doing their own work and maintaining a high degree of authenticity will result in meaningful outcomes that will extend far beyond their college career. Faculty, administrators, resource providers, and students should work together to maintain a fair and positive experience.

We realize that students benefit when academic integrity ground rules are established early in the course. To that end, OpenStax has created an interactive to aid with academic integrity discussions in your course.



Visit our academic integrity slider (https://view.genial.ly/61e08a7af6db870d591078c1/interactive-image-defining-academic-integrity-interactive-slider). Click and drag icons along the continuum to align these practices with your institution and course policies. You may then

include the graphic on your syllabus, present it in your first course meeting, or create a handout for students. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

At OpenStax we are also developing resources supporting authentic learning experiences and assessment. Please visit this book's page for updates. For an in-depth review of academic integrity strategies, we highly recommend visiting the International Center of Academic Integrity (ICAI) website at https://academicintegrity.org/ (https://academicintegrity.org/).

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Special Thanks

The Division of Digital Learning at the Texas Higher Education Coordinating Board (THECB) has a history of dedicated research initiatives, services, and programs that have advanced open education in Texas by providing support, advocacy, and resources to Texas institutions in their OER efforts. The Division maintains a diverse OER portfolio including OERTX, a digital library and community space for open education work. The leadership and collaboration of the Division of Digital Learning staff made the OER Nursing Essentials (ONE) project possible, throughout research, planning, and development phases of the eight-textbook series.

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CHAPTER 1

Introduction to the Nursing Profession: Evolution, Theories, and Practice

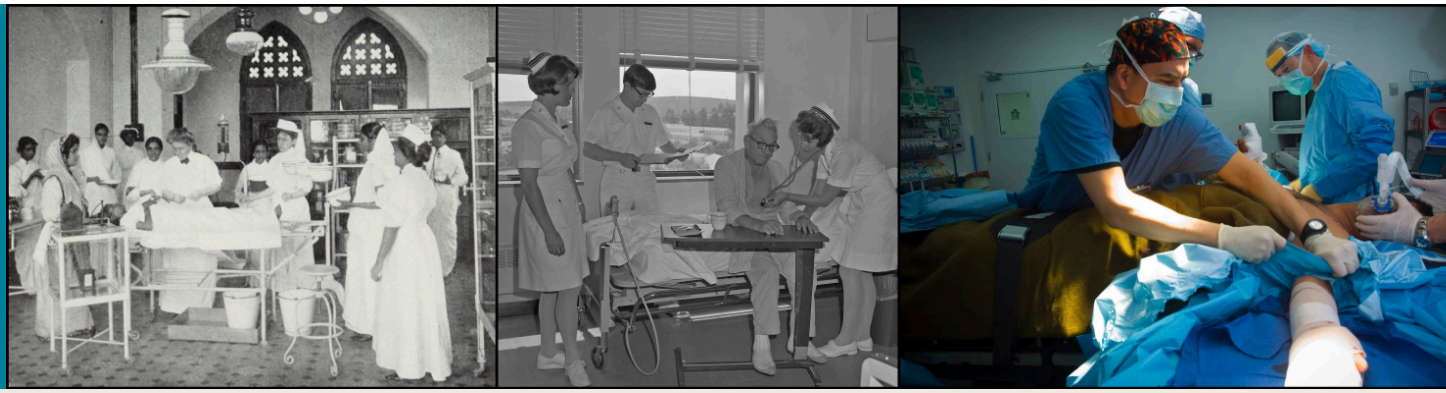

FIGURE 1.1 From its humble origins, nursing has evolved into a professional practice based on theory, standards of practice, and scope of duties. (credit: (left) "historyofnursing4nutt" by Internet Archive Book Images/Flickr, Public Domain; (middle) "09-8132-99" by Navy Medicine/Flickr, Public Domain; and (right) "071204-F-9930C-165.JPG" by U.S. Air Force photo/Tech. Sgt. D. Clare, Public Domain)

CHAPTER OUTLINE

1.1 Evolution of Nursing and Nursing Practice

1.2 Nursing Education Programs

1.3 Nursing as a Profession

1.4 History and Evolution of Nursing Theories

1.5 Selected Nursing Theorist

1.6 Application of Theories in Nursing Practice

INTRODUCTION The evolution of nursing is a dynamic journey that spans centuries, marked by transformative shifts in practice, education, and the professional identity of nurses. These shifts follow the historical progression of nursing and nursing theories, revealing the foundations that have shaped the field. Nursing education programs have likewise undergone significant development, adapting to the evolving healthcare landscape to equip nurses with the knowledge and skills necessary for contemporary practice.

As nursing emerged as a distinct profession, it became characterized by a commitment to compassionate care and a dedication to advancing the health and well-being of individuals and communities. Delving into the history and evolution of nursing theories introduces us to the visionary minds that have contributed to the theoretical frameworks supporting these core commitments. This journey includes an exploration of selected nursing theorists and the application of their theories in the dynamic and multifaceted realm of **nursing practice**, the application of nursing knowledge, skills, and principles. Together, these elements form a comprehensive picture that illustrates the rich and ever-evolving nature of nursing as a profession.

1.1 Evolution of Nursing and Nursing Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize the history of nursing and nursing practice
- Identify current trends in nursing
- Provide examples of the art and science of nursing practice

The profession of **nursing** encompasses the art and science of providing comprehensive care to promote and maintain health, prevent illness, and alleviate suffering for individuals, families, and communities. Nurses provide

holistic care: for each patient, they consider the whole entity rather than focusing solely on individual parts.

In **nursing practice**, nursing knowledge, skills, and principles are applied in the delivery of health care to individuals, families, and communities. Nursing practice is rooted in a foundation of knowledge, clinical skills, and ethical principles, and it involves assessing health needs, developing care plans, administering treatments, and advocating for patients within the healthcare system. It extends across various settings, such as hospitals, clinics, homes, schools, and community environments, and involves collaboration with other healthcare professionals to ensure optimal outcomes for all receiving care. Central to the profession is a commitment to the well-being of individuals and communities, fostering a compassionate and person-centered approach to health care.

History of Nursing and Nursing Practice

The history of nursing and nursing practice is a rich tapestry that countless practitioners and theorists have transformed over centuries. From informal caregiving in ancient civilizations to the highly skilled and respected profession it is today, nursing is marked by profound shifts in approach (D'Antonio et al., 2010). These historical perspectives serve as a testament to the resilience and adaptability of nurses in every setting and to their unwavering commitment to the well-being of individuals and communities worldwide.

Early Beginnings

The early beginnings of nursing can be traced back to ancient civilizations, where the care of the sick and injured was often a communal and familial responsibility. In these early societies, the role of a nurse was often fulfilled by family members, mainly women, who provided care within the home. Certain ancient cultures, such as Chinese and various American Indian, particularly valued individuals with specific knowledge of herbal remedies and healing practices. These individuals, often referred to as **herbalists**, played a role akin to what we now associate with nursing (Figure 1.2). Their knowledge of medicinal plants and holistic healing methods contributed to the well-being of their communities (D'Antonio et al., 2010).

(a) (b)

(c)

FIGURE 1.2 Medicine women have been central figures in many cultures, including (a) indigenous women in Chile, (b) a Zulu shaman in Basutoland, and (c) the proprietor of a traditional Chinese medicine shop in Malaysia. (credit: (a) "Mapuche medicine woman treating a patient, South Chile" by Wellcome Images/Wikimedia Commons, CC BY 4.0; (b) "A Zulu medicine woman or shaman practicing in Basutoland, So" by Wellcome Images/Wikimedia Commons, CC BY 4.0; (c) "Medical Hall" by Oxlaey.com/Flickr, CC BY 2.0)

Throughout history, religious institutions have also played a significant role in caring for the sick. During the Middle Ages, when plagues and other illnesses were widespread, nursing duties in Western societies fell largely to religious orders. Monks and nuns provided care in monasteries and convents, demonstrating a commitment to service and compassion for the sick. The care provided during this period, however, was not formalized or regulated, and its quality varied widely (D'Antonio et al., 2010; Smith, 2023).

During the Renaissance period that began in Europe in the fourteenth century, a shift occurred in the perception of health care. The emergence of the scientific method and a greater understanding of anatomy and physiology began to influence medical practices. Despite these advancements, nursing remained an informal and often undervalued occupation for centuries. Yet these early beginnings of nursing, rooted in familial care and influenced by religious practices, set the stage for the professionalization and transformation of nursing into the vital and respected discipline it is today (D'Antonio et al., 2010).

Birth of Modern Nursing

The birth of modern nursing is credited to Florence Nightingale, a British nurse who played a transformative role in shaping the profession during the nineteenth century. Nightingale's impact was particularly significant during the Crimean War (1853–1856), as she led a team of nurses to address the deplorable conditions in military hospitals. Nightingale's emphasis on sanitation, hygiene, and compassionate care revolutionized hospital practices,

fundamentally altering the landscape of health care and nursing. By implementing rigorous cleanliness measures, ensuring proper ventilation, and conducting statistical analysis of patient outcomes, she significantly reduced the spread of infectious diseases (Karimi & Masoudi Alavi, 2015; Smith, 2023).

The world's first nursing school at St. Thomas' Hospital was established in 1860 (Figure 1.3) which marked the formalization and professionalization of nursing education. The formal education of nurses, along with the establishment of professional standards and ethics, marked the transition from the informal caregiving of earlier centuries to the emergence of a dedicated and skilled nursing profession (D'Antonio et al., 2010).

FIGURE 1.3 This statue, outside St. Thomas' Hospital, honors Mary Seacole, a Jamaican-born nurse who helped care for British soldiers during the Crimean War. (credit: "Mary Seacole statue, St. Thomas' Hospital, front view," by OwenBlacker/Wikimedia Commons, Public Domain)

Development of Nursing in the Nineteenth to Twenty-First Centuries

The development of nursing over the past 200 years represents a dynamic evolution marked by significant milestones, professionalization, and adaptation to the changing landscapes of health care. In the early twentieth century, an expansion of nursing practice took place, with nurses playing crucial roles in World Wars I and II and contributing to the establishment of nursing organizations like the American Nurses Association (ANA) in 1911 (D'Antonio et al., 2010).

In the mid-twentieth century, there were further advancements, including the development of specialized nursing fields and the creation of advanced practice roles. Witnessed in the latter part of the twentieth century were increasing diversity in the nursing workforce and a growing emphasis on evidence-based practice—trends that have continued through today. The profession has also adapted to technological innovations, such as electronic health record (EHR)s and telehealth, and embraced interdisciplinary collaboration (D'Antonio et al., 2010).

Throughout these centuries, nurses have faced challenges such as workforce shortages and increased demands on healthcare systems, leading to ongoing efforts to address these issues. The nursing profession has also experienced a shift toward greater autonomy and leadership roles for nurses, including the recognition of nurse practitioners as primary care providers (D'Antonio et al., 2010).

In recent decades, there has been a renewed focus on nursing education, research, and the global impact of nursing practice. Nurses have played pivotal roles in responding to public health crises, including the HIV epidemic, Ebola outbreaks, and the ongoing challenges posed by infectious diseases. In the twenty-first century, there is increased

recognition of the importance of nursing in healthcare delivery (D'Antonio et al., 2010; Wakefield et al., 2021). Nurses contribute not only to direct patient care but also to health policy, research, and the development of innovative healthcare solutions. The COVID-19 pandemic further highlighted the indispensable role of nurses in providing frontline care and adapting to rapidly changing healthcare needs (Figure 1.4). Today's nurses continue to be at the forefront of health care, contributing to improved patient outcomes and shaping the future of the profession.

FIGURE 1.4 Nurses, like these providers in a California hospital, helped lead the response to the COVID-19 pandemic in the United States. (credit: "USNS Mercy Medical Support at Skilled Nursing Facility Orange County," by Navy Medicine/Flickr, Public Domain)

REAL RN STORIES

Navigating Cultural Sensitivity in the COVID-19 Pandemic

Nurse: Maria, BSN
Clinical setting: Pulmonary intensive care unit
Years in practice: 15
Facility location: Urban town in New Mexico

In the heart of the COVID-19 pandemic, I found myself at the frontline of a bustling urban hospital, facing the challenges of caring for patients from diverse cultural backgrounds. Our unit had transformed into a dedicated COVID-19 unit, and every day brought new hurdles, both physically and emotionally demanding. One particular day stands out, emphasizing the critical role of cultural competence in providing effective care. A patient from a close-knit immigrant community was admitted with severe COVID-19 symptoms. However, the family hesitated to follow some of the recommended treatments due to cultural beliefs and language barriers. Recognizing the need for cultural sensitivity, I took the initiative to connect with the patient's family. With the assistance of a hospital interpreter fluent in their native language, we engaged in thoughtful conversations to understand their concerns and fears.

This challenging situation prompted collaboration with the hospital's cultural competence team. Together, we developed a personalized care plan that respected the family's cultural background, making adjustments to certain aspects of the treatment while ensuring essential medical interventions. Educational materials were provided in their native language to facilitate clear communication about the patient's condition and the tailored care plan. Building trust with the patient's family took time, but as we worked together, they began to see us as partners in their loved one's care. The patient showed signs of improvement, and I continued to provide support, addressing their emotional needs during this challenging time.

This experience reinforced the significance of cultural competence in health care. It taught me and my colleagues the importance of understanding and respecting diverse perspectives, traditions, and beliefs. Embracing cultural competence enabled us to provide more effective and compassionate care, fostering trust and collaboration within the community we served. In reflecting on my experiences caring for COVID-19 patients and navigating cultural sensitivity, I couldn't help but draw parallels to the timeless legacy of nursing pioneers like Florence Nightingale. Much like Nightingale, who revolutionized nursing during the Crimean War, the challenges posed by the pandemic prompted a transformation in our approach to patient care.

Nightingale emphasized the significance of holistic care, recognizing that it goes beyond merely treating the physical symptoms of an illness. As I encountered diverse patients from various cultural backgrounds, I realized that embracing cultural competence aligned with Nightingale's principles of compassionate and patient-centered care. The tailored care plan we developed for the patient from the immigrant community reflected the ongoing evolution of nursing practices. Just as nursing pioneers adapted to the changing landscape of health care in their time, we, too, had to adapt and integrate cultural competence into our care strategies to meet the unique needs of our patients.

Current Trends in Nursing

Current trends in nursing reflect a dynamic landscape shaped by technological advancements, evolving healthcare needs, and recognition of the crucial role nurses play in patient care. Notable current trends in nursing include an ongoing nursing shortage, emphasis on higher education requirements, increase in online nursing education programs, expanded integration of telehealth and technology, and heightened focus on self-care for nurses (Wakefield et al., 2021). These trends collectively highlight the adaptability of nursing in response to contemporary challenges, positioning the profession to meet the diverse and evolving healthcare needs of society.

Continued Nursing Shortage

One prevailing trend in contemporary nursing is the continued shortage of nurses, a challenge that has persisted for several years, impacting the ability of healthcare systems to meet the growing demand for patient care. Several factors contribute to this shortage, including the expanding scope of healthcare services, an aging population with increased healthcare needs, and a similarly aging workforce that has seen many veteran nurses choosing to retire. Additionally, the limited number of qualified nursing instructors and available clinical sites impedes the possible growth of new nurses. The shortage is further exacerbated by factors such as inadequate nurse staffing ratios, high levels of burnout, and the demanding nature of the profession (Morris, 2023).

Efforts to address the nursing shortage include initiatives to attract individuals to the nursing profession, enhance educational opportunities, and create supportive work environments to retain experienced nurses. The ongoing shortage underscores the importance of strategic planning and collaborative efforts across healthcare stakeholders to ensure the sustainability and resilience of the nursing workforce in meeting the evolving healthcare needs of society.

LINK TO LEARNING

This PBS video discusses the effects of burnout from the COVID-19 pandemic on the ongoing nursing shortage (https://openstax.org/r/77COVIDPan) in the United States.

Higher Education Requirements

A notable trend in contemporary nursing is the increasing emphasis on higher education requirements for entry into

the profession. While the traditional path of obtaining an associate degree in nursing (ADN) or a diploma in nursing remains common, there is a growing recognition of the benefits associated with a bachelor of science in nursing (BSN) as the minimum educational standard (Wakefield et al., 2021). This trend is influenced by a desire to elevate the overall quality of patient care, align nursing education with the complexities of modern health care, and enhance critical-thinking and leadership skills among nursing professionals. Many healthcare institutions and employers are now encouraging or requiring nurses to pursue BSN degrees, and some are advocating for a future in which the BSN becomes the standard entry-level qualification. This shift reflects a broader movement in health care toward fostering a highly educated and skilled nursing workforce capable of meeting the diverse and evolving needs of patients and the healthcare system.

Increase in Online Nursing Programs

Another notable trend in contemporary nursing education is the substantial increase in online nursing programs, reflecting the broader shift toward digital learning platforms. This trend has been accelerated by advancements in technology, the recognition of the need for flexible education options, and the impact of the COVID-19 pandemic. Online nursing programs offer accessibility and convenience, allowing aspiring nurses and working professionals to pursue their education without geographical constraints. These programs often integrate virtual simulations, interactive modules, and remote clinical experiences to provide a comprehensive and engaging learning experience. The surge in online nursing education is reshaping the traditional landscape of nursing programs, making education more accessible to a diverse student body and contributing to the ongoing evolution of nursing as a dynamic and technologically advanced profession.

Rise of Technology in Health Care

A significant contemporary trend in nursing is the accelerated adoption of telehealth, the use of digital communication technologies to deliver healthcare services and information remotely. The COVID-19 pandemic has expedited the integration of telehealth platforms, allowing nurses to provide patient care remotely through virtual consultations. This shift not only ensures continuity of care during unprecedented times but also aligns with the broader trend of incorporating technology into various aspects of health care.

PATIENT CONVERSATIONS

Preparing a Patient for a Telehealth Visit

Nurse: Good morning. This is Nurse Sarai calling from Dr. Johnson's office. Am I speaking with Mrs. Singh?

Patient: Yes, this is she. How can I help you?

Nurse: Hello, Mrs. Singh. Dr. Johnson has scheduled a telehealth visit with you today. Have you ever had a telehealth visit before?

Patient: No, it's my first time. How does it work?

Nurse: You will be meeting with Dr. Johnson over a video call. It helps if you're in a quiet room with good lighting. Do you have a smartphone, tablet, or computer with a camera?

Patient: Yes, I have a laptop.

Nurse: Perfect! Before the visit, make sure your laptop is charged and you have a stable internet connection. Also, test your camera and microphone to ensure they are working. Dr. Johnson will discuss your health, medications, and any concerns you might have, just like in a regular appointment.

Patient: Okay, that sounds pretty straightforward. Do I need to download any special software?

Nurse: No software is needed. We will send you a secure link via email and text just before the appointment time. All you have to do is click on the link, and it will take you to the virtual waiting room.

Patient: Okay, I will be looking for the link. Is there anything else I should be aware of?

Nurse: If you have a list of your current medications or any specific health concerns, it would be helpful to have that on hand.

Patient: Thank you for walking me through it, Nurse Sarai.

Nurse: You're welcome, Mrs. Singh. If you have any questions or need assistance before or during the call, feel free to reach out. Dr. Johnson is looking forward to seeing you virtually today.

Patient: Thank you, Nurse Sarai. I appreciate your help.

Nurse: My pleasure! Take care, and we'll talk to you soon.

Nurses are increasingly utilizing electronic health and medical records to streamline documentation, enhance communication among healthcare providers, and facilitate data-driven decision-making. An **electronic health record (EHR)** is a digital version of a patient's medical history, maintained and shared by multiple providers. In contrast, only a single provider maintains and uses an **electronic medical record (EMR)**. While both EHRs and EMRs serve as digital repositories for a patient's medical information, they differ in terms of scope, accessibility, and functionality. The intent is for EMRs to feed into the EHR, providing a holistic approach to healthcare data, fostering coordination and collaboration among multiple entities involved in a patient's care. The rise of wearable health technology and mobile health applications further empowers individuals to actively engage in their care, while nurses leverage these tools to monitor health metrics remotely.

LINK TO LEARNING

The video "I Am a Telehealth Nurse" (https://openstax.org/r/77telenurse) features a pediatric nurse at Cincinnati Children's Hospital who primarily uses digital tools to provide care.

The integration of telehealth and other forms of technology not only enhances healthcare accessibility but also transforms nursing practice, requiring nurses to adapt to evolving modes of patient interaction and data management. As technology continues to advance, nurses are at the forefront of harnessing its potential to optimize patient outcomes, promote preventive care, and contribute to the ongoing transformation of the healthcare landscape.

Essential Need for Nurses' Self-Care

Another essential trend in contemporary nursing is the increasing recognition of the critical need for nurses' **self-care**, intentional actions and practices that individuals engage in to promote their physical, mental, and emotional well-being. The demanding and often emotionally taxing nature of nursing, particularly exacerbated by the challenges posed by the COVID-19 pandemic, has underscored the importance of prioritizing nurses' well-being. Healthcare institutions are placing a greater emphasis on creating supportive work environments, offering resources for mental health and resilience training, and implementing initiatives that address burnout. Nurses are encouraged to engage in self-care practices to mitigate stress, promote mental and physical health, and sustain their overall well-being. Acknowledging the essential role of nurses in the healthcare system, this trend reflects a broader understanding that fostering a culture of self-care is not only beneficial for individual nurses but is integral to sustaining a resilient and effective nursing workforce capable of delivering high-quality patient care (Morris, 2023).

Art and Science of Nursing

The art and science of nursing represent the dual nature of the nursing profession, encompassing both the humanistic and technical aspects of health care. The art of nursing emphasizes the interpersonal and compassionate dimensions of care. It involves the ability to connect with patients on a personal level, provide emotional support, and understand the unique needs and experiences of individuals under care. This aspect of nursing involves effective communication, empathy, and the cultivation of a therapeutic relationship between the nurse and the patient.

On the other hand, the science of nursing centers on the application of evidence-based knowledge, clinical skills, and technical expertise to deliver safe and effective patient care. It involves a thorough understanding of anatomy, physiology, pharmacology, and other scientific principles. Nurses use this scientific knowledge to assess, diagnose, plan, implement, and evaluate patient care, applying a systematic and analytical approach to clinical decision-making.

The integration of art and science is essential for holistic patient care. While the art of nursing ensures a human-centered and compassionate approach, the science of nursing provides the foundation for delivering evidence-based, quality health care. The synergy of these elements allows nurses to address the physical, emotional, and social dimensions of health, fostering a comprehensive and person-centered approach to nursing practice.

Soft Skills of Nursing

The **soft skills** in nursing are the interpersonal abilities and personal attributes that enhance a nurse's ability to interact effectively with patients, families, and colleagues. Communication, empathy, cultural competence, collaboration and teamwork, adaptability, resilience, and problem-solving are examples of fundamental soft skills (Deering & Bal, 2023).

- Communication skills are paramount, encompassing the ability to listen attentively, convey information clearly, and show empathy.
- Empathy enables nurses to connect with patients on an emotional level, fostering trust and understanding.
- Cultural competence allows nurses to respect and navigate diverse backgrounds and beliefs, ensuring culturally sensitive care.
- Collaboration and teamwork are vital, as nurses often work within interdisciplinary teams, requiring effective communication and cooperation.
- Adaptability, resilience, and problem-solving skills are essential in the ever-evolving healthcare environment, enabling nurses to navigate challenges and overcome obstacles to providing person-centered care.

Ultimately, the cultivation of these soft skills enhances the holistic and compassionate nature of nursing practice, contributing to positive patient outcomes and a supportive healthcare environment.

REAL RN STORIES

Utilizing Soft Skills of Nursing

Nurse: Emily, BSN
Clinical setting: Emergency department
Years in practice: 8
Facility location: Rural town in North Dakota

One day, a distressed family arrived at the emergency department seeking updates about their older mother, who was admitted after a sudden cardiac event. The family was anxious, emotional, and struggling to comprehend the medical information. Recognizing the importance of effective communication and empathy, I took the time to sit down with the family in a private room. I actively listened to the family, allowing them to express their concerns and fears. I provided clear and compassionate explanations about the patient's condition, the ongoing treatment plan, and what to expect in the coming days.

Understanding the family's emotional state, I also offered comfort and reassurance, demonstrating empathy. I wanted to ensure the family felt heard and understood, addressing not only the medical aspects but also the emotional and psychological needs of the family. I felt like engaging in open and honest communication helped me to build trust with the family and foster a collaborative approach to care.

Throughout the patient's stay, I continued to check in with the family, providing updates and maintaining a supportive presence. My ability to navigate these sensitive conversations, show empathy, and communicate effectively played a crucial role in easing the family's anxiety and enhancing their overall experience during a challenging time. The family expressed gratitude for the personalized care and the sense of connection they felt and even gave me a hug before they were discharged home. This is just an example of how important it is for us nurses to be skilled in effectively using soft skills to provide holistic and person-centered care.

Hard Skills of Nursing

The **hard skills** in nursing encompass the technical and clinical competencies that are crucial for providing safe and effective patient care. These skills are typically acquired through formal education, training, and hands-on clinical experience. Clinical assessment and critical thinking are foundational hard skills, allowing nurses to analyze patient

data, make accurate diagnoses, and develop appropriate care plans. Proficiency in administering medications, performing various medical procedures, and utilizing medical equipment are essential hard skills that ensure the delivery of precise and evidence-based care. Technical skills related to charting and documentation are crucial for maintaining accurate and comprehensive patient records. Advanced life support and emergency response skills are imperative for handling critical situations.

Throughout their career, nurses are expected to continuously update their hard skills to align with advancements in medical technology and evidence-based practices, ensuring they remain competent and capable in their clinical roles. In combination with soft skills, hard skills form a comprehensive skill set that equips nurses to deliver high-quality and proficient care across diverse healthcare settings.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Mastery of Hard Skills in Nursing

The Quality and Safety Education for Nurses (QSEN) project stands as a cornerstone for the development and enhancement of hard nursing skills. The QSEN provides a structured framework for nurses to master essential competencies by focusing on the cultivation and application of evidence-based practice, technical proficiency, and rigorous clinical judgment.

The six core competencies within the QSEN framework highlight the importance of hard nursing skills. These competencies include patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics, all of which demand a solid foundation in hard skills for their effective implementation.

- Patient-centered care: The QSEN emphasizes the critical role of hard nursing skills in patient-centered care, urging nurses to master competencies such as effective health assessments, patient education techniques, and advocacy for patients' rights and preferences. This core competency relies on a solid foundation of hard skills to ensure comprehensive and personalized patient care.
- Teamwork and collaboration: Within the QSEN framework, teamwork and collaboration necessitate hard nursing skills such as interprofessional communication, collaborative care planning, effective delegation, conflict resolution, and shared decision-making. Nurses are encouraged to cultivate these technical abilities to foster cohesive teamwork and enhance the overall quality of patient care.
- Clinical excellence: The QSEN underscores the significance of hard skills in achieving clinical excellence. Proficiency in medical procedures, accurate clinical judgment, and adherence to evidence-based practices are central components. The initiative serves as a guide for nurses to sharpen their technical skills and ensure a high standard of care.
- Evidence-based practice: As an advocate for evidence-based practice, QSEN places a premium on the integration of the latest research and clinical evidence into nursing care. This emphasis reinforces the importance of hard skills in critically assessing and applying scientific knowledge to inform decision-making.
- Continuous quality improvement: The QSEN encourages a commitment to continuous quality improvement, aligning closely with the development of hard nursing skills. Nurses are prompted to refine their technical abilities, embrace innovations in health care, and actively contribute to elevating the overall quality of patient care.
- Patient safety: Focused on patient safety, QSEN highlights hard skills as the foundation for creating a secure healthcare environment. Proficiency in medical procedures, precise clinical assessments, and a vigilant approach to safety protocols are vital components in ensuring patient well-being.

1.2 Nursing Education Programs

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Compare and contrast levels of nursing education
- Describe the licensure process for nursing practice

Navigating the landscape of nursing education involves exploring the available levels of education, each of which

contributes uniquely to the development of nursing professionals. Aspiring nurses encounter distinct educational pathways, ranging from practical and vocational nursing programs to more advanced degrees like associate, bachelor, and graduate levels. Each tier not only shapes the depth of clinical knowledge but also influences critical-thinking skills and leadership capabilities. Alongside the diverse educational avenues, the licensure process stands as a pivotal gateway for nursing practice. This process, governed by regulatory bodies, establishes a standardized framework to ensure that nurses meet essential qualifications and competencies. Understanding the licensure journey is crucial for aspiring nurses, as it encompasses examinations, practical assessments, and adherence to ethical standards that are prerequisites to a rewarding and impactful career in health care.

Nursing Education

Nursing education encompasses a range of programs designed to prepare individuals for diverse roles within the healthcare profession. Entry-level pathways into the nursing profession include licensed practical nurse (LPN)/licensed vocational nurse (LVN), ADN, and BSN programs, each offering a tiered progression of education and skills development for individuals aspiring to become nurses. Graduate-level nursing programs—such as Master of Science in Nursing (MSN), doctor of nursing practice (DNP), and Doctor of Philosophy (PhD) in Nursing—are designed to provide advanced education and specialized training for registered nurses seeking to enhance their clinical expertise and leadership skills and engage in research to contribute to the advancement of nursing practice and knowledge. These diverse educational pathways cater to individuals with varying career aspirations, contributing to a well-rounded and skilled nursing workforce capable of meeting the evolving demands of the healthcare landscape.

Licensed Practical Nurse/Licensed Vocational Nurse

The positions of **licensed practical nurse (LPN)** and **licensed vocational nurse (LVN)** are fundamentally equivalent; the particular term depends on the state in which the nurse is licensed, but all LPNs and LVNs have completed a specialized nursing education program that equips them with the skills and knowledge required for entry-level positions in health care. Typically offered by vocational schools, community colleges, or technical institutes, these programs span 12 to 18 months, with a curriculum focused on practical nursing skills and basic nursing education (*A guide to the different types of nursing degrees*, n.d., Ko, 2023; Mills, 2023; *Types of nursing degrees and levels*, 2023).

Following program completion, graduates must pass the National Council Licensure Examination for Practical Nurses (NCLEX-PN) to obtain licensure. The LPNs/LVNs work under the supervision of registered nurses or providers, providing basic nursing care such as administering medication, treating wounds, monitoring vital signs, and assisting with activities of daily living. The LPNs/LVNs contribute to overall patient care but may have limited involvement in complex decision-making or creation of the patient care plan (*A guide to the different types of nursing degrees*, n.d.; Ko, 2023; Mills, 2023; *Types of nursing degrees and levels*, 2023). Their scope of practice varies by state and includes roles in hospitals, long-term care facilities, physician's offices, and community clinics. The LPNs/LVNs may choose to advance their career by pursuing further education, such as becoming a registered nurse (RN) through an LPN-to-RN bridge program.

Associate Degree in Nursing

The **associate degree in nursing (ADN)** is a two-year program offered by various educational institutions, including community colleges and technical schools, designed to prepare individuals for a career as a **registered nurse (RN)**. The ADN curriculum encompasses a blend of general education courses and nursing-specific content, providing a broader and more comprehensive foundation than does the LPN/LVN curriculum (*A guide to the different types of nursing degrees*, n.d.; Ko, 2023; Mills, 2023; *Types of nursing degrees and levels*, 2023).

Upon program completion, graduates are eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), a prerequisite for obtaining licensure as a registered nurse. The RNs have a broader scope of practice than LPNs/LVNs. In addition to assessing patients and administering medication, they are involved in planning care. The ADN-prepared nurses are trained to make independent clinical decisions and collaborate with other healthcare professionals in complex patient situations (*A guide to the different types of nursing degrees*, n.d.; Ko, 2023; Mills, 2023; *Types of nursing degrees and levels*, 2023). Consequently, they often have more immediate opportunities for career advancement, and they can pursue additional education, such as a BSN degree, to open up further career prospects.

Bachelor of Science in Nursing

A **bachelor of science in nursing (BSN)** is a comprehensive degree program designed to prepare an individual for a career as an RN; the robust educational requirements typically take four years to complete, though some accelerated programs can be completed in a shorter time frame. Compared to the ADN program, the BSN program offers a broader education, including a more extensive range of general education courses. It covers not only clinical skills but also theory, research, leadership, and public health. Emphasizing critical thinking and evidence-based practice, BSN programs equip nurses with a holistic understanding of health care. The BSN-prepared nurses have an expanded scope of practice, engaging in more complex patient care, decision-making, and coordination of care. The BSN curriculum also includes components on leadership and management, preparing nurses for supervisory roles and leadership within healthcare teams (*A guide to the different types of nursing degrees*, n.d.; Mills, 2023; *Types of nursing degrees and levels*, 2023).

Graduates of BSN programs are eligible to take the NCLEX-RN, which is a prerequisite for obtaining licensure as an RN. The BSN-prepared nurses are positioned for career advancement, with increased opportunities in management, education, research, and specialized nursing roles. The emphasis on professional development encourages ongoing education, certifications, and advanced degrees, reflecting the evolving standards in the nursing profession.

Master's Degree in Nursing

A **Master of Science in Nursing (MSN)** is an advanced graduate degree that provides nurses with a higher level of education and specialization in various areas of nursing practice. Typically pursued after obtaining a BSN degree, an MSN degree is designed to equip nurses with advanced knowledge, skills, leadership, and critical-thinking abilities. The curriculum of an MSN program varies based on the chosen specialty track, which may include options such as nurse practitioner, nurse educator, nurse administrator, or clinical nurse specialist. The program often integrates advanced coursework in areas such as nursing theory, research methods, health policy, and leadership. Clinical experiences and practicums are common components, allowing students to apply advanced theoretical concepts in real-world healthcare settings (*A guide to the different types of nursing degrees*, n.d.; *Types of nursing degrees and levels*, 2023).

Graduates of MSN programs are prepared for advanced practice roles, leadership positions, and specialized nursing functions. The MSN degree serves as a pathway for nurses seeking career advancement, increased autonomy, and the ability to contribute to shaping healthcare policies and practices. Additionally, the MSN is often a prerequisite for pursuing doctoral-level education in nursing, such as a DNP or a PhD in nursing. The pursuit of an MSN reflects a commitment to ongoing professional development and a desire to play a pivotal role in addressing the evolving challenges and complexities within the healthcare system (*A guide to the different types of nursing degrees*, n.d.; *Types of nursing degrees and levels*, 2023).

Doctoral Degrees in Nursing

Doctoral degrees in nursing education are terminal degrees, representing the highest level of academic achievement in the nursing profession. Doctoral degrees provide nurses with advanced knowledge, leadership skills, and expertise in specialized areas. Two primary doctoral degrees in nursing education are the **Doctor of Nursing Practice (DNP)** and the **Doctor of Philosophy (PhD) in Nursing** degrees. The DNP is a practice-focused doctoral degree that emphasizes advanced clinical practice, leadership in healthcare systems, and evidence-based decision-making. The DNP-prepared nurses are equipped to lead and innovate in clinical settings, shaping healthcare policy and practice. The PhD in nursing is a research-focused doctoral degree that emphasizes the generation of new knowledge through rigorous scientific inquiry (Bal, 2023; *Types of nursing degrees and levels*, 2023). The PhD-prepared nurses contribute to the development of nursing science through research, scholarly publications, and academic teaching. Pursuing a doctoral degree in nursing education reflects a commitment to advancing the nursing profession, contributing to evidence-based practice, and shaping the future of health care through leadership, research, and education.

American Association of Colleges of Nursing Essentials of Associate Education for Professional Nursing Practice

The American Association of Colleges of Nursing (AACN) is a professional organization that represents schools of nursing in the United States. Founded in 1969, the AACN is dedicated to advancing nursing education, research, and practice. It serves as a national voice for nursing education, influencing policy, promoting quality standards in

nursing education, and advocating for the nursing profession (AACN, 2021).

The **AACN *Essentials* of nursing education** delineate the core principles and competencies for various levels of nursing education. Each set of AACN *Essentials*, whether for associate, baccalaureate, master, or doctoral education, serves as a framework to guide the development of nursing programs and ensure the preparation of competent and professional nurses. Collectively, they define the standards and expectations for nursing education in the United States, ensuring a continuum of excellence in nursing practice across various roles and responsibilities (AACN, 2021).

The current AACN *Essentials*, introduced in April 2021, are structured around ten domains (AACN, 2021):

1. Knowledge for Nursing Practice
2. Person-Centered Care
3. Population Health
4. Scholarship for Nursing Practice
5. Quality and Safety
6. Interprofessional Partnerships
7. Systems-Based Practice
8. Informatics and Healthcare Technologies
9. Professionalism
10. Personal, Professional, and Leadership Development

Each domain includes level 1 and level 2 subcompetencies, tailored to differentiate between entry-level and advanced-level nursing education. Eight professional nursing practice concepts, such as clinical judgment, communication, compassionate care, social determinant of health, and ethics, are emphasized. *The Essentials* are intentionally designed using a competency-based education model to bridge the gap between education and practice; they are intended to be applicable across different educational stages and adaptable to various curricular models. The ultimate goal is to ensure graduates of nursing programs demonstrate competency in relevant areas, aligning with the evolving needs of health care and improving overall learning outcomes (AACN, 2021).

LINK TO LEARNING

The AACN's *The Essentials* 2021 (https://openstax.org/r/77essent21) outlines curriculum requirements and expected competencies for each level of nursing education.

Licensure

Nursing licensure is a critical regulatory process that ensures individuals practicing nursing meet established standards of competency and adhere to ethical and legal guidelines. Licensure is typically granted by the state's nursing regulatory board, or a similar governing body, and signifies that an individual has successfully completed the required education and training to practice as a nurse. The process involves passing a standardized examination, most commonly the NCLEX-RN for RNs or the NCLEX-PN for LPNs/LVNs (National Council of State Boards of Nursing, 2023).

Licensure for advanced practice registered nurse (RN), such as nurse practitioners, nurse anesthetists, nurse-midwives, and clinical nurse specialists, is a specialized regulatory process that acknowledges the advanced education, training, and clinical expertise of these professionals. The licensure process for APRNs typically involves obtaining an advanced practice nursing license in addition to, or as part of, the RN license. Key components of advanced practice licensure often include completing a master's or doctoral degree in nursing, obtaining national certification in the respective advanced practice specialty, and fulfilling clinical practice hours. National certification is usually granted by specialty nursing organizations or certification boards and is often a prerequisite for state-level advanced practice licensure (National Council of State Boards of Nursing, 2023).

In addition to examination requirements, licensure for RNs and APRNs may involve meeting specific educational criteria, accruing clinical experience hours, and adhering to professional and ethical standards. Nursing licensure not only validates a nurse's competence but also provides a legal framework for accountability and protection of the

public. Licensure requirements vary by jurisdiction, and maintaining an active license often requires ongoing professional development through continuing education (CE) to ensure nurses stay current with advancements in healthcare practices and technologies (National Council of State Boards of Nursing, 2023). The licensure process plays a crucial role in upholding the quality and safety of patient care while regulating the nursing profession to meet the evolving needs of healthcare delivery.

Continuing Education

Ongoing educational activities known as **continuing education (CE)** are a vital component of nursing practice. The CE activities include workshops, seminars, conferences, online courses, and formal academic programs on a broad spectrum of topics, such as new treatment modalities, advances in technology, changes in healthcare laws and regulations, cultural competency, and patient safety measures. The purpose of CE is multifaceted. It ensures nurses remain competent and knowledgeable in their practice and stay current with evolving medical knowledge, technological advancements, and best practices in patient care. Additionally, CE fosters professional growth and development and helps nurses adapt to the dynamic landscape of health care, integrating evidence-based practices into their clinical care.

Compliance with CE requirements is often a condition for license renewal. The specific requirements vary by jurisdiction, and each state's nursing board establishes guidelines for CE that nurses must follow. This commitment to lifelong learning not only benefits individual practitioners, it also maintains high standards of patient care and safety throughout healthcare systems, enhancing their overall quality.

Career Development and Specialty Certification

Career development and specialty certification play crucial roles in advancing nursing practice, providing opportunities for professional growth and enhancing the quality of patient care. In nursing, **career development** encompasses a broad spectrum of activities aimed at advancing a nurse's professional trajectory. This may include pursuing advanced degrees (such as a master's or doctoral degree), assuming leadership roles, engaging in research, or transitioning into educational roles. Career development activities are often driven by a nurse's individual goals, interests, and aspirations for their professional journey.

As nurses progress in their careers, pursuing a **specialty certification** becomes a valuable means of demonstrating expertise and dedication to a particular area of nursing. While licensure grants the legal authority to practice as a nurse, specialty certifications offer a way for nurses to showcase advanced knowledge and skills within a specific niche. Specialty certification involves meeting established criteria: often a combination of education, clinical experience, and successful completion of a certification exam. Certifications are available in various specialties, such as critical care, pediatric nursing, oncology, and nurse anesthesia, among others. These certifications not only validate a nurse's proficiency in a specialized area but also contribute to their overall career development.

Both career development and specialty certification contribute to the continuous improvement of patient care. Nurses who actively engage in career development contribute to the overall advancement of the nursing profession, taking on leadership positions, participating in research initiatives, and shaping healthcare policies. Nurses with specialized certifications bring enhanced knowledge and skills to their roles, resulting in improved patient outcomes. While licensure provides the foundation for nursing practice, career development and specialty certification serve as dynamic elements that empower nurses to excel in their chosen areas, contribute to the advancement of health care, and shape the future of nursing.

REAL RN STORIES

Career Development through National Certification

Nurse: Lindsay, BSN
Clinical setting: Medical-surgical department
Years in practice: 13
Facility location: Suburban area in North Carolina

Early in my nursing career, I knew that I wanted to obtain a national certification in my specialty area of medical-surgical nursing. After establishing a robust practical foundation as a medical-surgical nurse, I started to research

what additional steps I would need to take. After confirming that I had met the practice requirements of two years full-time as an RN and had completed the required thirty CE credits, I began studying and registered to take the certification exam.

I became certified in medical-surgical nursing during my third year as a nurse and have maintained it ever since. This certification became a transformative milestone, allowing me to deepen my expertise in medical-surgical nursing. It equipped me with the latest evidence-based practices, significantly enhancing the quality of care for a diverse range of medical-surgical patients in the fast-paced environment of the hospital. Not only did my journey to certification help my own practice, but it also became a source of inspiration for my nursing colleagues. I actively engaged in mentorship, encouraging fellow medical-surgical nurses to explore the unique opportunities that certification brings to our specialty. A year or two after I became certified, four of my colleagues became certified as well, which furthered the expertise and care our department could provide to our patients.

In-Service Education

Many healthcare institutions offer licensed nurses opportunities for ongoing training, known as **in-service education**. Often these programs address the evolving nature of health care, licensure renewal prerequisites, or other specific needs of the nursing staff. They cover a spectrum of topics, including clinical updates, patient safety measures, quality improvement, and regulatory compliance. By providing opportunities for ongoing learning and skill enhancement, in-service education not only helps nurses stay current with best practices but also ensures they adhere to ethical standards, legal obligations, and regulatory requirements, ultimately promoting optimal patient care and safety.

CLINICAL SAFETY AND PROCEDURES (QSEN)

In-Service Education for Clinical Safety

In-service education programs play a pivotal role in ensuring clinical safety and adherence to best practices in health care. Addressing the core principles of QSEN, these initiatives aim to enhance the competence and skills of healthcare professionals in delivering safe and effective patient care.

- Focus on QSEN principles: In-service education programs aligned with QSEN principles prioritize areas such as patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. By integrating these principles into ongoing training, healthcare institutions foster a culture of continuous learning and improvement.
- Clinical updates and best practices: In-service education initiatives in clinical safety and procedures provide healthcare professionals with essential updates on clinical protocols, safety measures, and evidence-based procedures. This ensures that nurses stay abreast of the latest advancements, contributing to enhanced patient safety.
- Ethical standards and regulatory compliance: Beyond clinical skills, in-service education emphasizes ethical standards, legal obligations, and regulatory requirements. By promoting adherence to these principles, these programs contribute to maintaining the highest standards of professional conduct and safeguarding patient well-being.
- Optimizing patient care: In-service education in clinical safety and procedures is not only a requirement for professional growth but also a commitment to optimizing patient care. The continuous enhancement of skills and knowledge empowers healthcare professionals to deliver high-quality, safe, and patient-centered care in evolving clinical environments.

As an integral part of healthcare education, in-service programs aligned with QSEN principles demonstrate the industry's dedication to maintaining excellence in clinical safety and procedures. These initiatives support healthcare professionals in upholding the highest standards of care and contribute to the ongoing improvement of patient outcomes.

Professional Nursing Organizations

A **professional nursing organization** is a collective body formed by nurses to represent and advocate for the interests of the nursing profession. Professional nursing organizations share a symbiotic relationship with licensing

bodies. Organizations such as the ANA, National Council of State Boards of Nursing, and various specialty-specific groups play a vital role in shaping the standards and guidelines for nursing licensure. They actively engage in advocacy efforts, influencing legislative decisions and policies to ensure that licensure processes are fair, transparent, and reflective of the current healthcare landscape.

Professional nursing organizations also collaborate with regulatory bodies to establish educational requirements, competency assessments, and CE expectations, contributing to the continuous professional development of nurses. Through networking opportunities and collaborative initiatives, these organizations provide a platform for nurses to collectively address challenges, share best practices, and contribute to the ongoing improvement of licensure standards. Additionally, professional nursing organizations emphasize the importance of ethical standards, research, and evidence-based practice, influencing the ethical considerations and scientific foundations embedded in the licensure process. The collaboration between professional nursing organizations and licensure ensures that nursing standards evolve to meet the dynamic needs of health care, uphold ethical principles, and foster the highest quality of patient care.

LINK TO LEARNING

The website Nurse.org maintains a list of professional nursing organizations (https://openstax.org/r/77profnrlist) at the state, national, and international levels.

1.3 Nursing as a Profession

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the scope of practice for the nursing profession
- Explain standards of practice for the nursing profession
- Discuss nursing roles and responsibilities within the profession

Within the realm of health care, nursing stands as a dynamic and essential profession marked by a holistic commitment to patient care and well-being. The scope of practice for nurses encompasses a wide spectrum of responsibilities, ranging from direct patient care to collaboration with interdisciplinary teams. As professionals dedicated to promoting health and preventing illness, nurses play pivotal roles in various healthcare settings. The nursing profession adheres to rigorous standards of practice, ensuring that practitioners maintain the highest level of competence and ethical conduct. These standards guide nurses in delivering safe, effective, and person-centered care. Within this professional landscape, nurses experience diverse roles and responsibilities, encompassing caregiver, decision-maker, collaborator, communicator, advocate, and educator. This section explores the multifaceted nature of nursing as a profession, delving into its scope and standards and the critical roles and responsibilities that define and elevate the practice of nursing in the complex and ever-evolving healthcare environment.

Scope of Practice

The **scope of practice** refers to the defined limits and parameters within which a professional is authorized to work, make decisions, and provide services. It is a set of regulations, guidelines, and standards that delineate the range of duties, responsibilities, and activities that individuals within a specific profession are educated, trained, and legally permitted to perform. The scope of practice is established by regulatory bodies, licensing boards, and professional organizations to ensure that professionals operate within their competencies, uphold ethical standards, and provide safe and effective care (ANA, n.d.b).

The scope of nursing practice encompasses the range of roles, responsibilities, activities, and interventions that a RN or LPN/LVN is educated, trained, and authorized to perform within the legal and ethical boundaries of their licensure. The scope of practice is defined by regulatory bodies, such as state Boards of Nursing in the United States, and informed by national and international professional organizations like the ANA and the International Council of Nurses (ICN). The specific scope of practice for a nurse is influenced by factors such as education, experience, and additional certifications or specialties. It is important to note that the specific details of the scope of

practice can vary by jurisdiction (ANA, n.d.b). Nurses must know the regulations and guidelines set by their state's or country's regulatory authority and engage in regular updates and ongoing education to stay current with evolving healthcare practices and maintain competence within the defined scope of nursing practice.

REAL RN STORIES

Knowing Scope of Practice Boundaries

Nurse: Julian, BSN
Clinical setting: Urgent care
Years in practice: 28
Facility location: Suburban city in Alabama

As a nurse, it is important to know your scope of practice to ensure you stay within your practice guidelines. There is one situation in particular that stands out for testing the boundaries of my scope of practice. One day, my charge nurse approached me with a request to administer a medication to a patient before the provider had written the order for the medication.

Recognizing the potential risks and ethical considerations involved in the situation, I hesitated and expressed my concerns about administering medication without an order. The charge nurse explained the provider was attending to an emergency and would be delayed in providing the order. Despite the urgency conveyed by the charge nurse, I emphasized the importance of obtaining a proper order to ensure the patient's safety and well-being.

This experience took an even more critical turn when it was later discovered that the patient had a known allergy to the medication in question. Had I proceeded without an order, it could have led to severe consequences for the patient. This just reinforced the importance of adhering to established protocols and emphasized the potential risks associated with deviating from them.

This experience highlighted the importance of advocating for patient safety, even in challenging circumstances. It also underscored the significance of effective communication within the healthcare team and the commitment to upholding professional standards, ensuring that patient care aligns with established protocols and maintains the highest standards of safety and professionalism.

International Council of Nurses

The **International Council of Nurses (ICN)** holds a pivotal role in shaping and advancing the global nursing profession, providing essential guidance on the scope of practice for nurses. As a worldwide federation of national nursing associations, the ICN serves as a unifying force, representing millions of nurses with a shared mission to elevate the nursing profession and contribute to improved global health (ICN, n.d.).

Recognizing the inherent diversity in nursing practices across countries and regions, the ICN establishes overarching principles and guidelines that underscore the foundational elements of nursing practice. Central to its framework is the acknowledgment of nurses as autonomous professionals, empowered to make independent judgments and decisions within their designated scope of practice. This emphasis on autonomy is complemented by a commitment to accountability, ensuring that nurses are responsible for the outcomes of their practice (ICN, n.d.).

Collaboration is another cornerstone of the ICN's vision for nursing. The framework underscores the importance of nurses working in close partnership with other healthcare professionals, fostering a collaborative approach to deliver comprehensive and well-coordinated care to individuals and communities. Advocacy features prominently in the ICN's guidance, emphasizing the vital role of nurses as advocates for patients (ICN, n.d.). Nurses are entrusted with the responsibility to ensure that the needs, preferences, and rights of patients are not only acknowledged but also respected within the broader healthcare system.

Education and professional development are encouraged by the ICN, recognizing the dynamic nature of health care and the need for nurses to continually enhance their knowledge and skills. This commitment to ongoing learning is vital for staying abreast of evidence-based practices and ensuring the delivery of high-quality care. Ethical practice is another core tenet outlined by the ICN, emphasizing the importance of nurses upholding stringent ethical standards. This includes safeguarding patient confidentiality, respecting cultural diversity, and promoting the well-

being and dignity of those under their care (ICN, n.d.).

The ICN's guidance serves as a global compass for nursing, fostering consistency, excellence, and a shared commitment to advancing health care on an international scale. Crucially, the ICN acknowledges that the scope of nursing practice is context dependent, varying based on local regulations, laws, and educational standards (ICN, n.d.). The organization provides a flexible framework that countries and regions can adapt to their specific needs, allowing for a nuanced approach to nursing practice that aligns with local requirements and priorities.

American Nurses Association

The **American Nurses Association (ANA)** is a national professional nursing organization formed by nurses to represent and advocate for the interests of the nursing profession. It is one of the largest and most influential such organizations in the United States, advocating for the interests of nurses and the nursing profession. The ANA works to advance the profession of nursing by promoting high standards of nursing practice, providing guidance on ethical issues, and influencing healthcare policy (ANA, n.d.a).

The ANA plays a central role in shaping and defining the scope of practice for nurses in the United States. As the premier professional organization representing the interests of RNs, the ANA provides leadership, guidance, and advocacy to ensure the highest standards of nursing practice. The ANA recognizes the dynamic and evolving nature of health care and nursing, and as such, it continually updates and revises its *Scope and Standards of Practice* to reflect contemporary healthcare needs and professional advancements (ANA, n.d.a).

Through publications such as the *Scope and Standards of Practice*, the ANA delineates the competencies, responsibilities, and ethical considerations that define the scope of nursing practice. This document serves as a comprehensive guide for nurses, educators, policymakers, and the public, outlining expectations for the delivery of safe, quality, and person-centered care (ANA, n.d.b). The ANA's influence extends beyond individual practice, contributing to the development of policies and regulations that govern nursing practice at local, state, and national levels, thereby shaping the landscape of healthcare delivery in the United States.

State Boards of Nursing

A **board of nursing (BON)**, typically established at the state or territorial level, is a regulatory body tasked with overseeing the practice of nursing within its jurisdiction. One of the primary responsibilities of a BON is defining and regulating the scope of practice for nurses. The board sets guidelines and standards that govern the legal and ethical boundaries within which nurses can provide care. These guidelines outline the permissible activities, responsibilities, and competencies for different levels of nursing professionals, ensuring safe and effective patient care. The BONs collaborate with professional nursing organizations, educators, and other stakeholders to regularly review and update these standards to reflect advances in health care, changes in legislation, and evolving societal needs. Additionally, BONs are responsible for licensing nurses, establishing educational requirements, and enforcing regulations to uphold the integrity of the nursing profession.

Licensing is a state-specific process overseen by state BONs, ensuring nurses meet the qualifications and standards set by the respective state for safe and competent practice. The Nurse Licensure Compact is an agreement among participating states that allows nurses to hold one multistate license, granting them the privilege to practice in other compact states without obtaining additional licenses. This compact enhances mobility for nurses and facilitates access to healthcare services across state borders, while still maintaining regulatory standards and patient protection. Through these mechanisms, BONs play a crucial role in safeguarding public health while providing a framework that allows nurses to practice within well-defined parameters.

Standards of Practice

The **Standards of Practice** are comprehensive guidelines that articulate the expectations and ethical conduct required of nurses in their professional roles. These standards serve as a foundational framework, ensuring uniformity, quality, and safety in patient care. While specific criteria may vary across regions, many standards align with overarching principles advocated by professional nursing organizations.

Fundamental aspects found in these standards include the promotion of professionalism, integrity, and accountability among nurses. The emphasis on person-centered care underscores the importance of respecting individual values, preferences, and autonomy. Safety and quality considerations prioritize a culture of continuous improvement and a sanitary and secure healthcare environment. Effective communication and collaboration with

patients and healthcare colleagues are highlighted, promoting interdisciplinary teamwork. The integration of evidence-based practice encourages nurses to utilize the best available evidence in conjunction with clinical expertise to inform decision-making.

Commitment to ongoing education and professional development is emphasized, ensuring nurses stay abreast of evolving healthcare practices. Ethical conduct, legal compliance, and cultural competence are integral components of these standards, ensuring nurses uphold ethical principles, adhere to legal regulations, and provide culturally sensitive and equitable care. Adherence to standards of practice is crucial for upholding the integrity of the nursing profession and delivering safe, ethical, and high-quality patient care.

Code of Ethics

An ethical principle is a fundamental concept that guides individuals and professionals in determining what is right or wrong in a given situation. Ethical principles provide a framework for appropriate decision-making and behavior, helping to ensure that actions align with moral values and standards. Within nursing, these ethical principles are collated into the nursing **code of ethics**, a comprehensive set of principles that defines the ethical responsibilities and standards expected of nurses in their professional practice (ANA, 2015; Gaines, 2023).

The nursing code of ethics, as articulated by organizations like the ANA, is based on five main ethical principles: **nonmaleficence**, **beneficence**, autonomy, justice, and **confidentiality** (Table 1.1).

Ethical Principle	Definition	Example
Nonmaleficence	The principle that nurses have an obligation to do no harm intentionally	Nurses take the time to double-check patients' allergies before administering medications.
Beneficence	The principle that nurses have an obligation to do good and promote the well-being of patients	Nurses spend extra time providing emotional support to terminally ill patients, demonstrating compassion and empathy, even though no specific medical intervention is required.
Autonomy	The principle that an individual has the right to make their own decisions about their own life and body, even when those decisions might be different from what healthcare providers recommend	Nurses discuss treatment options with patients, allowing them to make informed decisions aligned with their personal values.
Justice	The principle that all individuals should be treated with fairness and equity	Nurses allocate resources, such as time and attention, equitably among patients to ensure fair and unbiased care.
Confidentiality	The principle that nurses should respect and safeguard their patients' personal and health information	Nurses safeguard patient information and only share it with authorized individuals, maintaining trust in the nurse-patient relationship.

TABLE 1.1 Ethical Principles for Nurses

In adhering to this code, nurses commit to upholding the highest standards of ethical practice, ensuring the well-being and safety of patients. The code encompasses a set of principles that underscore the essential values and obligations of nursing professionals. Central to the nursing code of ethics is the principle of patient-centered care. Nurses prioritize the needs and preferences of patients, recognizing and respecting their autonomy, individuality, and right to make informed decisions about their health care. This commitment extends to fostering open communication, building trust, and maintaining confidentiality to uphold the privacy of patients. Another

fundamental principle is the obligation to provide competent and safe care. Nurses continually strive to enhance their knowledge and skills, staying abreast of advancements in health care to deliver evidence-based and quality care (ANA, 2015; Gaines, 2023). This includes advocating for a supportive work environment that facilitates ongoing education and professional growth.

The nursing code of ethics underscores the importance of maintaining integrity and honesty in all professional interactions. Nurses are expected to uphold the trust placed in them by the public and colleagues, fostering a culture of transparency and accountability. This involves addressing any conflicts of interest and ensuring that decisions are guided by ethical considerations rather than personal gain. Collaboration and advocacy are integral components of the nursing code of ethics. Nurses work collaboratively with interdisciplinary teams to optimize patient outcomes, promoting a holistic approach to health care. Additionally, they serve as advocates for patients, ensuring that their rights are upheld and that they receive equitable and compassionate care. Finally, the nursing code of ethics emphasizes the responsibility of nurses to contribute to the advancement of the profession (ANA, 2015; Gaines, 2023). This involves engaging in scholarly activities, participating in professional organizations, and actively contributing to the ongoing development of nursing knowledge and practice.

LINK TO LEARNING

Take some time to review the Code of Ethics for Nurses (https://openstax.org/r/77codethic) as set forth by the ANA.

Quality and Safety Education for Nurses

The **Quality and Safety Education for Nurses (QSEN)** initiative serves as a framework for nursing education and practice, emphasizing the integration of quality and safety principles into nursing education and clinical care. While QSEN itself is not a set of formal nursing standards of practice like those established by regulatory bodies or professional organizations, it has influenced nursing education and practice standards by promoting key competencies essential for delivering safe and high-quality patient care (QSEN Institute, n.d.).

The QSEN identifies six core competencies that align with nursing standards and guide nursing education:

1. Patient-centered care focuses on the individual needs, preferences, and values of patients. This competency aligns with nursing standards that emphasize a person-centered approach, recognizing the importance of involving patients in their care and decision-making.
2. Teamwork and collaboration together promote effective communication and cooperation among healthcare team members, aligning with standards that highlight the significance of interdisciplinary teamwork and communication to enhance patient outcomes.
3. Evidence-based practice (EBP) integrates the best available evidence with clinical expertise and patient values to guide nursing practice. Evidence-based practice is a foundational standard in nursing, emphasizing the importance of using the latest evidence to inform decision-making.
4. Quality improvement involves continuous efforts to enhance patient care and outcomes, which aligns with nursing standards that advocate for ongoing quality assessment and improvement within healthcare organizations.
5. Safety prioritizes the safety of both patients and healthcare providers. It is a core principle in nursing practice standards, and the existence of QSEN reinforces the importance of creating a culture of safety within healthcare settings.
6. Informatics promotes the use of information and technology to support and improve healthcare delivery, which aligns with nursing standards that recognize the role of these tools in enhancing patient care and communication.

Nursing Roles and Responsibilities

Nursing roles and responsibilities encompass a diverse array of critical functions within the healthcare system. At its core, nursing involves being a compassionate caregiver, providing holistic and person-centered care that addresses physical, emotional, and psychological needs. Nurses act as decision-makers, exercising clinical judgment, prioritizing care, and contributing to ethical discussions. In the role of a manager of care, nurses coordinate and optimize healthcare services, overseeing interdisciplinary teams and navigating complex healthcare systems. As

communicators, nurses bridge the gap between patients, their families, and the healthcare team, facilitating effective information exchange and fostering therapeutic relationships. Nurses also serve as advocates, ensuring that patients' voices are heard, their rights are respected, and their choices are considered in decision-making processes. Additionally, nurses act as educators, imparting essential knowledge to patients and communities, promoting health literacy, and empowering individuals to actively participate in their well-being.

REAL RN STORIES

Navigating Nursing Roles and Responsibilities

Nurse: Thara, BSN
Clinical setting: Intensive care unit (ICU)
Years in practice: 10
Facility location: Urban hospital in New York

Working in the ICU of a bustling urban hospital, my daily responsibilities extend beyond the traditional image of a nurse. In the ICU, I play a pivotal role in patient advocacy, acting as a liaison between patients, their families, and the interdisciplinary healthcare team. As a patient advocate, effective communication is critical, not only in delivering medical information but also in offering emotional support during challenging times. The ICU environment demands sharp critical thinking and quick decision-making. I face dynamic situations that require immediate intervention and adaptability. Whether it's responding to sudden changes in a patient's condition or collaborating with physicians on treatment plans, my ability to think on my feet is a constant asset.

As an experienced ICU nurse, I often find myself in leadership roles during emergencies. I lead resuscitation efforts, coordinate the response to critical events, and ensure seamless communication among the healthcare team. My leadership extends to mentoring newer nurses, fostering a culture of continuous learning and collaboration. I also provide leadership and expertise across the hospital as the rapid response nurse. In this role, I am called on when patients are deteriorating to help to problem-solve and stabilize the patient until the provider can arrive.

Despite the high-stress environment, I remain committed to providing person-centered care. I take the time to understand each patient's unique needs, involving them in care decisions and ensuring their voices are heard. My compassion and empathy create a therapeutic relationship that contributes to the overall well-being of my patients.

Recognizing the importance of advocating for the nursing profession, I actively participate in initiatives aimed at improving healthcare policies and practices. I engage in professional development, stay informed about advancements in critical care, and advocate for the well-being of both patients and fellow nurses. I embrace change as an opportunity for growth. I also actively seek out training on new technologies, stay informed about evidence-based practices, and contribute to the implementation of innovative approaches in the ICU.

Balancing the emotional toll of critical care nursing with the fulfillment of making a positive impact on patients' lives can be challenging yet rewarding. I emphasize the importance of self-care and teamwork in navigating the complexities of my role. Though nursing has a multitude of roles and responsibilities that come with providing care to our patients, we must never forget that we also have a responsibility to take care of ourselves.

Caregiver

A **caregiver** is an individual who provides physical, emotional, or practical support to individuals in need of assistance due to illness, disability, age-related challenges, or other conditions that impact their ability to perform daily activities independently. As a caregiver, one of the primary roles and responsibilities of a nurse is to provide compassionate and holistic care to individuals, families, and communities. This aspect of nursing involves addressing the physical, emotional, social, and psychological needs of patients, with a focus on promoting health, preventing illness, and facilitating healing. Cultural competence is woven into the role, as nurses recognize and respect the diverse backgrounds, beliefs, and values of their patients; tailoring their approaches to care to accommodate individual cultural preferences.

The caregiving role encompasses several key responsibilities, such as assessment, planning, implementation, and evaluation. In the first phase of caregiving, the nurse conducts thorough assessments to understand the unique

health circumstances of each individual, considering factors such as health history and environmental influences. Following the assessment, nurses take on the responsibility of developing personalized care plans in collaboration with patients, their families, and the healthcare team. These plans establish specific goals and interventions tailored to the individual's needs and preferences. In the implementation phase, caregivers carry out the care plan by administering medications, performing treatments, and coordinating various healthcare services. Simultaneously, they provide emotional support and education, aiming to empower patients and their families in their health journey. Nurses also continuously monitor patient health status, evaluate the effectiveness of interventions, and make necessary adjustments to optimize outcomes. Finally, during crises or emergencies, caregivers respond swiftly and effectively to stabilize the patient's condition. This requires quick thinking, adaptability, and the ability to work effectively under pressure.

Decision-Maker

As a **decision-maker**, an individual or entity responsible for making choices or reaching conclusions in a particular context, in the healthcare setting, nurses bear a crucial responsibility in influencing and determining various aspects of patient care. At the core of this role is the exercise of clinical judgment. Drawing on their knowledge, experience, and analytical skills, nurses assess patient data, discern patterns, and determine interventions that best address the unique needs of each individual. This process extends to active participation in the development of patient care plans, as nurses collaborate with a diverse healthcare team to establish goals and interventions aligned with patient conditions and preferences.

A central responsibility in the decision-making realm involves prioritization. In the dynamic and often fast-paced healthcare environment, nurses must adeptly discern the urgency and importance of various tasks, ensuring that critical aspects of care receive immediate attention. Resource allocation is another critical facet of the decision-making role. Nurses are tasked with judiciously utilizing limited healthcare resources, including time, staff, and equipment, to optimize care delivery. Adaptation to change is also an essential aspect of decision-making, as nurses must make informed decisions that enable them to navigate shifts in patient conditions, treatment modalities, and healthcare policies.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Prioritizing Nursing Care

The nurse is caring for two patients, Mr. Johnson and Mrs. Rodriguez. Mrs. Rodriguez calls out complaining of a "bad headache." Immediately after, Mr. Johnson rings the call bell complaining that he is having trouble breathing. The nurse quickly assesses Mr. Johnson's respiratory status, noting increased respiratory rate, use of accessory muscles, and decreased oxygen saturation. Recognizing that respiratory distress can lead to life-threatening complications, the nurse analyzes the severity of the situation and the need for prompt intervention. Applying clinical judgment, the nurse prioritizes care based on the urgency and potential impact on patient outcomes and decides to prioritize addressing Mr. Johnson's respiratory distress first due to the immediate threat to his physiological stability. The nurse initiates interventions to improve Mr. Johnson's respiratory status, such as administering supplemental oxygen, positioning for optimal breathing, and notifying the healthcare team for further assessment. The application of clinical judgment in prioritizing nursing care ensures that the most urgent and critical needs are addressed promptly. This structured approach contributes to enhanced patient safety, improved clinical outcomes, and the delivery of person-centered care.

Manager of Care

In the capacity of a **manager of care**, nurses assume a pivotal role in directing and overseeing the comprehensive delivery of healthcare services. This multifaceted responsibility encompasses various key aspects of patient care coordination and management. Nurses are charged with organizing and optimizing care delivery by planning and prioritizing interventions based on patient needs and available resources. Nurses play a crucial role in coordinating interdisciplinary teams, fostering effective communication and ensuring seamless collaboration among healthcare professionals.

As managers of care, nurses also navigate the complexities of healthcare systems, utilizing their leadership skills to advocate for patients and optimize the use of healthcare resources. This role involves overseeing the

implementation of care plans, monitoring patient outcomes, and making timely adjustments to interventions as needed. Furthermore, nurses in this role are instrumental in promoting a culture of safety, quality improvement, and adherence to evidence-based practices within the healthcare setting. Through their managerial responsibilities, nurses contribute significantly to enhancing the overall efficiency, effectiveness, and quality of patient care.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Embracing QSEN Principles for Effective Management of Patient Care

Quality and Safety Education for Nurses (QSEN) is a cornerstone in shaping the nurse's role in managing patient care. As nurses take on the responsibility of managing care, the principles of QSEN become fundamental in shaping effective leadership and decision-making to deliver safe and high-quality health care.

Key aspects of QSEN in managing care include the following:

- Patient-centered care: Embracing the principles of QSEN emphasizes the significance of patient-centered care, aligning with the nurse's role in managing patient care. Nurses ensure that care delivery is personalized to meet individual patients' needs, preferences, and values, fostering a patient-centric approach.
- Teamwork and collaboration: Effective patient care management requires collaboration among healthcare team members. The QSEN principles advocate for teamwork, encouraging nurses to create a collaborative environment where communication and cooperation thrive, ultimately benefiting patient outcomes.
- Evidence-based practice: As frontline caregivers, nurses play a pivotal role in promoting EBP. The QSEN emphasizes the integration of the latest evidence into decision-making, guiding nurses in adopting practices that are rooted in research and proven to enhance patient safety and care quality.
- Quality improvement: Managing patient care involves overseeing processes for continuous improvement. The QSEN's focus on quality improvement aligns with the nurse's responsibility to assess, monitor, and enhance care delivery processes to ensure optimal patient outcomes.
- Patient safety: In the role of managing patient care, nurses are crucial to the success of patient safety initiatives. The QSEN's focus on safety science guides nurses in implementing strategies to prevent errors, minimize risks, and create a culture of safety within their practice.

The integration of QSEN into nursing care management positively influences patient outcomes. Nurses, equipped with QSEN principles, deliver care based on best practices, contributing to improved patient safety and well-being. The QSEN's emphasis on communication aligns with the nurse's role in fostering open and effective communication within the healthcare team. This, in turn, promotes better coordination of care and a more responsive healthcare environment. Nurses, influenced by QSEN's focus on continuous improvement, are better equipped to adapt to changes in healthcare practices and technologies. This adaptability ensures that patient care remains aligned with the latest advancements.

Communicator

The role of a nurse as a **communicator** (an individual who engages in the process of conveying information, ideas, or messages to others) is integral to effective healthcare delivery and patient outcomes. Nurses serve as the primary liaisons between patients, their families, and the broader healthcare team, translating complex medical information into understandable and actionable insights. Communication involves not only the dissemination of information but also active listening, empathy, and the fostering of therapeutic relationships. Nurses communicate critical details about patients' conditions, treatment plans, and progress to other healthcare professionals, ensuring a coordinated and comprehensive approach to care. Additionally, they advocate for patients' needs and preferences, facilitating shared decision-making in the care process.

The ability to communicate effectively extends to providing emotional support, addressing concerns, promoting health literacy, and empowering patients and their families/caregivers to actively participate in their care. In emergencies or critical situations, nurses must convey information swiftly and clearly to ensure prompt and appropriate interventions. Effective communication is paramount in fostering understanding and trust among patients, families, and the interdisciplinary healthcare team.

Advocate

An **advocate** is an individual who actively and vocally supports, defends, or promotes the rights, interests, and well-being of another person or a group. The nursing role as an advocate is a cornerstone of person-centered care, reflecting a commitment to safeguarding the rights, well-being, and preferences of individuals within the healthcare system. Nurses serve as vocal proponents for patients, ensuring their voices are heard, concerns addressed, and choices respected. Advocacy involves not only communicating patients' needs to the healthcare team but also empowering patients to actively participate in decision-making regarding their care. Nurses navigate complex healthcare systems on behalf of patients, assisting them in understanding their rights, treatment options, and available resources (Morris, 2023).

Beyond the individual level, nurses engage in systemic advocacy, contributing to policy discussions and initiatives aimed at improving overall healthcare delivery and outcomes. The advocacy role extends to at-risk populations, where nurses work to address disparities and promote equitable access to quality care. In essence, the nursing responsibility as an advocate is rooted in the principles of justice, autonomy, and beneficence, aiming to ensure that each patient receives the highest standard of care in a supportive and respectful environment.

Educator

The nursing role as an **educator** (an individual who engages in the process of facilitating teaching and learning) is foundational to promoting health literacy, empowering patients, and fostering informed decision-making. Nurses are entrusted with the responsibility of providing clear and accessible information to patients, their families, and communities. This educational role involves explaining medical conditions, treatment plans, and preventive measures in a comprehensible manner, taking into account individual differences and cultural considerations. Nurses utilize their expertise to enhance patients' understanding of their health status, medications, and self-care practices.

Beyond the bedside, nurses contribute to community health education, offering insights on disease prevention, healthy lifestyles, and wellness promotion. In the context of chronic conditions, nurses guide patients in managing their health proactively, emphasizing the importance of adherence to treatment plans. By serving as educators, nurses play a vital part in empowering individuals to take an active role in their health, ultimately contributing to better health outcomes and the overall well-being of the communities they serve.

1.4 History and Evolution of Nursing Theories

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize the evolution of nursing theory
- Identify the elements of a nursing theory
- Discuss the domains of nursing philosophy in relation to clinical practice

A **theory** is a framework of related ideas intended to guide and support action. A **nursing theory**, therefore, is a structured and systematic framework composed of concepts, principles, and propositions that collectively guide and shape the understanding of nursing practice. Developed by nursing theorists, nursing theories provide a comprehensive foundation for nurses to conceptualize and interpret various aspects of health care, encompassing not only the delivery of patient care but also education, research, and administration within the nursing profession. At their core, nursing theories articulate fundamental principles and beliefs about the nature of nursing, health, and the dynamic interactions between nurses and their patients. These theories serve as invaluable guides for practitioners, educators, and researchers, contributing to the ongoing evolution and refinement of nursing knowledge and practice in response to the ever-changing landscape of health care (Alligood, n.d.; Gaines, 2023; Wayne, 2023).

Evolution of Nursing Theory

The evolution of nursing theory reflects the dynamic nature of the nursing profession, responding to changes in health care, advancements in research, and shifts in societal perspectives. Historically, nursing lacked recognition as an academic discipline or a fully realized profession. Before the development of nursing theories, the profession was characterized as a task-oriented occupation, with nurses operating under the direction and control of the medical profession. The significance of nursing theories lies in their explicit description of nursing, setting the foundation for

practice and offering a framework that defines the purpose and role of nurses in healthcare settings. These theories serve as a rationale for nursing interventions, providing scientific reasons and a knowledge base to guide appropriate actions in care situations. Additionally, nursing theories contribute to the ongoing development of nursing practice, offering a basis for the further generation of knowledge and indicating the direction in which the profession should evolve (Alligood, n.d.; Gaines, 2023; Wayne, 2023).

By providing nurses with a sense of identity, nursing theories contribute to the acknowledgment and understanding of the unique contributions that nurses make to the healthcare service, fostering a common language for communication and practice. Nursing theories not only guide research but also influence EBP, contributing to the development of nursing education and training programs. Overall, nursing theories, education, research, and practice are interconnected, mutually influencing and shaping each other as the nursing profession continues to evolve (Alligood, n.d.; Gaines, 2023; Wayne, 2023).

Historical Nursing Theories

The earliest nursing theories emerged in the nineteenth century with the work of pioneers such as Florence Nightingale. Nightingale's environmental theory (discussed in Nightingale's Environmental Theory) laid the groundwork for considering the impact of the environment on health. During this period, nursing was primarily seen as a task-oriented and apprenticeship-based profession. In the mid-twentieth century, nursing theories began to take a more systematic and conceptual form. Theories such as Virginia Henderson's nursing need theory (discussed in Henderson's Nursing Need Theory) and Hildegard Peplau's interpersonal relations theory (discussed in Peplau's Theory of Interpersonal Relations) emphasized the importance of understanding patient needs and interpersonal relationships in nursing practice.

In the late twentieth century, there was a proliferation of nursing theories addressing various aspects of nursing, health, and care. Betty Neuman's systems model, Dorothea Orem's self-care deficit nursing theory (discussed in Orem's Self-Care Deficit Nursing Theory), and Madeleine Leininger's culture care theory (discussed in Leininger's Culture Care Theory) are examples of theories developed during this period, reflecting a diversity of perspectives within the field. With the increasing emphasis on EBP, nursing theories have become more integrated with research over time. Theories such as Roy's adaptation model (discussed in Roy's Adaptation Model) and the model of nursing as caring by Anne Boykin and Savina Schoenhofer highlight the importance of research in refining and validating theoretical concepts (Alligood, n.d.; Gaines, 2023; Wayne, 2023).

Many contemporary nursing theories in the twenty-first century have emphasized holistic and person-centered care. Theories like Jean Watson's theory of human caring (discussed in Watson's Theory of Human Caring) and Patricia Benner's "novice to expert" model of nursing (discussed in Patricia Benner) underscore the significance of understanding the whole person and the nurse's role in promoting well-being. In response to increasing globalization and cultural diversity, nursing theories have expanded to incorporate cultural competence and global health considerations. Leininger's Culture Care Theory and the Transcultural Nursing Model exemplify this shift in focus. The current landscape of nursing theory has also seen an increasing emphasis on interdisciplinary collaboration. Theories, such as the general systems theory (discussed in General Systems Theory), underscore the interconnected nature of systems, which can include not only biological and organizational systems but also interdisciplinary collaborations within the healthcare field.

Throughout their history, nursing theories have adapted to changes in healthcare delivery, technological advancements, and a deeper understanding of human experiences. Theories continue to evolve as nurses and theorists engage with new evidence, technologies, and societal challenges, ensuring the ongoing relevance and advancement of nursing knowledge and practice.

Elements of a Nursing Theory

A nursing theory typically consists of concepts, phenomena, definitions, and assumptions. These key elements work together to form a coherent and comprehensive framework that shapes the understanding and practice of nursing, providing a guide for nurses to approach patient care, education, and research.

Concepts

A **concept** is an idea that serves as a foundational element of a theory, contributing to its overall structure and coherence. Concepts are like building blocks that capture essential aspects of nursing practice and collectively

provide a theoretical framework that guides the profession. Concepts may be abstract, representing general notions rather than specific instances, or **concrete**, representing specific and tangible ideas or objects that can be directly observed or experienced. Regardless of whether a concept is abstract or concrete, it is accompanied by a precise definition to ensure clarity and consistency in interpretation (Wayne, 2023).

The interrelatedness of concepts within a nursing theory illustrates the dynamic relationships that exist among them, contributing to the theory's coherence and ability to explain how the concepts influence each other. Concepts must be operationalized to make them observable, relevant, and transferable to research and clinical practice (Wayne, 2023). Examples of concepts that are fundamental to nursing are **holism** (individuals should be viewed and treated as whole beings), **caring** (nurses should give patients compassionate and empathetic attention), adaptation (people adjust to changes in the internal and external environments to maintain optimal health), and self-care (activities that individuals perform to maintain their own health and well-being).

Phenomena

A **phenomenon** is a specific aspect of interest or an observable occurrence that is the focus of theoretical exploration and study. Phenomena in nursing theories refer to whatever theorists seek to understand, describe, explain, or predict within the context of nursing practice. They are often complex and multifaceted, encompassing various dimensions of human health and nursing care (Wayne, 2023).

Examples of phenomena include the experience of pain, coping mechanisms for chronic illness, nurse-patient interactions, health promotion strategies, and cultural competence in nursing. Theories in nursing are developed to explore, describe, explain, or predict these phenomena, providing a structured framework for understanding the complexities of health care. Phenomena are not only the subjects of theoretical exploration but also the catalysts for advancing EBP, guiding nursing research, and enhancing the quality of patient care. As nurses engage with and seek to address phenomena, theoretical frameworks offer valuable perspectives and insights, contributing to the ongoing evolution and refinement of nursing knowledge.

Definitions

A **definition** is a clear and precise explanation of the meaning attributed to a specific concept or term within the theoretical framework. Definitions serve to establish a shared understanding among theorists, researchers, educators, and practitioners who engage with the theory. The clarity of definitions is essential for consistency in communication and application of the theory across diverse contexts (Wayne, 2023).

Definitions within nursing theories aim to articulate the intended meaning of key concepts, ensuring that these concepts are interpreted and used in a standardized manner. Clear definitions contribute to the conceptual clarity and coherence of a nursing theory, fostering a common language within the nursing discipline. They provide a foundation for theoretical development, research design, and practical application of the theory in clinical settings. As nursing theories evolve, definitions may be refined or expanded to accommodate new insights and understandings within the dynamic field of health care (Wayne, 2023).

Assumptions

An **assumption** is a foundational belief or proposition that is accepted without direct empirical evidence. For instance, assumptions may revolve around the inherent worth of individuals, the impact of the environment on health, or the nurse's role in promoting well-being. While assumptions are not subjected to direct testing, they lay the groundwork for the theoretical framework, providing a lens through which the theorist explores, explains, and contributes to the evolving body of nursing knowledge. As nursing theories advance, assumptions may be reevaluated in light of new evidence and insights, ensuring the ongoing relevance and applicability of the theoretical perspectives within the dynamic field of health care (Wayne, 2023).

The Domains of Nursing Philosophy

In its broadest sense, **philosophy** involves the exploration of fundamental questions about existence, values, and the human experience through critical inquiry and reflection. When applied to nursing, a **nursing philosophy** becomes the compass that guides a nurse's practice, encompassing beliefs about the nature of nursing, patient care, ethical considerations, and the nurse's role within the healthcare system (Alligood, n.d.; Gaines, 2023; Wayne, 2023). Clinical nursing incorporates philosophy by grounding actions in foundational beliefs, proven theories, and EBPs, facilitating a more comprehensive and patient-centered approach to care.

A theoretical **domain** refers to a broad and overarching area of theoretical exploration or study. It encompasses a set of concepts, assumptions, and other principles that collectively form a comprehensive framework for understanding and explaining phenomena within that particular domain (Wayne, 2023).

The domains of nursing philosophy are commonly articulated through the concepts of person, environment, health, and nursing. These domains provide a framework, known as a **metaparadigm**, a set of overarching concepts and principles that are key to understanding a particular discipline or field of study. A metaparadigm represents the most abstract level of a theoretical structure and serves as a unifying element that guides the development of theories within the discipline. The **nursing metaparadigm** is a conceptual framework that emphasizes the interconnectedness of the person, environment, health, and the unique role of nursing in facilitating and optimizing the health and well-being of individuals within their broader contexts (Gaines, 2023; Wayne, 2023).

Perspective on Person

The **person domain**, often referred to as the patient or client domain, is the central focus of nursing philosophy. This domain emphasizes the individual as a holistic being with physical, psychological, social, cultural, and spiritual dimensions. It acknowledges each individual's inherent dignity, autonomy, and interconnectedness with the environment (Gaines, 2023; Wayne, 2023).

Nursing philosophy underscores the importance of approaching patients with a person-centered perspective, considering not only their physical health but also their values, preferences, and experiences. Person-centered care recognizes the uniqueness of each individual and aims to provide care that is tailored to their specific needs, values, and preferences. The domain of the person reflects a commitment to providing individualized and culturally competent care that respects the uniqueness of each individual.

REAL RN STORIES

Recognizing the Importance of Person

Nurse: Gannon, BSN
Clinical setting: Medical-surgical unit
Years in practice: 17
Facility location: Suburban city in Alabama

I specifically remember this particular patient who exemplified the nursing metaparadigm concept of a person. This individual was an older woman facing a complex web of chronic illnesses and emotional challenges. Despite her frailty and physical limitations, she maintained a vibrant spirit and a deep sense of resilience.

As her nurse, my focus extended beyond merely addressing her physical symptoms; it encompassed understanding her unique life history, values, and aspirations. Through therapeutic communication, I discovered her love for painting, which had been a lifelong passion. Recognizing the significance of maintaining her identity beyond the confines of illness, I collaborated with the healthcare team to incorporate art therapy into her care plan. We were able to contact volunteer services and request some crayons, colored pencils, watercolors, and paper. You should have seen her face when I walked in with the supplies. You could see the joy on her face.

This approach not only provided relief from physical discomfort but also cared for her emotional well-being. By acknowledging her as a holistic being with individual needs and aspirations, we created an environment that supported her overall health and quality of life. This experience reinforced my commitment to viewing each patient as a unique person with multifaceted dimensions.

Perspective on Environment

The **environment domain** encompasses the surroundings, context, and external factors that influence a person's well-being. This domain recognizes that health is not solely determined by individual factors but is also shaped by the broader physical, social, cultural, economic, and global environment (Table 1.2) (Gaines, 2023; Wayne, 2023). Nurses consider the impact of these environmental factors on the health and well-being of the person and adapt care accordingly.

Factor	Definition	Relevant Considerations for Nurses
Physical	The immediate physical surroundings in which care is provided, such as the healthcare facility, patient's room, or community setting	Is the patient's environment clean? Is it safe? What are the lighting and noise levels?
Social	The relationships, family dynamics, and support systems surrounding a person	How strong is the patient's support system? Does the patient live alone or with family? What impact do these relationships have on the patient?
Cultural	A person's beliefs, values, customs, and traditions	What do I need to understand about the patient's culture to provide effective and respectful care? How does the patient's culture influence their approach to and preferences for their care?
Economic	The patient's access to nutrition, housing, and other resources relevant to well-being	Does the patient feel stressed when thinking about their economic situation? What barriers prevent the patient from achieving and maintaining optimal health, and how can I help address them?
Global	The broader influences and conditions that extend beyond local or national boundaries, affecting health on a global scale	Are there any prevalent international health concerns that may affect the patient directly or indirectly? Has the patient recently traveled to regions with prevalent health risks or outbreaks? Are there any potential exposures to infectious diseases that have global implications?

TABLE 1.2 Environmental Factors of Health

Perspective on Health

The **health domain** goes beyond the absence of illness. In nursing philosophy, health is a dynamic and holistic concept that encompasses the overall well-being of the person, including physical, mental, social, and spiritual dimensions. The understanding of health in nursing philosophy is broad, recognizing that individuals exist on a continuum of wellness and that health is influenced by various factors. The focus is on promoting optimal health, which includes preventing illness but also supporting individuals in achieving their highest level of functioning and quality of life (Gaines, 2023; Wayne, 2023).

Health emphasizes preventive measures and wellness promotion, placing a strong emphasis on patient education and empowerment. Cultural sensitivity is paramount, as nursing philosophy recognizes that diverse cultural perspectives influence perceptions of health and that nursing must ensure care aligns with the individual's cultural beliefs and practices related to health and well-being. By placing the person at the center of care, nurses collaborate with patients to set goals and develop care plans that align with the individual's personal definitions of health and well-being. By supporting individuals in building resilience and coping mechanisms to maintain or restore their health, nurses may positively influence the individual's ability to adapt and cope with life's challenges.

Perspective on Nursing

The **nursing domain** is a fundamental and central concept that defines the unique role, purpose, and responsibilities of the nursing profession. This domain encompasses the art and science of nursing, outlining the scope of practice and guiding principles that underpin the delivery of care. It captures the essence of the profession,

guiding nurses in their dedication to providing high-quality, ethical, and person-centered care that positively impacts the health and well-being of those served (Gaines, 2023; Wayne, 2023).

At its core, nursing is envisioned as a holistic and person-centered discipline, extending beyond the treatment of illness to encompass the promotion of health, the prevention of disease, and the enhancement of overall well-being for individuals and communities. Nurses operate with a commitment to delivering care that is both comprehensive and individualized, recognizing the intricate interplay of physical, emotional, social, cultural, and spiritual dimensions in each person. Advocacy and empowerment are integral elements, with nurses championing the rights and voices of their patients, fostering autonomy, and facilitating shared decision-making. The philosophy underscores the importance of health promotion, compassionate interactions, and continuous pursuit of knowledge through evidence-based practices. Ethical considerations form a foundation for nursing practice, emphasizing integrity, confidentiality, and delivery of care that aligns with moral principles.

Relation to Clinical Judgment

You have seen the term *clinical judgment* several times in this chapter, but what exactly does it mean? Essentially, **clinical judgment** utilizes nursing knowledge, critical thinking, and clinical reasoning, drawing from evidence, theories, and interdisciplinary insights to make informed and patient-centered decisions. It involves the practical application of the domains of nursing philosophy: person, environment, health, and nursing. Together, these domains comprise a conceptual framework that informs clinical judgment, guiding nurses to make sound decisions and provide effective care. They provide a holistic perspective, emphasizing individualized care, consideration of environmental influences, promotion of health, and adherence to the principles of nursing.

More concretely, clinical judgment involves the nurse's ability to assess and understand the unique characteristics, needs, and responses of each individual receiving care. By recognizing the holistic aspects of the person, including their physical, emotional, social, and cultural dimensions, nurses can make informed and person-centered decisions, tailoring interventions to the individual's specific context. Clinical judgment also requires nurses to consider environmental factors—including the patient's physical, social, and cultural contexts—when assessing and planning care. Understanding the impact of the environment on an individual's health and well-being helps nurses adapt interventions, identify potential challenges, and create a setting conducive to optimal patient outcomes. The domain of health guides nurses in setting goals, preventing complications, and promoting well-being. Continually assessing the patient's health status enables the nurse to determine the most appropriate intervention at a given time. Finally, the domain of nursing directly informs clinical judgment by defining the scope of nursing practice. Nurses draw on their knowledge, skills, and ethical principles to make decisions aligned with the philosophy of nursing.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Using Clinical Judgment to Address Environmental Factors

A patient recovering from surgery was becoming increasingly agitated and disoriented. The attending nurse recognized environmental cues in the room such as loud noises, bright lights, and constant interruptions in sleep and concluded the patient was likely experiencing delirium. The nurse collaborated with the healthcare team to adjust the environment, such as reducing the noise level, dimming the lights in the room, and clustering care so the patient could sleep with fewer interruptions. After implementing these strategies, the nurse noted significant improvements to the patient's mental clarity and overall well-being, demonstrating the importance of recognizing and addressing environmental factors in patient care.

1.5 Selected Nursing Theorist

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe different nursing theorists throughout history
- Identify the interdisciplinary foundation for nursing theories
- Recognize nursing theories used in current practice

Nursing theorists have played a pivotal role in shaping the profession of nursing, contributing theoretical

frameworks that guide and inform nursing practice, education, and research. These visionaries have brought forth diverse perspectives, philosophies, and models that enhance our understanding of the complex and dynamic nature of health care and the nurse-patient relationship. From Florence Nightingale's foundational work during the Crimean War to contemporary thinkers like Jean Watson and Martha Rogers, each theorist has left an unforgettable mark on the discipline, influencing the way nurses approach patient care, view their roles, and contribute to the overall advancement of health care. As the nursing profession continues to evolve, the theories crafted by these luminaries remain crucial in providing a theoretical foundation that aligns with the holistic and person-centered nature of nursing practice.

Nursing Theorists

A **nursing theorist** is an individual, typically a nurse with advanced education and experience, who has made significant contributions to the development of nursing theory. Nursing theorists engage in the systematic development of concepts, frameworks, and models that help to explain, predict, and guide nursing practice. These individuals often draw from their clinical experiences, academic research, and philosophical perspectives to articulate theories that shape the understanding of nursing and contribute to the professional identity of nurses. The first part of this module highlights some of the most prominent nursing theorists, past and present.

Florence Nightingale

Florence Nightingale (1820–1910), known as the founder of modern nursing, was a nurse pioneer and social reformer (Figure 1.5). Named after her birthplace (Florence, Italy), Nightingale is best known for her work during the Crimean War, which led to groundbreaking contributions to nursing and public health. Her unique legacy encompasses not only hands-on nursing but also pioneering work in statistics and epidemiology (Alexander, 2019). Nightingale's legacy is complicated by her participation in colonialist practices, including advising governments on repressing anti-colonial uprisings, and publications in which she expressed belief in the superiority of the British over Indigenous people. Nurses, researchers, and historians debate how the community should incorporate and celebrate Nightingale's contributions to the field (Robinson-Lane & Patel, 2022; D'Antonio, 2022).

FIGURE 1.5 Florence Nightingale, known as the founder of modern nursing, was a social reformer, statistician, and pioneer for the nursing profession. (credit: "Florence Nightingale," by JamesGardinerCollection/Flickr, Public Domain)

Nightingale's prominence rose during the Crimean War, to which she and a team of nurses were called to care for soldiers. Upon arriving at the wards, they were horrified to find unsanitary conditions, such as overcrowded wards, sewage on the floors, and patients covered in filth. Using statistics, Nightingale was able to track the number of

deaths; she proved that more soldiers were dying from diseases they picked up in hospitals than from battlefield wounds. She implemented improved sanitation practices and enhanced medical care for wounded soldiers, which significantly reduced mortality rates from 40 to 2 percent (Alexander, 2019). Her statistical analysis of disease was instrumental in establishing the science of epidemiology, which is still used today to track the spread of diseases.

Known for carrying a lamp while she made rounds to check in on soldiers during the night, Nightingale was commonly referred to as "the Lady with the Lamp" by the British soldiers. Her legacy remains strong today; her lamp continues to be an international symbol of nursing and is incorporated into the most important nursing ceremonies. Her 1860 book, *Notes on Nursing: What It Is, and What It Is Not*, remains a foundational text in nursing education, emphasizing the importance of cleanliness, fresh air, and proper nutrition in patient care (Alexander, 2019).

Also in 1860, Nightingale established the first secular nursing school, at St. Thomas' Hospital in London. Her pivotal role in formalizing and professionalizing nursing education continues to shape the field today. The Nightingale Pledge, recited by nurses during graduation ceremonies, reflects the ethical commitment she advocated for so strongly. Nightingale's legacy is also remembered on International Nurses Day, celebrated on May 12 (her birthday), a day that honors her enduring influence on nursing and health care and her dedication to evidence-based practices and patient well-being (Alexander, 2019).

Hildegard Peplau

Hildegard Peplau (1909–1999) was a distinguished nurse, educator, and theorist who made significant contributions to the field of psychiatric nursing (Figure 1.6). Born in Reading, Pennsylvania, Peplau played a crucial role in the development of a theory that revolutionized the approach to nursing care. This theory of interpersonal relations (discussed in Peplau's Theory of Interpersonal Relations) emphasized the nurse-patient relationship as a therapeutic and collaborative partnership, shifting the focus from a task-oriented model to one centered on understanding and meeting the psychological needs of patients. Peplau's groundbreaking work laid the foundation for modern psychiatric nursing, stressing the importance of communication, empathy, and mutual respect in facilitating the healing process. Her influential book, *Interpersonal Relations in Nursing* (1952), remains a seminal text in nursing education. Throughout her career, Peplau held various leadership positions and contributed significantly to the professionalization of nursing. Her enduring legacy extends beyond her theoretical contributions, as she played a pivotal role in shaping the way nurses approach patient care, particularly in mental health settings (Gonzalo, 2023c).

FIGURE 1.6 Hildegard Peplau was a nursing educator who played a major role in developing the theory and practice of psychiatric and

mental health nursing. (credit: "Hildegard-Peplau-1931 Pottstown Hospital Training School Yearbook," by Pottstown Hospital School of Nursing Yearbook/Wikimedia Commons, Public Domain)

Virginia Henderson

Virginia Henderson (1897–1996) is often referred to as the "First Lady of Nursing." Born in Kansas City, Missouri, she dedicated her life to nursing and played a crucial role in the development of nursing theory and practice. Henderson's most notable contribution is her definition of nursing: "The unique function of the nurse is to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that he would perform unaided if he had the necessary strength, will or knowledge" (Henderson & Nite, 1978, p. 5). This definition suggests that nurses help individuals achieve their highest level of independence in activities of daily living. Henderson's conceptualization of nursing was encapsulated in her nursing need theory (discussed in Henderson's Nursing Need Theory), which articulates fourteen basic needs that individuals require assistance with during illness. According to Henderson, nurses should focus on meeting these needs to promote health and well-being (*Virginia Henderson—Nursing theorist*, n.d.).

Throughout her career, Henderson worked in various capacities, including clinical practice, education, and research. She held teaching positions at several prestigious institutions, including Yale University. Henderson also served as a consultant to the United States Public Health Service, the World Health Organization, and the ICN (*Virginia Henderson—Nursing theorist*, n.d.).

In addition to her theoretical contributions, Henderson authored numerous publications, including the classic *Textbook of the Principles and Practice of Nursing* (*Virginia Henderson—Nursing theorist*, n.d.). Her work laid the foundation for modern nursing practice and education, emphasizing the importance of a holistic and person-centered approach. Her legacy continues to shape the field, and her impact is evident in the continued evolution of nursing theory and practice.

Faye Abdellah

Faye Abdellah (1919–2017) was a pioneering researcher and educator who significantly influenced the development of nursing theory and practice (Figure 1.7). Born in New York City, Abdellah developed her theory of patient-centered approaches to nursing (PCAN) in the 1960s. The theory of PCAN focuses on comprehensive patient care, emphasizing the importance of individualized care plans based on patients' unique needs. Abdellah identified twenty-one nursing problems that could be addressed through nursing interventions, emphasizing a holistic and person-centered approach to health care (Atkins, 2017).

FIGURE 1.7 Faye Abdellah was a pioneer in nursing research and the first nurse and woman to serve as the deputy surgeon general of the United States. (credit: "abdellah-4" by NIH, Public Domain)

Throughout her career, Abdellah held various leadership positions within the U.S. Public Health Service, as well as teaching positions at Yale University and the Uniformed Services University of the Health Sciences. Abdellah's

commitment to nursing research and education extended beyond her theoretical contributions. She played a key role in advancing nursing research methodology and promoting the integration of research into nursing practice (Atkins, 2017). Her work laid the groundwork for a more systematic and evidence-based approach to nursing care. Abdellah's impact on nursing is enduring, as her theories and contributions continue to shape nursing education, research, and practice.

Patricia Benner

Patricia Benner is a highly regarded nursing theorist, educator, and author known for her groundbreaking work in the field of nursing education and practice. Born in 1942, Benner has had a profound impact on the way nursing is taught and understood. Benner is perhaps best known for her "novice to expert" model of nursing, which she introduced in 1982. This theory outlines the stages of skill acquisition and development in nursing practice, emphasizing the transition from novice to expert over time. Benner's model includes five stages: novice, advanced beginner, competent, proficient, and expert. According to her theory, as nurses gain experience, they move through these stages, developing clinical expertise and intuitive understanding of patient care (*Dr. Patricia Benner novice to expert—Nursing theorist*, n.d.).

Throughout her career, Patricia Benner has held various academic positions. She has also contributed extensively to nursing literature, authoring and coauthoring numerous books and articles that explore topics related to nursing education, clinical practice, and skill development (*Dr. Patricia Benner novice to expert—Nursing theorist*, n.d.). Benner's work has had a lasting impact on nursing education and has influenced the way nurses are trained and evaluated in clinical settings. Her emphasis on experiential learning and the importance of practical knowledge in nursing has been instrumental in shaping the profession and promoting the development of competent and expert nurses. Patricia Benner's contributions continue to be foundational in the field of nursing, influencing both educators and practitioners alike.

Jean Watson

Jean Watson is a distinguished nursing theorist, academic, and author recognized for her significant contributions to the field of nursing. Born in 1940, Watson is renowned for her development of the theory of human caring (discussed in Watson's Theory of Human Caring), often referred to as the "caring theory." Introduced in the late 1970s and further expanded in subsequent years, this theory emphasizes the importance of the nurse-patient relationship and views nursing as a holistic and transpersonal experience. According to Watson, caring is at the core of nursing and involves the intentional and genuine connection between the nurse and the patient, incorporating both the physical and spiritual dimensions of care (Watson Caring Institute, n.d.a).

Throughout her career, Jean Watson has held various academic positions and authored numerous books and articles on nursing theory, philosophy, and the importance of caring in health care. Watson's work has had a profound impact on nursing education, research, and practice, influencing the way nurses approach patient care and highlighting the significance of compassion and human connection in the healing process. Her caring theory continues to be a guiding framework for nurses seeking to provide person-centered and holistic care in diverse healthcare settings.

Dorothea Orem

Dorothea Orem (1914–2007) was a prominent nursing theorist known for her influential work in developing the self-care deficit nursing theory (discussed in Orem's Self-Care Deficit Nursing Theory). This theory, first proposed in the 1950s and further refined in subsequent decades, revolves around three interrelated concepts: self-care, self-care deficit, and nursing systems. Self-care refers to the activities individuals perform to maintain their health; self-care deficit occurs when individuals cannot meet their own self-care needs. Nursing systems are interventions designed to assist individuals in meeting their self-care needs. According to Orem, individuals have the ability and responsibility to engage in self-care to maintain their health and well-being (*Orem's self-care deficit nursing theory*, n.d.).

Throughout her career, Orem held various positions in nursing education and practice. She served as a consultant and held faculty positions at several universities, including Catholic University of America and Case Western Reserve University (*Orem's self-care deficit nursing theory*, n.d.). Orem's theoretical framework has had a significant impact on nursing education, research, and practice, providing a structured approach to understanding and addressing patients' self-care needs. Her contributions have influenced the development of nursing curricula and the design of

patient care plans, emphasizing the importance of empowering individuals to participate in their own care. Orem's legacy endures as her theory continues to be a foundational component of nursing knowledge and practice.

Interdisciplinary Foundation for Nursing Theories

Interdisciplinary foundations for nursing theories acknowledge the interconnectedness of various disciplines and their influence on the development and application of nursing knowledge. Several disciplines contribute to the diverse theoretical frameworks within nursing, including biology, medicine, psychology, sociology, anthropology, philosophy, and education.

The biological and medical sciences, for instance, provide the foundation for understanding human anatomy, physiology, and pathology. They contribute to nursing theories by informing concepts related to health, illness, and the physiological basis of nursing interventions. Psychology contributes to nursing theories by providing insights into human behavior, cognition, and emotions. Psychosocial aspects of patient care, therapeutic communication, and mental health nursing draw heavily from psychological theories. Sociology informs nursing theories about social determinants of health, cultural influences, and the impact of social structures on individuals and communities. Anthropology contributes by providing a cross-cultural perspective, enriching nursing theories with an understanding of diverse practices, beliefs, and health-seeking behaviors. Philosophical concepts contribute to nursing theories by addressing fundamental questions about ethics, morality, and the nature of human existence. Ethical theories and frameworks guide nurses in making morally sound decisions in complex healthcare situations. Educational theories play a role in shaping nursing education and training models. Theories related to pedagogy, adult learning, and curriculum development influence how nursing knowledge is disseminated and applied in academic and clinical settings.

General Systems Theory

The **general systems theory** in nursing is a theoretical framework that draws on principles from systems theory to understand and explain the complex and dynamic nature of health care and nursing practice. Developed by biologist Ludwig von Bertalanffy in the mid-twentieth century, the general systems theory posits that any system, including a healthcare system or an individual patient, can be viewed as a complex organization of interacting and interrelated components (Von Bertalanffy, 1972).

In the context of nursing, the general systems theory emphasizes the multifaceted nature of healthcare delivery and the interactions between various components, such as patients, healthcare providers, technology, and organizational structures. This theoretical approach encourages nurses to consider the entire healthcare system rather than focus solely on individual aspects. It underscores how different elements within the healthcare environment are interconnected and how changes in one part of the system can have ripple effects throughout.

The general systems theory has been particularly influential in nursing administration and management, as it provides a framework for understanding how healthcare institutions are organized and how changes in policies, procedures, or personnel can impact the overall functioning of the system. It also emphasizes the importance of holistic and person-centered care by recognizing that patients are dynamic systems influenced by biological, psychological, social, and environmental factors.

Descriptive Theories

A **descriptive theory** aims to describe phenomena systematically and objectively through the observation and analysis of behaviors and experiences (Wayne, 2023). In psychology, for example, Ivan Pavlov's work on classical conditioning can be considered descriptive theory, as it systematically describes the process of learning through observing the association of stimuli and responses in animals. Within the field of nursing, these theories focus on providing detailed accounts, categorizations, and classifications of various aspects of nursing, such as patient behaviors, nursing interventions, or healthcare settings. Descriptive theories contribute to the understanding of the complexities within nursing and may serve as a foundation for further research, education, and development of prescriptive theories (Wayne, 2023).

Prescriptive Theories

A **prescriptive theory** provides guidance on how nursing care should be conducted (Wayne, 2023). These theories go beyond describing phenomena and offer recommendations, interventions, or strategies for achieving specific nursing goals. They are often more action oriented, outlining the steps or principles that should be followed. For

example, the theory of experiential learning, developed by David Kolb, prescribes a learning process that involves concrete experiences, reflective observation, abstract conceptualization, and active experimentation. It suggests that individuals learn best when they engage in hands-on experiences, reflect on those experiences, derive abstract principles from their reflections, and then apply these principles in new situations. This prescriptive theory has influenced educational practices that support learning. Within nursing, prescriptive theories guide nursing practice by providing a framework for decision-making and intervention planning (Wayne, 2023).

Adaptation Theories

An **adaptation theory** focuses on the dynamic process of adaptation that individuals undergo in response to changes in their environment (Wayne, 2023). These theories posit that individuals strive to maintain balance and well-being through adaptive responses to stressors. In ecology, for example, Charles Darwin's theory of evolution by natural selection is an adaptation theory that explains how species adapt to their environments over time. In nursing, adaptation theories guide the understanding of how patients respond to health challenges and provide a framework for nurses to support and facilitate adaptive processes for optimal patient outcomes.

Developmental Theories

A **developmental theory** is influenced by broader theories of human development, exploring the stages and transitions individuals go through across their life span (Wayne, 2023). These theories consider physical, cognitive, emotional, and social aspects of development. In nursing, developmental theories are applied to understand the unique needs and challenges faced by individuals at different life stages, guiding nurses in providing age-appropriate and developmentally sensitive care. Erik Erikson's stages of psychosocial development is an example of a developmental theory that has been applied in nursing to understand the psychological challenges individuals face at different life stages. For instance, applying Erikson's theory helps nurses recognize and address the unique psychosocial needs of adolescents, adults, and older adults in their care (Wayne, 2023).

LIFE-STAGE CONTEXT

Application of Erik Erikson's Developmental Theory to Nursing

Erik Erikson's developmental theory, often referred to as the theory of psychosocial development, outlines a series of stages individuals go through across their life span. Erikson proposed eight stages, each characterized by a psychosocial crisis or challenge that individuals must navigate to achieve healthy development. The stages are as follows:

- Trust versus mistrust (infancy, 0–1.5 years): The challenge for infants is to develop a sense of trust in caregivers and the environment, laying the foundation for a trusting worldview.
- Autonomy versus shame and doubt (early childhood, 1.5–3 years): Young children seek to develop a sense of independence and autonomy while learning to control their impulses.
- Initiative versus guilt (preschool, 3–5 years): The focus in this stage is on developing a sense of purpose and the ability to initiate activities, balanced with a growing awareness of responsibility.
- Industry versus inferiority (school age, 5–12 years): Children in this stage work to master new skills and tasks, aiming to feel competent and industrious in their endeavors.
- Identity versus role confusion (adolescence, 12–18 years): Adolescents explore and develop a stable sense of self, including values, beliefs, and life goals.
- Intimacy versus isolation (young adulthood, 18–40 years): Young adults seek to form intimate relationships and commit to long-term connections with others.
- Generativity versus stagnation (middle adulthood, 40–65 years): Adults focus on contributing to society and future generations, fostering a sense of purpose.
- Ego integrity versus despair (late adulthood, 65+ years): The challenge in the final stage is to reflect on one's life and feel a sense of accomplishment and fulfillment rather than regret.

Erikson's theory emphasizes the importance of successfully navigating each stage for overall psychological well-being. The outcomes of these psychosocial crises influence an individual's ability to form healthy relationships, cope with challenges, and find meaning in life. Erikson's developmental theory is discussed in greater detail in Chapter 38 Growth and Development. Nurses can apply Erikson's stages to comprehend and address the unique needs of

patients. For instance, in pediatric nursing, understanding the challenges related to trust, autonomy, and initiative can guide nurses in fostering a supportive environment for children's emotional and psychological development. In geriatric care, the stage of integrity versus despair becomes pertinent as nurses assist older adults in reflecting on their lives and finding fulfillment.

Selected Nursing Theories in Clinical Practice

Nursing theories form the intellectual backbone of clinical practice, providing a structured framework that guides nurses in understanding, analyzing, and responding to the diverse needs of patients. These theories are not merely abstract concepts but also practical tools that shape the way nurses think, communicate, and deliver care at the bedside. In the dynamic landscape of clinical practice, nursing theories serve as compass points, directing practitioners toward person-centered, evidence-based, and holistic care. From addressing the physical aspects of illness to considering the intricate interplay of psychological, social, and cultural factors, nursing theories equip healthcare professionals with a robust foundation to navigate the complexities of clinical scenarios. The final part of this module will highlight some of the most influential nursing theories.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Clinical Safety and Procedures: Applying Nursing Theories in Practice

Nursing theories serve as guiding frameworks that shape the understanding and application of clinical practices. Within the QSEN initiative, the integration of nursing theories is crucial for ensuring clinical safety and effective procedures. Let's explore how nursing theories are connected to the QSEN competencies:

- Person-centered care: Nursing theories emphasize viewing individuals as holistic beings with interconnected physical, psychological, social, cultural, and spiritual dimensions. This perspective significantly impacts patient safety and satisfaction in clinical settings, fostering an environment that recognizes and addresses the unique needs of each individual.
- Teamwork and collaboration: Theoretical frameworks provide a common language and understanding, facilitating effective communication and coordination in a collaborative work environment. This collaborative approach contributes to improved patient safety outcomes and ensures comprehensive care delivery.
- Evidence-based practice: Evidence-based practice is a cornerstone of clinical decision-making. The incorporation of the latest evidence into practice ensures that interventions are not only rooted in theoretical knowledge but also informed by the most current and relevant research. This approach enhances clinical decision-making, contributing to safe and effective patient care.
- Quality improvement: Nursing theories further support a culture of continuous quality improvement within clinical settings. The theoretical foundations provide a basis for identifying and addressing clinical issues, fostering an environment in which ongoing assessment and enhancement of care processes contribute to positive patient outcomes.
- Safety: In the realm of safety practices and procedures, nursing theories offer specific guidance. From preventing errors to ensuring a secure healthcare environment, these theoretical frameworks inform safety measures that are crucial for maintaining the well-being of both patients and healthcare providers.
- Informatics: The integration of informatics within nursing practice—involving the management, analysis, and utilization of health information—is in harmony with the principles of nursing theories. This alignment emphasizes the crucial role of informatics in facilitating efficient and accurate data-driven decision-making, ultimately contributing to the enhancement of patient safety within healthcare settings.

Nightingale's Environmental Theory

Florence Nightingale's environmental theory, developed during the nineteenth century, is a foundational framework that significantly influenced nursing practice and healthcare environments. Based on her observations and experiences during the Crimean War, the environmental theory posits that the environment plays a critical role in influencing the health and well-being of individuals. Nightingale emphasized the significance of a clean, well-ventilated, and aesthetically pleasing environment in promoting healing and preventing illness. She believed that by modifying the environment, nurses could positively impact patients' recovery outcomes (Gonzalo, 2023b).

Nightingale's theory incorporates several key environmental factors, including fresh air, pure water, efficient drainage, cleanliness, and appropriate nutrition. She emphasized the importance of natural light and noise control, recognizing their impact on patient comfort and the overall healing process. Additionally, Nightingale stressed the need for nursing interventions to create a supportive and therapeutic environment, considering factors beyond the physical space, such as social, psychological, and spiritual aspects (Gonzalo, 2023b).

Nightingale's environmental theory remains relevant today, guiding nurses in the design of healthcare settings that prioritize the creation of environments conducive to healing and recovery. It highlights the interconnectedness of the physical, social, and psychological elements in nursing practice and serves as a reminder of the enduring importance of a health-promoting environment in patient care.

Peplau's Theory of Interpersonal Relations

Hildegard Peplau's theory of interpersonal relations, developed in the 1950s, is a landmark framework in nursing that focuses on the interpersonal relationship between the nurse and the patient as a therapeutic process. Peplau emphasized the importance of understanding the dynamics of the nurse-patient relationship in promoting positive health outcomes. The theory consists of four phases: orientation, identification, exploitation, and resolution (Gonzalo, 2023c):

1. In the orientation phase, the nurse and the patient establish a connection, and the patient seeks help.
2. The identification phase involves the patient clarifying their thoughts and feelings, while the nurse assists in defining the problem.
3. During the exploitation phase, the patient utilizes the help offered by the nurse to address the identified problem and gain a better understanding of their situation.
4. Finally, in the resolution phase, the patient resolves the problem and achieves independence with the nurse's support.

Peplau's theory views nursing as an interpersonal and therapeutic process, with the nurse acting as a facilitator, resource, and counselor. It underscores the significance of communication, empathy, and mutual understanding in building a therapeutic relationship. Peplau believed this relationship could positively influence the patient's emotional well-being and contribute to their overall health (Gonzalo, 2023c).

The theory of interpersonal relations has had a lasting impact on nursing practice, guiding nurses in developing meaningful connections with their patients. It has been influential in psychiatric and mental health nursing and has broader applications across various healthcare settings. In the context of mental health care, where trust and empathy are foundational, the theory of interpersonal relations provides a guiding framework for nurses to make connections that extend beyond conventional caregiving. The theory encourages active listening and a deep understanding of patients' experiences, emotions, and perspectives, proving invaluable to mental health nursing. It fosters collaboration in treatment planning and promotes a nonjudgmental and empathetic attitude, contributing to reducing the stigma associated with mental health conditions. Peplau's emphasis on the interpersonal aspect of nursing has contributed to the humanization of patient care and remains relevant in contemporary nursing practice.

Leininger's Culture Care Theory

Madeleine Leininger's culture care theory, also known as transcultural nursing theory, is a comprehensive framework that emphasizes the importance of cultural competence in nursing care. Developed in the 1950s, Leininger's theory posits that culture plays a crucial role in shaping an individual's health beliefs, practices, and responses to illness. The central tenet of this theory is that culturally congruent care, which aligns with the patient's cultural values, beliefs, and practices, leads to improved health outcomes (Lancellotti, 2008).

Leininger classified nursing care into three modes: cultural care preservation (or maintenance), cultural care accommodation (or negotiation), and cultural care repatterning (or restructuring). Cultural care preservation focuses on maintaining cultural practices that promote health. Cultural care accommodation involves adapting nursing care to align with the patient's cultural values. Cultural care repatterning aims to assist individuals in changing cultural practices that may be detrimental to their health (Lancellotti, 2008).

The culture care theory emphasizes the need for nurses to be culturally competent and to provide care that respects and incorporates the cultural context of each patient. It recognizes that individuals from diverse cultural backgrounds may have different health beliefs and practices, which must be taken into account to deliver effective

and person-centered care. This theory has had a profound impact on nursing education, research, and practice by promoting cultural sensitivity and competence. It encourages healthcare professionals to recognize and respect cultural diversity, fostering a more inclusive and person-centered approach to care. Leininger's culture care theory remains a foundational framework in transcultural nursing, guiding nurses in delivering culturally congruent and competent care to individuals from various cultural backgrounds.

Orem's Self-Care Deficit Nursing Theory

Dorothea Orem's self-care deficit nursing theory is a conceptual framework developed to guide nursing practice by focusing on the individual's ability to perform self-care activities. Orem introduced this theory in the 1950s and expanded it over subsequent decades. The core premise is that individuals have the capacity for self-care, and nursing interventions are required when individuals are unable to meet their own self-care needs (*Orem's self-care deficit nursing theory*, n.d.).

The theory identifies three related components: self-care, self-care deficit, and nursing systems. Self-care encompasses the activities individuals initiate and perform on their own behalf to maintain life, health, and well-being. Self-care deficit occurs when an individual is incapable of meeting their self-care needs adequately. Nursing systems, in this context, refer to actions taken by nurses to assist and support individuals with self-care deficits (*Orem's self-care deficit nursing theory*, n.d.).

Orem categorized self-care into two types: universal self-care requisites, which are common to all individuals, and developmentally based self-care requisites, which vary according to an individual's life stage, health status, and sociocultural factors. The theory proposes that nursing care should be designed to supplement or substitute for an individual's self-care abilities, aiming to promote independence and prevent or alleviate self-care deficits (*Orem's self-care deficit nursing theory*, n.d.).

Orem's self-care deficit nursing theory has had a profound impact on nursing education, research, and practice. It provides a systematic and comprehensive framework for nurses to assess, plan, and implement interventions that address the self-care needs of individuals. This theory has been instrumental in shaping nursing curricula and guiding the development of person-centered care plans, emphasizing the importance of empowering individuals to participate actively in their own care and promoting optimal health outcomes.

Henderson's Nursing Need Theory

Virginia Henderson's nursing need theory is a foundational framework in nursing that delineates the essence and responsibilities of nursing practice. Developed in the 1950s, Henderson's theory focuses on the role of the nurse in assisting individuals to achieve and maintain health, or to achieve a peaceful death when health is no longer possible (*Henderson's nursing need theory*, n.d.).

Central to Henderson's theory are the fourteen basic needs that individuals require assistance with during times of illness. These needs encompass physiological, psychological, social, and spiritual dimensions (Figure 1.8) (*Henderson's nursing need theory*, n.d.).

Virginia Henderson's Nursing Need Theory	
Physiological	1. Breathe normally 2. Eat and drink adequately 3. Eliminate body wastes 4. Move and maintain desirable postures 5. Sleep and rest 6. Select suitable clothes—dress and undress 7. Maintain body temperature within normal range by adjusting clothing and modifying environment 8. Keep the body clean and well groomed, and protect the integument
Psychological	9. Work in such a way that there is a sense of accomplishment 10. Learn, discover, or satisfy the curiosity that leads to normal development and health and use the available health facilities
Social	11. Communicate with others in expressing emotions, needs, fears, or opinions 12. Avoid dangers in the environment and avoid injuring others 13. Play or participate in various forms of recreation
Spiritual	14. Worship according to one's faith

FIGURE 1.8 Virginia Henderson's need theory identifies fourteen basic needs. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Nursing need theory has played a crucial role in shaping nursing education and practice, providing a comprehensive framework for understanding and meeting the diverse needs of individuals across the health-illness continuum. Henderson's emphasis on the holistic nature of nursing care and the promotion of patient independence remains influential in contemporary nursing theories and practices.

Roy's Adaptation Model

Sister Callista Roy's adaptation model, developed in the 1970s, is a prominent nursing theory that focuses on the idea of adaptation as the goal of nursing care. This model is based on the belief that individuals are in constant interaction with their environment and that adaptation is a fundamental process for promoting health and well-being (*Roy's adaptation model of nursing*, n.d.).

Roy's theory identifies four key adaptive modes: physiological, self-concept, role function, and interdependence. The physiological mode encompasses the physical processes that contribute to an individual's health, while the self-concept mode relates to the individual's perception of themselves. The role function mode involves the roles and responsibilities individuals take on in life, and the interdependence mode focuses on the relationships and connections individuals have with others (*Roy's adaptation model of nursing*, n.d.).

The adaptation model proposes that individuals strive for adaptation; when faced with stimuli or stressors, they use adaptive responses to maintain balance and achieve a state of well-being. Nursing, in this context, is viewed as a science and practice that helps individuals adapt to changes in their physiological and psychosocial environment. Nurses assess the adaptive capabilities of individuals and provide interventions to support their adaptation processes.

Roy's theory has been influential in guiding nursing practice, education, and research. It provides a holistic perspective on the individual as an adaptive system, considering both the biological and psychosocial aspects of health. The adaptation model is particularly applicable in situations where individuals are experiencing changes or challenges, as it emphasizes the importance of nursing interventions that facilitate adaptation and promote optimal health outcomes.

REAL RN STORIES

Applying Roy's Adaptation Model in Practice

Nurse: Juanita, BSN
Clinical setting: Cardiac department
Years in practice: 27
Facility location: Rural town in South Carolina

I recently cared for a patient named Mr. Anderson, an 80-year-old individual admitted for heart failure exacerbation. When caring for Mr. Anderson, I applied Roy's adaptation model by assessing Mr. Anderson's physiological, psychological, and social needs to provide individualized care for the patient.

In considering the physiological adaptations, I closely monitored Mr. Anderson's vital signs, administered prescribed medications, and collaborated with the healthcare team to stabilize his cardiac function, recognizing the threat his failing heart posed to his physiological integrity. By considering psychological adaptations, I was able to understand the emotional impact of chronic illness, particularly in the older adult. I engaged Mr. Anderson in open communication, provided emotional support, and addressed his fears and anxieties surrounding the implications of heart failure on his daily life. In terms of social adaptation, I collaborated with the hospital's social work team to evaluate Mr. Anderson's living situation, support systems, and potential challenges he might face upon discharge. Ensuring he had a safe and supportive environment was crucial for his recovery.

By applying Roy's adaptation model (RAM), I aimed to individualize Mr. Anderson's care based on his unique needs and responses. Recognizing the interconnectedness of his physiological, psychological, and social aspects allowed me to enhance his ability to adapt to the challenges posed by his health condition, ultimately promoting overall well-being and a smoother transition back to his home environment.

Roger's Science of Unitary Human Beings Theory

Martha Rogers's science of unitary human beings theory is a nursing theory that diverges from traditional medical models by focusing on the unitary nature of human beings within the universe. Developed in the 1970s, Rogers's theory posits that individuals are inseparable from their environment and are characterized by irreducible, indivisible energy fields. In this model, human beings are viewed as open, infinite energy fields that interact with the environment in continuous and evolving patterns (*Rogers's theory of unitary human beings*, n.d.).

Rogers's theory emphasizes the concept of "universe-human-environment process," considering individuals as integral parts of the broader cosmic environment. The unitary human being is seen as a unified field, not reducible to the sum of its parts, and continuously evolving in patterns of organization and complexity. The science of unitary human beings theory has profound implications for nursing practice, as it underscores the holistic and individualized nature of care. Rogers proposed that nursing interventions should be directed toward patterning and repatterning the energy fields of individuals to promote health and well-being. She advocated for innovative and alternative approaches to health care that recognize the uniqueness of each individual and the dynamic interactions between the person and the environment (*Rogers's theory of unitary human beings*, n.d.).

While Rogers's theory has been considered abstract and challenging to apply in certain healthcare settings, it has contributed significantly to the evolution of nursing thought. It has influenced the development of holistic nursing practices, emphasizing a nonreductionist perspective and encouraging nurses to explore innovative ways of understanding and enhancing the well-being of individuals within the broader context of the universe. Some argue, however, that the lack of robust empirical evidence supporting the theory, complex terminology, and its limited applicability across diverse nursing contexts raises questions about its practical utility. Despite these criticisms, Rogers's science of unitary human beings theory has sparked important discussions in the nursing community and continues to shape the theoretical landscape of the profession.

Watson's Theory of Human Caring

Jean Watson's theory of human caring, introduced in the 1970s and further developed over the years, is a foundational nursing theory that emphasizes the importance of the interpersonal relationship between the nurse and the patient. At the core of Watson's theory is the belief that caring is central to the discipline of nursing and

constitutes the essence of the nurse-patient connection. Watson's theory incorporates both humanistic and holistic elements, focusing on the spiritual, emotional, and psychological dimensions of care in addition to the physical aspects (Watson Caring Institute, n.d.b). The theory of human caring outlines ten "carative factors" (now called 10 Caritas Processes), which is a framework for caring-healing arts to complement conventional medicine, that serve as a guide for nursing practice (Table 1.3) (Watson Caring Institute, n.d.b).

Carative Factor	Explanation	Example
Formation of a humanistic-altruistic system of values	Involves cultivating a sense of commitment to the well-being and dignity of others. This factor emphasizes the importance of altruism and a value system centered on human needs.	A nurse takes time to genuinely listen to a patient's concerns, demonstrating a commitment to understanding and supporting their well-being.
Instillation of faith-hope	Focuses on fostering and sustaining a positive outlook and belief in the possibilities of healing and recovery. This factor aims to instill faith and hope in the patient's ability to overcome challenges.	A nurse provides encouragement and support to a patient diagnosed with a chronic illness, emphasizing the potential for improvement and recovery.
Cultivation of sensitivity to self and others	Involves developing an awareness and appreciation of one's own experiences and emotions, and those of others. This factor emphasizes the importance of empathy and sensitivity in nursing care.	A nurse reflects on personal experiences to better understand the emotions of a grieving patient, creating a more empathetic and supportive connection.
Promotion of a helping-trusting, human-caring relationship	Emphasizes the creation of a trusting and supportive relationship between the nurse and the patient. This factor underscores the significance of the therapeutic alliance in promoting healing.	A nurse establishes trust with a new patient by actively listening, being transparent about treatment plans, and demonstrating genuine care and empathy.
Promotion and acceptance of the expression of positive and negative feelings	Encourages an open and nonjudgmental environment where patients feel free to express a range of emotions. This factor recognizes the therapeutic value of emotional expression.	A nurse validates a patient's frustration or anxiety, creating a safe space for the patient to openly discuss and cope with their emotions.
Systematic use of the scientific problem-solving method	Involves the application of critical thinking and evidence-based practice to address healthcare challenges. This factor emphasizes the importance of a systematic and analytical approach.	A nurse analyzes a complex patient case, incorporating evidence-based guidelines and collaborating with the healthcare team to develop an effective care plan.
Promotion of interpersonal teaching-learning	Focuses on facilitating a dynamic and interactive teaching-learning process between the nurse and the patient. This factor highlights the significance of education and mutual learning in health care.	A nurse engages in a conversation with a patient, providing information about their condition and involving them in decision-making to enhance understanding and collaboration.

TABLE 1.3 Carative Factors of the Theory of Human Caring

Carative Factor	Explanation	Example
Provision for a supportive, protective, and/or corrective mental, physical, sociocultural, and spiritual environment	Involves creating an environment that promotes the patient's well-being on multiple levels, including mental, physical, social, cultural, and spiritual aspects.	A nurse ensures a quiet and calm environment for a patient recovering from surgery, incorporating cultural considerations and addressing spiritual needs.
Assistance with gratification of human needs	Focuses on helping patients meet their basic and higher-level needs, recognizing the importance of addressing both physical and existential requirements for well-being.	A nurse assists a bedridden patient with activities of daily living while also exploring ways to fulfill the patient's psychological and spiritual needs during their recovery.
Allowance for existential-phenomenological forces	Involves acknowledging and exploring the unique lived experiences and perspectives of individuals. This factor emphasizes the significance of recognizing the patient's existential journey.	A nurse engages in reflective conversations with a terminally ill patient, allowing them to share their thoughts and feelings about the meaning and purpose of life during their end-of-life care.

TABLE 1.3 Carative Factors of the Theory of Human Caring

Watson's theory encourages nurses to move beyond task-oriented care and connect with patients on a deeper, more meaningful level. It emphasizes the transformative power of caring, not only in promoting physical healing but also in fostering a sense of well-being and dignity. The theory of human caring has influenced nursing education, practice, and research, contributing to the development of person-centered approaches to health care and promoting the idea that caring is an essential and transcendent aspect of the nursing profession.

1.6 Application of Theories in Nursing Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the link between nursing theory and nursing knowledge
- Discuss how nursing theories help shape the future of nursing
- Recognize the use of nursing theory in the application of standards of nursing practice

In the dynamic realm of nursing practice, the application of theoretical frameworks guides the approach to patient care. This section delves into the multifaceted ways in which nursing theories are integrated into daily nursing practice, shaping the actions and decisions of healthcare professionals. As we explore the practical application of these theoretical foundations, we uncover the pivotal role they play in informing and elevating the standards of nursing care. From providing a structured decision-making framework to influencing ethical considerations and patient outcomes, nursing theories emerge as essential tools that bridge the gap between knowledge and practice.

Link Between Theory and Knowledge in Nursing

The link between theory and knowledge is the foundation on which the entire practice of nursing stands. Nursing theory acts as the compass that guides how nurses approach patient care. It also provides a structured framework shaping the knowledge that nurses acquire through education. This **theoretical knowledge** of established concepts forms the basis for understanding the complexities of health care and the unique role of nursing within it. As nurses apply what they have learned to real-life situations, the theoretical knowledge becomes **experiential knowledge**—it is the practical, hands-on learning that happens when directly caring for patients. This practical experience, in turn, feeds back into theoretical knowledge, enriching and shaping it based on the real-world scenarios encountered. The interplay between nursing theory and knowledge is dynamic and continuous, creating a cycle that ensures theoretical understanding evolves with the practical realities of patient care. This connection highlights the

importance of a well-rounded, dynamic approach to knowledge that encompasses both theory and hands-on experience.

Theoretical Knowledge

Nursing theory and theoretical knowledge are interconnected and mutually beneficial. The link between them is integral to the development and advancement of the nursing profession. Nursing theory provides a framework for understanding and organizing knowledge within the field, guiding nursing practice, education, and research. Theoretical knowledge encompasses the concepts, principles, and models derived from nursing theories. These theories serve as the foundation for guiding nursing practice, influencing the way nurses approach patient care and fostering a deeper understanding of the nurse's role.

Theoretical knowledge in nursing, derived from nursing theories, empowers nurses with a structured framework for critical thinking, enabling them to make informed decisions and provide holistic care. This knowledge not only informs nursing education, in which students learn the principles and concepts that underpin the profession, but also facilitates ongoing research efforts. Nursing theories guide research design, hypothesis formulation, and results interpretation, contributing to the growth of EBP. Moreover, the link between nursing theory and theoretical knowledge is essential for nurturing a professional identity among nurses, emphasizing the unique contributions of nursing to health care. As healthcare landscapes evolve, this theoretical foundation helps nurses adapt to new challenges while maintaining the core principles of the profession, ultimately enhancing the quality of patient care and the professionalism of the nursing field.

Experiential Knowledge

The link between nursing theory and experiential knowledge is dynamic and integral to providing safe and effective care. Imagine nursing theory as a roadmap for understanding and guiding patient care. Theoretical knowledge, born from these theories, is the foundational understanding gained through education, offering nurses a structured framework for practice. As nurses apply these theories in real-life scenarios, theoretical knowledge transforms into experiential knowledge—a hands-on, practical understanding gained through patient interactions and clinical experiences. The link between nursing theory and experiential knowledge is a dynamic loop, in which theoretical understanding both informs and evolves through hands-on experience, ensuring nursing knowledge remains adaptable and responsive to the ever-changing landscape of health care.

Reflective Skills

The connection between nursing theory and **reflective skills** is pivotal in fostering a culture of continuous learning and improvement within the nursing profession. Reflective skills involve the ability to critically analyze and thoughtfully contemplate one's own experiences, actions, and decisions and then learn from them. The application of nursing theory in practice provides a rich source of experiences for nurses to reflect on. Through reflective practices, nurses can assess the alignment of their actions with theoretical principles, identify areas for improvement, and refine their approaches to patient care. This reflective process enhances self-awareness, encourages critical thinking, and contributes to ongoing professional development.

The synergy between nursing theory and knowledge gained from reflection allows nurses to bridge the gap between theory and practice, fostering a deeper understanding of the complexities inherent in healthcare delivery. As nurses engage in reflective practices, they not only refine their clinical skills but also contribute to the evolution of nursing theories by providing real-world insights and feedback. This iterative relationship between nursing theory and reflective knowledge ultimately promotes a culture of continuous improvement, ensuring that nursing practice remains evidence based, person centered, and adaptable to the ever-changing landscape of health care.

Shaping the Future Development of Nursing

Nursing theories are guiding forces that shape the future development of nursing, contributing to the profession's evolution and ensuring its continued relevance in dynamic healthcare landscapes. These theoretical frameworks play a crucial role in defining nursing as a profession, providing a conceptual roadmap that delineates the unique identity and contributions of nurses within the healthcare spectrum. Simultaneously, they guide the establishment of professional limits and ethical boundaries, maintaining the integrity and trustworthiness of nursing practice. Additionally, nursing theories direct the recommendations for future education, ensuring that curricula and learning strategies align with the evolving needs of health care and equip nurses with the knowledge and skills required for

contemporary practice. Furthermore, these theories inform the development of practice guidelines, guiding nurses in delivering person-centered care while navigating technological advancements and ethical considerations.

Defining Nursing as a Profession

Nursing theories play a pivotal role in shaping the future of nursing by contributing to the definition of nursing as a distinct and evolving profession. These theoretical frameworks provide a conceptual foundation that extends beyond the technical aspects of patient care, offering a philosophical understanding of the nursing role. By delineating the fundamental principles and values inherent in nursing practice, theories serve as a guidepost for current and future nurses, shaping their professional identity. They emphasize not only the acquisition of clinical skills but also the importance of empathy, advocacy, and holistic patient care.

Nursing theories also contribute to the nursing profession by articulating the unique body of knowledge that constitutes the nursing profession. This body of knowledge encompasses not only clinical expertise but also the ability to navigate the intricate dynamics of the nurse-patient relationship and the broader healthcare context. As nursing adapts to advancements in technology, changes in healthcare delivery, and evolving patient needs, nursing theories provide a stable foundation, ensuring that the essence of the profession remains rooted in its foundational values.

Professional Limits and Boundaries

Nursing theories play a crucial role in shaping the future of nursing by providing a framework that helps delineate professional limits and boundaries. These theoretical frameworks establish ethical guidelines and standards that guide nurses in navigating complex situations and making decisions within their scope of practice. By emphasizing the importance of ethical considerations, patient autonomy, and confidentiality, nursing theories contribute to defining the boundaries of professional conduct. As health care evolves and technology advances, nursing theories help establish limits on the integration of new practices and technologies, ensuring that ethical principles and patient safety remain at the forefront.

Additionally, nursing theories assist in clarifying the collaborative nature of health care and the boundaries between different healthcare professions. They provide a foundation for interdisciplinary collaboration, defining the unique contributions of nursing within the broader healthcare team. This collaborative understanding is essential for shaping the future of nursing as healthcare systems become increasingly integrated and team oriented.

Nursing theories also contribute to the ongoing development of ethical guidelines and policies that regulate the profession. By engaging with ethical frameworks, nurses are better equipped to address emerging ethical challenges, set professional limits, and advocate for the well-being of their patients. This proactive approach to defining professional limits ensures that nursing remains a trusted and ethical profession in the face of evolving healthcare landscapes.

Directing Future Education Recommendations

Nursing theories significantly influence the future of nursing by serving as guiding principles for directing education recommendations. These theoretical frameworks contribute to the ongoing development and refinement of nursing education by providing a structured foundation for curricula and educational programs. By incorporating nursing theories into educational strategies, educators can impart not only technical skills but also a deeper understanding of the profession's underlying values and principles. Nursing theories guide the identification of essential competencies, shaping the educational landscape to align with the evolving needs of health care.

In addition, nursing theories contribute to the creation of educational pathways that emphasize critical thinking, cultural competence, and ethical decision-making. As the healthcare environment becomes increasingly complex, these theoretical foundations help educators prepare future nurses to navigate diverse patient populations, emerging technologies, and evolving healthcare systems. The integration of nursing theories into education recommendations ensures that students are equipped not only with practical skills but also with the ability to think critically and adapt to dynamic healthcare challenges.

Additionally, nursing theories inform recommendations for continuous professional development, encouraging a lifelong learning mindset among nurses. By emphasizing the importance of staying abreast of theoretical advancements and incorporating EBPs, nursing theories guide education recommendations that foster a culture of continuous learning. This approach ensures that nurses are prepared to meet the changing demands of health care

and contribute meaningfully to the advancement of the profession.

Directing Future Practice Guidelines

Nursing theories exert a profound influence on the future of nursing by directing and shaping the practice of the profession. These theoretical frameworks provide a structured foundation for nursing practice, guiding the delivery of person-centered care, and influencing the development of evidence-based protocols. By incorporating nursing theories into practice, nurses gain a deeper understanding of the philosophical underpinnings of their profession, leading to more thoughtful and intentional caregiving.

Nursing theories also contribute to the evolution of future practice by emphasizing holistic and patient-focused approaches. As the healthcare landscape continues to evolve, nursing theories guide practitioners in recognizing the importance of addressing not only the physical needs of patients but also their psychological, social, and cultural dimensions. This holistic perspective fosters a more comprehensive and compassionate delivery of care, aligning with the changing expectations and demographics of healthcare recipients.

Moreover, nursing theories inform the integration of technology and innovation into practice while maintaining ethical standards. As healthcare technologies advance, these theoretical foundations help nurses navigate the ethical considerations of incorporating new tools and interventions, ensuring that patient safety and well-being remain at the forefront of practice.

Additionally, nursing theories contribute to the professional autonomy and decision-making abilities of nurses. By offering a theoretical framework, these theories empower nurses to critically assess situations, make informed decisions, and advocate for the best interests of their patients. This empowerment is crucial for shaping the future of nursing practice in a healthcare environment that demands adaptability, critical thinking, and a strong ethical foundation.

Application of Theory in Nursing Practice Standards

The application of nursing theory in nursing practice standards is a fundamental aspect that enriches and informs the delivery of high-quality patient care. Nursing theories provide a theoretical framework that guides the development and refinement of practice standards, ensuring that they align with the profession's core values and principles. By incorporating nursing theories into practice standards, healthcare organizations and professionals establish a solid foundation for decision-making, care planning, and evaluation of outcomes. For instance, a theory emphasizing person-centered care may influence practice standards to prioritize individualized and holistic approaches to patient care. Furthermore, nursing theories contribute to the establishment of ethical guidelines within practice standards, guiding nurses in navigating complex ethical dilemmas and upholding the integrity of the profession. This integration of theory into practice standards not only elevates the overall quality of care but also fosters a shared understanding among healthcare professionals, reinforcing a commitment to evidence-based and theoretically informed practice.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Linking Nursing Theories to Patient Safety

The QSEN initiative plays a crucial role in enhancing clinical safety and promoting excellence in patient care. The QSEN focuses on integrating essential competencies into nursing education and practice to ensure that nurses are equipped to deliver safe and high-quality care. When examining the link between nursing theories and clinical safety within the QSEN framework, it becomes evident that theoretical foundations contribute significantly to shaping nurses' understanding of safety principles, risk mitigation, and delivery of patient-centered care.

- Integration of EBP: Nursing theories serve as the backbone for EBP, a fundamental component of QSEN. Theoretical frameworks guide nurses in critically evaluating evidence, making informed decisions, and implementing best practices to enhance patient safety. The integration of nursing theories into education ensures that nurses understand the theoretical underpinnings of evidence-based care, promoting a culture of continuous improvement and patient safety.
- Patient-centered care: QSEN emphasizes patient-centered care as a key competency, aligning with many

nursing theories that prioritize holistic and individualized approaches. Theoretical perspectives such as Watson's theory of human caring or Peplau's theory of interpersonal relations provide a foundation for understanding the importance of establishing meaningful nurse-patient relationships, communicating effectively, and addressing patients' unique needs. This theoretical grounding contributes to safer and more patient-focused clinical practices.

- Teamwork and collaboration: Nursing theories that highlight the collaborative nature of health care, such as Roy's adaptation model or Orem's self-care deficit nursing theory, align with QSEN's focus on teamwork and collaboration. Theoretical frameworks guide nurses in understanding their roles within interdisciplinary teams, fostering effective communication, and promoting a collaborative approach to patient care. This integration enhances clinical safety by ensuring clear communication and coordination among healthcare team members.
- Safety competencies: The QSEN identifies safety as a core competency, and nursing theories provide the theoretical basis for understanding the principles of safety in health care. Theoretical perspectives, such as Leininger's culture care theory or Henderson's nursing need theory, contribute to nurses' understanding of factors influencing patient safety, including cultural considerations and meeting patients' basic needs. This theoretical knowledge informs safe and culturally competent care delivery.
- Informing continuous quality improvement: Many nursing theories emphasize the importance of continuous quality improvement, aligning with QSEN's commitment to ongoing enhancement of healthcare practices. Theoretical foundations guide nurses in critically assessing their actions, reflecting on patient outcomes, and implementing changes to improve care processes. This integration supports a culture of continuous learning and adaptation, contributing to sustained clinical safety improvements.
- Informatics integration: Nursing theories contribute to the integration of informatics skills, aligning with QSEN's focus on informatics competency. Theoretical frameworks guide nurses in understanding how to use information and technology to support decision-making, enhance communication, and improve patient outcomes. The theoretical grounding in informatics ensures that nurses can navigate and utilize health information systems effectively, promoting safe and efficient care practices. This integration supports QSEN's goal of preparing nurses to use technology and information systems to deliver and enhance patient care while aligning with theoretical perspectives that emphasize the role of technology in health care.

Decision-Making Framework

The application of nursing theory as a decision-making framework is a cornerstone of effective and person-centered care. Nursing theories provide a structured and comprehensive foundation that guides nurses in making informed decisions across various healthcare scenarios. These theoretical frameworks help nurses analyze situations, understand patient needs, and prioritize care based on established principles. For instance, a nursing theory emphasizing the importance of environmental factors may prompt a nurse to consider how the individual's surroundings impact their well-being.

Moreover, theories focused on the nurse-patient relationship contribute to decision-making by highlighting the significance of communication, empathy, and collaboration. By integrating nursing theory into their decision-making processes, nurses can ensure a more holistic approach that encompasses not only the physical aspects of care but also the psychological, social, and cultural dimensions. This application of nursing theory serves as a valuable tool for enhancing critical-thinking skills, fostering ethical decision-making, and elevating the overall quality of patient care.

Directing Future Research

The application of nursing theory plays a pivotal role in guiding and shaping future research endeavors within the nursing field. Nursing theories provide a conceptual framework that informs the identification of research priorities, the formulation of research questions, and the interpretation of findings. By grounding research in established nursing theories, researchers can build on a solid theoretical foundation, ensuring that studies align with the core principles and values of the profession.

Additionally, nursing theories offer a lens through which researchers can explore and understand complex phenomena, guiding the development of hypotheses and conceptual frameworks. For example, a nursing theory emphasizing patient empowerment may direct research efforts toward interventions that enhance patient engagement in their care. This application of nursing theory not only contributes to the generation of new

knowledge but also ensures that research outcomes are relevant and applicable to the practical realities of nursing practice. As nursing continues to evolve, the integration of nursing theory in research remains instrumental to advancing the profession's evidence base and promoting EBP.

Summary

1.1 Evolution of Nursing and Nursing Practice

The discipline and practice of nursing have undergone significant transformations throughout their history, evolving from a variety of primarily task-oriented roles to a dynamic and complex profession. Dating back to figures like Florence Nightingale, nurses have likewise evolved, shifting their focus from basic care to a holistic approach that considers the physical, emotional, and social aspects of patient well-being. In the contemporary landscape, several trends shape nursing practice, including the increasing emphasis on technology, with EHRs and telehealth becoming integral to healthcare delivery. Other important trends to consider are the continued nursing shortage; increased requirements for higher education, including the proliferation of online nursing programs; and recognition of nurses' essential need for self-care. Today, the art and science of nursing practice are evident in the balance between the compassionate, interpersonal aspects (art) and the evidence-based, technical components (science). This balance underscores the multifaceted nature of contemporary nursing, reflecting its rich history and adaptability to the evolving healthcare landscape.

1.2 Nursing Education Programs

The diverse landscape of nursing education is composed of various levels of education, from practical and vocational programs to advanced degrees, each contributing uniquely to the development of nursing professionals. The licensure process, overseen by regulatory bodies, serves as a crucial gateway to nursing practice, ensuring that individuals meet essential qualifications and competencies. The culmination of this journey in examinations and practical assessments marks the entry point to a fulfilling career in health care. It also lays the foundation for a lifelong commitment to learning and adherence to best practices and ethical standards.

Nursing education encompasses a range of programs, each tailored to specific career aspirations. Licensed practical nurses and LVNs undergo specialized 12- to 18-month programs that focus on practical nursing skills and basic education, enabling them to work under supervision in roles such as medication administration and wound care. Associate degree in nursing programs, spanning two years, prepare individuals for RN roles, offering a broader foundation than LPN/LVN programs. Nurses prepared with ADN engage in patient assessments, care planning, and medication administration, with training for more independent clinical decisions. Bachelor of science in nursing programs, which are typically four years, provide comprehensive education covering clinical skills, theory, research, leadership, and public health, enabling graduates to participate in complex patient care, decision-making, and coordination. The BSN is a notable option for entry into professional nursing practice, reflecting the evolving complexity of health care and offering expanded career opportunities.

Graduate-level degrees such as MSN and doctoral degrees (DNP/PhD) equip nurses for advanced roles in leadership and research. The AACN contributes to education standards through *The Essentials*, which outlines the core principles for ensuring competency at each level of education. The licensure process ensures that nurses, from LPNs to advanced practitioners, adhere to competency and ethical standards, while ongoing education, career development, and specialty certifications foster continuous professional growth and contribute to the highest quality of patient care.

1.3 Nursing as a Profession

The scope of practice in nursing delineates the authorized limits within which nurses operate, encompassing roles, responsibilities, and interventions shaped by education, experience, and certifications. Regulatory bodies like state BONs and national and international organizations such as the ANA and the ICN establish and guide these scopes, emphasizing autonomy, collaboration, advocacy, education, and ethical conduct. The ICN plays a global role, focusing on principles that acknowledge nurses as autonomous professionals, stressing collaboration, advocating for patients, and promoting ongoing education and ethical standards. The ANA significantly shapes practice within the United States through documents like the *Scope and Standards of Practice*, influencing policies and maintaining high-quality nursing standards. State BONs define, regulate, and update the scope of practice at the jurisdictional level.

Nursing standards, including a code of ethics, provide a comprehensive framework for conduct, emphasizing person-centered care, professionalism, safety, and continuous learning. The Quality and Safety Education for

Nurses (QSEN) initiative, though not establishing formal standards, influences nursing education by emphasizing core competencies such as person-centered care, teamwork, EBP, quality improvement, safety, and informatics.

Nursing roles encompass caregiving, decision-making, management of care, communication, advocacy, and education. As caregivers, nurses address holistic patient needs, utilizing assessments, care plans, and ongoing monitoring. Decision-making involves clinical judgment, prioritization, resource allocation, and adaptation to change. In the role of a manager of care, nurses coordinate interdisciplinary teams, navigate healthcare systems, and ensure safety and quality. Communication is integral to nurses' roles as liaisons, advocates, and educators, fostering understanding and trust among patients and the healthcare team. Advocacy involves vocal support for patients' rights and well-being, extending to systemic efforts for equitable health care. Last, as educators, nurses empower patients and communities through clear and accessible health information, contributing to informed decision-making and better health outcomes.

1.4 History and Evolution of Nursing Theories

The evolution of nursing theory highlights the progressive development of conceptual frameworks that guide the nursing profession. Over time, nursing theories have evolved from early models emphasizing basic care to more complex and comprehensive frameworks that consider various factors influencing health care. Elements of a nursing theory typically include concepts, definitions, assumptions, and phenomena that collectively provide a systematic and organized approach to nursing practice. These elements help nurses understand and interpret their roles with respect to patient care and the broader healthcare environment.

In discussing the domains of nursing philosophy in relation to clinical practice, it is essential to consider the metaparadigm concepts of person, environment, health, and nursing. Philosophical perspectives guide nurses in understanding the interconnectedness of these domains and how they shape the delivery of care. Clinical judgment in nursing involves the application of these domains, enabling nurses to adopt a holistic approach that not only addresses the physical needs of each patient but also considers their unique experiences, the environment, and overall well-being. This integration of philosophy into clinical practice contributes to a more thoughtful and person-centered approach to nursing care.

1.5 Selected Nursing Theorist

Nursing theorists throughout history have played crucial roles in shaping the profession by developing frameworks and models that guide nursing practice. One prominent figure is Florence Nightingale, often considered the founder of modern nursing, whose environmental theory emphasized the impact of the environment on health. Later theorists like Hildegard Peplau focused on interpersonal relationships in nursing, while Virginia Henderson emphasized the importance of meeting patients' basic needs. Jean Watson's theory, grounded in human caring, and Madeleine Leininger's cultural care theory further expanded the scope of nursing. The interdisciplinary foundation for nursing theories is evident as these theories draw from various fields such as psychology, sociology, and biology to provide comprehensive frameworks for understanding and improving patient care. In current practice, nursing theorists continue to influence health care: for example, Patricia Benner's novice to expert model guides professional development, and Dorothea Orem's self-care deficit theory informs approaches to person-centered care. Recognizing and integrating these nursing theories into practice enhances the profession's ability to deliver holistic and person-centered care.

1.6 Application of Theories in Nursing Practice

The interconnection between nursing theory and nursing knowledge serves as the cornerstone of the nursing profession. Nursing theories provide a conceptual framework that guides the acquisition and application of knowledge in practice. They serve as guiding principles that not only shape current nursing practice but also play a pivotal role in envisioning the future of the profession. By defining the unique identity and contributions of nurses within health care, nursing theories contribute to the professionalization of the field. Moreover, these theoretical foundations actively influence the development of standards in nursing practice, ensuring that ethical guidelines and person-centered care remain central. As nurses apply these theories in real-life situations, they navigate complex scenarios with a structured decision-making framework, ultimately elevating the overall quality and integrity of patient care. In essence, the symbiotic relationship between nursing theory, nursing knowledge, and practice standards underscores their collective role in shaping the current and future landscape of nursing.

Key Terms

AACN *Essentials* of nursing education the core principles and competencies set by the American Association of Colleges of Nursing for each level of nursing education
adaptation theory a theory that focuses on the dynamic process of adaptation that individuals undergo in response to changes in their environment
advocate an individual who actively and vocally supports, defends, or promotes the rights, interests, and well-being of another person or a group
American Nurses Association (ANA) one of the largest and most influential professional nursing organizations in the United States
associate degree in nursing (ADN) a two-year program offered by various educational institutions that is designed to prepare individuals for a career as a registered nurse (RN)
assumption a foundational belief or proposition that is accepted without direct empirical evidence
autonomy an individual's ability to make decisions and determine courses of actions based on being well informed, giving consent, and volunteering without coercion
bachelor of science in nursing (BSN) comprehensive four-year degree program designed to prepare individuals for a career as a registered nurse (RN)
beneficence ethical principle that underscores the obligation to do good and promote the well-being of patients
board of nursing (BON) a regulatory body tasked with overseeing the practice of nursing within its jurisdiction, typically a state or territory
career development a broad spectrum of activities aimed at advancing a nurse's professional trajectory
caregiver an individual who provides physical, emotional, or practical support to individuals in need of assistance due to illness, disability, age-related challenges, or other conditions that impact their ability to perform daily activities independently
caring concept of providing compassionate and empathetic attention to individuals
clinical judgment utilizing nursing knowledge, critical thinking, and clinical reasoning, drawing from evidence, theories, and interdisciplinary insights to make informed and patient-centered decisions
code of ethics comprehensive set of principles that defines the ethical responsibilities and standards for an individual or a group
communicator an individual who engages in the process of conveying information, ideas, or messages to others
concept an idea that serves as a foundational element of a theory, contributing to its overall structure and coherence
concrete representing specific and tangible ideas or objects that can be directly observed or experienced
confidentiality maintaining patient privacy in terms of health and personal information
continuing education (CE) ongoing educational activities
decision-maker an individual or entity responsible for making choices or reaching conclusions in a particular context
definition a clear and precise explanation of the meaning of a concept or term
descriptive theory a theory that aims to systematically and objectively describe phenomena
developmental theory a theory that is influenced by broader theories of human development and that explores the stages and transitions individuals go through across the life span
Doctor of Nursing Practice (DNP) a practice-focused doctoral degree that emphasizes advanced clinical practice, leadership in healthcare systems, and evidence-based decision-making
Doctor of Philosophy (PhD) in Nursing a research-focused doctoral degree that emphasizes the generation of new nursing knowledge through rigorous scientific inquiry
domain a broad and overarching area of theoretical exploration or study
educator an individual who engages in the process of facilitating teaching and learning
electronic health record (EHR) a digital version of a patient's medical history, maintained and shared by multiple providers
electronic medical record (EMR) a digital version of a patient's medical history, maintained and used by a single provider
environment domain the surroundings, context, and external factors that influence a person's well-being
experiential knowledge practical knowledge acquired through direct engagement and hands-on experiences
general systems theory the theory that any system, including a healthcare system or an individual patient, can be

viewed as a complex organization of interacting and interrelated components

hard skills technical and clinical competencies

health domain a dynamic and holistic concept that encompasses the overall well-being of the person, not just the absence of illness or disease

herbalists individuals with specific knowledge of herbal remedies and healing practices

holism concept that individuals should be viewed and treated as whole beings

holistic care a care approach that considers the whole entity, encompassing the physical, psychological, emotional, and spiritual dimensions of an individual patient

in-service education ongoing training initiatives provided within healthcare institutions

International Council of Nurses (ICN) a worldwide federation of national nursing associations

licensed practical nurse (LPN) a graduate of a practical nursing program, possessing the skills and knowledge required for entry-level positions in health care and a passing score on the national licensing examination; synonymous with licensed vocational nurse (LVN)

licensed vocational nurse (LVN) a graduate of a practical nursing program, possessing the skills and knowledge required for entry-level positions in health care and a passing score on the national licensing examination; synonymous with licensed practical nurse (LPN)

manager of care directing and overseeing the comprehensive delivery of healthcare services

Master of Science in Nursing (MSN) an advanced graduate degree that provides nurses with a higher level of education and specialization in various areas of nursing practice

metaparadigm a set of overarching concepts and principles that provides a comprehensive framework for understanding a particular discipline or field of study

nonmaleficence ethical principle that emphasizes the obligation to do no harm intentionally

nursing a profession that encompasses the art and science of providing comprehensive and holistic care to promote and maintain health, prevent illness, and alleviate suffering for individuals, families, and communities

nursing domain a fundamental and central concept that defines the unique role, purpose, and responsibilities of the nursing profession

nursing metaparadigm a conceptual framework that encompasses four fundamental concepts (person, health, environment, and nursing) central to the discipline of nursing

nursing philosophy the compass that guides a nurse's practice, encompassing beliefs about the nature of nursing, patient care, ethical considerations, and the nurse's role within the healthcare system

nursing practice the application of nursing knowledge, skills, and principles in the delivery of health care to individuals, families, and communities

nursing theorist an individual, typically a nurse with advanced education and experience, who has made significant contributions to the development of nursing theory

nursing theory a structured and systematic framework composed of concepts, principles, and propositions that collectively guide and shape the understanding of nursing practice

person domain the central focus of nursing philosophy, involving the patient or client

phenomenon a specific aspect of interest or an observable occurrence that is the focus of theoretical exploration and study

philosophy the exploration of fundamental questions about existence, values, and the human experience through critical inquiry and reflection

prescriptive theory a theory that provides guidance on how nursing care should be conducted

professional nursing organization collective body formed by nurses to represent and advocate for the interests of the nursing profession

Quality and Safety Education for Nurses (QSEN) a collaborative effort to advance and promote the integration of quality and safety competencies into nursing education and practice

reflective skill process of examining and evaluating one's own experiences and learning from them

registered nurse (RN) a licensed graduate of a nursing program, capable of a broad scope of practice that includes assessing patients, planning care, and collaborating with other healthcare professionals on complex cases

scope of practice defined limits and parameters within which a professional is authorized to work, make decisions, and provide services

self-care intentional actions and practices that individuals engage in to promote their physical, mental, and emotional well-being

soft skills interpersonal abilities and personal attributes
specialty certification official recognition of a nurse's expertise in a particular area of nursing
Standards of Practice standards designed by the ANA and based on the nursing process that provides a problem-solving-focused approach to nursing practice
theoretical knowledge knowledge that is based on established theories and concepts
theory a framework of related ideas intended to guide and support action

Assessments

Review Questions

1. During the Middle Ages, who primarily undertook nursing duties, and where did they provide care?
    a. family members in their homes
    b. monks and nuns in monasteries and convents
    c. herbalists in communities
    d. military personnel in wartime hospitals

2. What advancements occurred in the nursing profession during the mid-twentieth century?
    a. expansion of nursing roles during World War II
    b. establishment of the first nursing school
    c. embrace of EHRs and telehealth
    d. recognition of nurse practitioners as primary care providers

3. What milestone marked Florence Nightingale's influence on the formalization and professionalization of nursing education?
    a. establishment of the ANA
    b. creation of the first nursing school
    c. introduction of evidence-based practice
    d. development of specialized nursing fields

4. What does the "art of nursing" primarily emphasize in patient care?
    a. application of evidence-based knowledge
    b. technical expertise in medical procedures
    c. proficiency in administering medications
    d. interpersonal and compassionate dimensions of care

5. What nursing program is designed to prepare individuals for entry-level positions in health care and requires graduates to pass the NCLEX-PN for licensure?
    a. associate degree in nursing (ADN)
    b. bachelor of science in nursing (BSN)
    c. master of science in nursing (MSN)
    d. licensed practical nurse (LPN)/licensed vocational nurse (LVN)

6. What is a common prerequisite for obtaining licensure as a registered nurse (RN) for both ADN and BSN graduates?
    a. completion of a clinical practicum
    b. passing the NCLEX-PN
    c. completion of a doctoral program
    d. passing the NCLEX-RN

7. What is the primary goal of the doctor of nursing practice (DNP) program?
    a. preparation for leadership roles in academia
    b. research-focused doctoral education
    c. emphasis on advanced clinical practice, leadership, and evidence-based decision-making

d. integration of theory, research, and public health in nursing practice

8. What distinguishes BSN-prepared nurses from ADN-prepared nurses?
a. broader education including leadership, research, and public health
b. shorter duration of education
c. limited involvement in patient care
d. increased focus on practical nursing skills

9. Which global organization significantly influences the development of the nursing profession on a global scale and offers guidance regarding the scope of practice for nurses around the world?
a. state BONs
b. QSEN
c. ICN
d. ANA

10. Which organization primarily oversees the regular review and updating of guidelines within a given jurisdiction to align with advances in health care, changes in legislation, and evolving societal needs related to nursing practice within a specific state or jurisdiction?
a. ANA
b. QSEN
c. state BONs
d. ICN

11. The nurse is precepting a nursing student during a clinical rotation. What statement made by the student would warrant further education?
a. "Nursing standards serve as a framework for providing safe, quality care."
b. "Nursing standards align with the overarching principles of the nursing profession."
c. "Nursing standards articulate the expectations and ethical conduct required of nurses."
d. "Nursing standards may be incorporated into practice if the nurse chooses to do so."

12. The nurse takes proactive measures to prevent falls, such as using bed alarms and assisting patients with mobility. What ethical principle do these measures emphasize?
a. autonomy
b. privacy
c. nonmaleficence
d. justice

13. What is the primary purpose of nursing theories?
a. to dictate medical interventions
b. to provide a framework for nursing practice
c. to establish healthcare policies
d. to replace medical guidelines

14. How did nursing theories contribute to the historical development of the nursing profession?
a. by focusing on task-oriented practices
b. by discouraging research in nursing
c. by offering a basis for nursing interventions
d. by limiting the roles of nurses

15. In the late twentieth century, what shift occurred in the development of nursing theories?
a. a decline in the emphasis on evidence-based practice
b. a move toward task-oriented approaches
c. a decrease in the importance of research integration

d. a proliferation of theories addressing various aspects of nursing, health, and care

16. How do assumptions contribute to the theoretical framework in nursing?
a. by providing empirical evidence
b. by establishing shared understanding
c. by forming foundational beliefs
d. by guiding research design

17. What does the term "environment" in nursing philosophy encompass?
a. a multifaceted combination of physical, social, cultural, economic, and global factors
b. solely individualized influences
c. physical surroundings without cultural implications
d. exclusively cultural values and customs without broader influences

18. Who emphasized the nurse-patient relationship as a therapeutic and collaborative partnership in psychiatric nursing?
a. Jean Watson
b. Patricia Benner
c. Hildegard Peplau
d. Dorothea Orem

19. Who defined nursing as helping individuals achieve their highest level of independence in activities of daily living?
a. Faye Abdellah
b. Patricia Benner
c. Florence Nightingale
d. Virginia Henderson

20. What type of nursing theory provides recommendations, interventions, or strategies for achieving specific nursing goals?
a. adaptation theory
b. descriptive theory
c. developmental theories
d. prescriptive theory

21. What nursing theory views individuals as open, infinite energy fields that interact with the environment in continuous and evolving patterns?
a. Orem's self-care deficit nursing theory
b. Roger's science of unitary human beings theory
c. Leininger's culture care theory
d. Watson's theory of human caring

22. In what phase of Peplau's theory of interpersonal relations does the patient utilize the help offered by the nurse to address problems and gain a better understanding of their situation?
a. orientation phase
b. identification phase
c. exploitation phase
d. resolution phase

23. A nursing instructor is talking with a student about the link between theory and knowledge in nursing practice. What statement made by the nursing student would warrant further education?
a. "Nursing theory benefits theoretical knowledge, and theoretical knowledge benefits nursing theory."
b. "Theoretical knowledge is derived from theory and provides a framework for critical thinking."

c. "Theories are applied within clinical practice as experiential knowledge."
d. "Although reflection impacts knowledge in nursing practice, it does not impact the basic nursing theories."

24. What is the foundational role of nursing theory in the practice of nursing?
a. providing hands-on clinical experience
b. guiding patient communication
c. shaping the approach to patient care
d. offering administrative insights

25. What comment from a nursing student reflects the need for further education regarding how incorporating nursing theory into research enhances the evidence base of the nursing profession?
a. "Nursing theories ensure studies align with the core principles and values of the profession."
b. "The alignment of EBP with the core principles of the nursing profession is not contingent upon the incorporation of nursing theory into research."
c. "The integration of nursing theory in research ensures research outcomes are relevant and applicable to the practical realities of nursing practice."
d. "Understanding how nursing theory informs research priorities is key to advancing the evidence base and promoting evidence-based practice in nursing."

Check Your Understanding Questions

1. List three current trends in nursing.

2. What is the difference between soft skills and hard skills in nursing?

3. Why is there an increasing emphasis on higher education requirements for entry into the nursing profession?

4. What is the primary purpose of licensure in nursing?

5. What is the primary advantage of ADN-prepared nurses over LPNs/LVNs?

6. What is the primary purpose of defining the scope of practice for nurses?

7. What are the six QSEN core competencies that align with nursing standards and guide nursing education?

8. Name and define at least three of the key elements that comprise nursing theories.

9. What are the four domains that make up the nursing metaparadigm?

10. Why is Florence Nightingale referred to as the founder of modern nursing?

11. List three carative factors from Jean Watson's theory of human caring.

12. How do theories help to define nursing as a profession?

13. In directing future research, how do nursing theories contribute to the formulation of research questions?

Reflection Questions

1. How has the COVID-19 pandemic influenced the rise of telehealth in nursing?

2. How does continuing education contribute to the professional growth and development of nurses?

3. How do cultural competence and diversity play a role in your responsibilities as a caregiver?

4. How does the QSEN competency of teamwork and collaboration align with the standards of nursing practice?

5. How do concepts, phenomena, definitions, and assumptions collectively contribute to the development of a nursing theory?

6. How can Dorothea Orem's self-care deficit nursing theory be applied to promote patient empowerment in contemporary nursing practice?

What Should the Nurse Do?

1. A patient is expressing emotional distress and requires empathetic support. How should the nurse demonstrate the soft skill of empathy to establish trust and understanding with the patient?
2. A nurse working in a specialized area is considering pursuing specialty certification. What steps should the nurse take to achieve certification?
3. A nurse witnesses a colleague making inappropriate comments about a patient's cultural background. What should the nurse do to uphold standards of professionalism and person-centered care?

In a busy medical-surgical unit, Nurse Rodriguez is assigned to care for Mr. Suarez, a 65-year-old patient admitted with a complex medical history, including diabetes and heart failure. Mr. Suarez has been experiencing difficulty managing his medications at home, leading to frequent hospital admissions. He appears frustrated and overwhelmed.

As Nurse Rodriguez begins her shift, she recognizes the need for a holistic approach to Mr. Suarez's care, considering not only his physical health but also his emotional and social well-being. Applying Dorothea Orem's self-care deficit nursing theory, Nurse Rodriguez assesses Mr. Suarez's ability to engage in self-care and identifies areas where he may need assistance.

During their interactions, Nurse Rodriguez encourages Mr. Suarez to share his challenges and concerns. She involves him in the development of a personalized care plan, emphasizing self-care strategies that align with his capabilities and preferences. Drawing from Orem's theory, Nurse Rodriguez collaborates with the healthcare team to address Mr. Suarez's deficits in self-care, providing education on medication management, diet, and lifestyle modifications.

Throughout the shift, Nurse Rodriguez continuously evaluates Mr. Suarez's response to the care plan, adjusting interventions based on his feedback and observed progress. By the end of the shift, Mr. Suarez expresses gratitude for the personalized approach to his care, and Nurse Rodriguez reflects on how the application of Orem's theory facilitated a person-centered and empowering care experience.

4. Identify and discuss the specific elements of Dorothea Orem's self-care deficit nursing theory that Nurse Rodriguez applied in this scenario.
5. How did the self-care deficit nursing theory guide Nurse Rodriguez's assessment, intervention, and evaluation of Mr. Suarez's care?
6. What aspects of patient empowerment and self-care were evident in her nursing actions?

Competency-Based Assessments

1. Which do you feel is most important in nursing: soft skills or hard skills? Pick a side and debate your position.
2. Research your state board of nursing requirements for RN licensure. Explain the steps involved in obtaining licensure as an RN, including examination requirements and educational criteria, as well as renewing a license.
3. Create an infographic that explains the responsibilities for each of the following nursing roles: caregiver, decision-maker, manager of care, advocate, and educator.
4. Create a five-minute video explaining how Patricia Benner's novice to expert theory can be applied to clinical practice in nursing.

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CHAPTER 2
Communication

FIGURE 2.1 Healthcare providers communicate to provide safe, effective care for patients. (credit: "JACKSONVILLE, Fla. (July 19, 2017) – Cmdr. Julie Conrardy" by Jacob Sippel, Naval Hospital Jacksonville, Public Domain)

CHAPTER OUTLINE

2.1 Types of Communication
2.2 Models of Communication
2.3 Effective Communication
2.4 Therapeutic Communication
2.5 Barriers to Communication

INTRODUCTION Communication was developed thousands of years ago, as people attempted to warn each other about threats and create social communities with nonauditory and auditory methods of communicating. Eventually, communication became making sounds, speaking words, and talking. Communication evolved to pictograms or cave paintings, and finally written word, in the form of hieroglyphics. Methods of communication continue to evolve today, fueled by technological advances. Health care has a similar trajectory, evolving from primitive care to present-day technologies treating and curing diseases. Communication in health care is reliant on both healthcare providers and the patients requiring the care. For example, both the healthcare provider and the patient need to be able to communicate clearly with each other. Healthcare communication was generally unregulated until the 1970s, when the U.S. government decided to moderate communication in health care. In 1975, the Health Communication Division of the International Communication Association was founded, creating a researchable entity of communication and a definition for healthcare communication (Society for Health Communication, 2016). The American Nurses Association (ANA) devotes nine of the Standards of Nursing Practice and Professional Performance entirely to communication, thereby establishing a level of competency for all nurses (ANA, 2015).

Nurses can benefit from understanding the types and models of effective communication to establish therapeutic relationships with patients and encourage health promotion. Communication is foundational in health care and helps patients meet their individual healthcare goals.

2.1 Types of Communication

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Compare and contrast different forms of communication
- Define and describe the four levels of communication

Communication in health care is essential. The act of **communication** involves the sharing of ideas and thoughts among people, and it should be clear, honest, and confidential. For healthcare providers to offer care, they require information from the patient, and effective communication is the best way to obtain that information. Patients should feel comfortable sharing medical information with their healthcare providers, and they must never feel intimidated, fearful, or disrespected. This includes sharing trauma from life experiences, such as rape or previous medical incidents involving themselves or their family members. Healthcare communication also includes helping patients navigate the healthcare system, fill out forms, and make appointments.

Healthcare providers must consider the patient's health and general literacy levels when engaging in communication. The ability of a patient to understand and use information to make health-related decisions is known as **health literacy**. For example, does the patient fully comprehend the benefits and drawbacks of a prescription, or does the patient understand the benefit of a follow-up appointment? When a patient has health literacy, they understand the health information being provided.

Healthcare providers should offer culturally competent care to the patient. Providing **culturally competent care** includes meeting and respecting a patient's social, cultural, and linguistic needs while providing care. For example, to provide culturally competent care for a patient who is deaf, the nurse should include an interpreter who is fluent in American Sign Language, which meets the linguistic needs of the patient. When the healthcare provider does not prioritize culturally competent care, gaps in communication occur, and the health care provided may be deficient. Providing for the patient's needs during communication challenges is paramount to patient-centered, high-quality care.

Healthcare providers need to communicate effectively with other members of the healthcare team while maintaining patient confidentiality. The healthcare team is considered **interdisciplinary**, or relating to more than one branch of knowledge, and interdisciplinary care includes team members from other healthcare professions, such as physical therapists or pharmacists. When multiple healthcare professionals from various disciplines collaborate on patient care, communication breakdowns may result. Inadequate or inappropriate communication can lead to errors, compromising patient care and outcomes.

CULTURAL CONTEXT

Healthcare Interpreters

Healthcare interpreters used in a healthcare setting should not be family members or healthcare staff members. Family members should not be used because they may not be familiar with medical terms, which may lead to incorrect translation. Healthcare staff members should not be used as interpreters because it can be a violation of patient privacy. Nurses should seek out healthcare interpreters who are certified by the National Board of Certification for Medical Interpreters. The legal requirements for medical interpreters (Title VI of the Civil Rights Act) require organizations that receive federal funds, including Medicare, Medicaid, and the Affordable Care Act, to provide a professional medical interpreter (Patient Engagement Hit, 2022). Healthcare facilities should have lists of preapproved medical interpreters for better communication with patients. Some facilities may use electronic means, such as video chat or a telephone, for interpretation (NCBMI, 2016).

Forms of Communication

Communication is the sharing of ideas and thoughts among people and the means of sending or receiving information. Communication requires a sender and a receiver. There are five forms of communication: verbal, nonverbal, written, visual, and electronic (Table 2.1). These forms may be used alone or in combination with another. Communication is better received and understood if more than one form is utilized (Mosaic Projects, n.d.).

For example, when a nurse attends a verbal lecture on the latest medical equipment and has the opportunity to ask questions during the lecture, they are more likely to receive all the intended communication because more than one communication method was utilized: verbal and visual. Combining different forms of communication can make the message clearer for the receiver. To be most effective, nurses should ask the patient their preferred form of communication.

Type of Communication	Example
Verbal	Spoken word
Nonverbal	Facial expressions and gestures
Written	Text messages
Visual	Emojis
Electronic	Electronic health record

TABLE 2.1 Types of Communication

Verbal Communication

The term **verbal communication** can be defined as the production of spoken language to send to a listener. Verbal communication can include aspects of pitch, tone, volume, pace, clarity, pronunciation, and content. The pitch of verbal communication can be affected by the situation. For instance, a person who is communicating with an infant may use a higher pitch when talking so the infant can learn sound patterns to develop speech. The tone of the verbal communication can convey information to the listener. For example, an angry person may have a curt or rude tone, which may change the way the communication is received.

Content is important in verbal communication, especially among healthcare providers. When healthcare providers speak medical jargon to patients, much of the intended communication can be lost. Healthcare providers should carefully consider their words when communicating with patients.

Healthcare providers need to recognize that some patients have specific considerations for communication. For example, the patient may be a non-native speaker of the language the healthcare provider is speaking, making communication difficult. Or a patient could have a clinical condition that affects their ability to communicate verbally, such as a stroke or a cleft palate. In these instances, the healthcare provider should carefully consider their communication techniques and make appropriate accommodations when necessary. It is important for nurses to assess the patient's level of health literacy, any medical condition impacting communication, or other barriers when first providing care.

There are specific standards that healthcare providers must respect when providing communication. The **Health Insurance Portability and Accountability Act (HIPAA)**, a federal law creating the national standards to protect sensitive patient health information from being disclosed, describes the dangers of violating patient privacy with careless or unmonitored communication. The HIPAA laws govern not only verbal communication but also all other forms of communication. Healthcare providers need to be familiar with HIPAA laws so that they can assure the patient's privacy and avoid violating the law. For instance, a patient has the right to specify who has access to their chart, and if it is discovered that this right has been violated by the healthcare provider, the healthcare provider can incur criminal penalty with possible fines or jail time (U.S. Department of Health and Human Services, n.d.).

Nonverbal Communication

The term **nonverbal communication** can be defined as all communication that is not spoken, including facial expressions, posture, eye contact, gestures, and physical touch. When a healthcare provider communicates with a patient, they should make their verbal and nonverbal communication congruent. When noncongruent messages are sent, the receiver is more likely to pay attention to the nonverbal communication than the verbal communication. Head nodding conveys acceptance, and the healthcare provider should use this nonverbal communication when agreeing verbally with the patient.

Eye contact is important for healthcare providers, especially when delivering verbal communication that is unpleasant. If the healthcare provider maintains eye contact throughout the communication, the healthcare provider is more likely to be viewed as respectful and honest (Baugh et al., 2020). Some patient conditions may rely heavily on nonverbal communication. For example, if a patient is blind, using nonverbal communication like touch is appropriate. The healthcare provider should use caution when communicating nonverbally, assessing the patient's situation carefully (Bambaeeroo & Shokrpourm, 2017).

Healthcare providers should be attuned to diverse cultural norms in nonverbal communication. For example, in some cultures, eye contact is considered disrespectful. When providing culturally competent care, the nurse should ask the patient about their cultural beliefs and respect those beliefs. Healthcare providers can use touch to convey encouragement; however, the healthcare provider should respect the patient's boundaries and cultural norms when using touch.

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 1

The nurse is conducting the initial assessment on a 28-year-old patient who presents to the family walk-in clinic. The patient is accompanied by her 10-year-old son.

Past Medical History	Patient is a mother of one, who cares for her child and older mother in a small apartment. The older mother is homebound and is not present at the appointment. The patient engages in housecleaning to financially support her family; however, the income is inconsistent. Patient has an eighth-grade education, is a native Spanish speaker, and does not speak English. Medical history includes seasonal allergies, sinusitis, and two episodes of COVID-19 in the past two years. **Family history:** Patient's father is deceased, and patient's mother has stage II Alzheimer disease. Patient's son is in good health, talkative, and attentive to his mother. **Social history:** Patient is primary caregiver for older mother and son. No other support systems available. Patient has difficulty shopping and making doctor appointments due to lack of care for the mother. Patient has difficulty communicating in English, so the son translates for his mother. **No current medications and no known allergies.**
Nursing Notes	**1630: Triage Assessment** Patient responds to gestures but speaks little English. Son provides translation for his Spanish-speaking mother. Patient reports frequent coughing episodes with production of large amounts of yellow sputum, which are exacerbated with activity. Patient is alert and cooperative, but son reports frequent periods of lethargy, sleepiness, and states "Momma feels hot and sweaty." Patient holds the side of her head in her hands. Son reports patient has been complaining of an earache for three days. Patient intermittently grabs at ear and grimaces.
Flow Chart	**1630: Triage Assessment** Blood pressure: 142/88 mmHg Heart rate: 100 beats/minute Respiratory rate: 24 breaths/minute Temperature: 101.1°F (38.4°C) Oxygen saturation: 95 percent on room air Pain: 8/10 (ear)
Lab Results	CBC: (Abnormal) WBC 17,000 WBCs per microliter (4.5 to 11.0 × 109/L). Rapid strep test: negative Rapid COVID test: negative

1. Recognize cues: Which findings from the information provided are most relevant? Which are the highest priority?
2. Analyze cues: Based on the current history and findings, what additional information should be obtained from the patient at this time?

Written Communication

Any written message, from formal letters to text messages, is considered **written communication**. Written communication may be thought of as the most prevalent form of communication; however, miscommunication can occur with written communication, dependent on the person's learning style and ability to read (Vermeir et al., 2015). To create clear written communication, the healthcare provider should concentrate on providing good structure, clarity, and content. Using paragraphs, punctuation, and line breaks may help the reader better receive the written communication, as reading long paragraphs of text can increase miscommunication. Clarity and content are equally important, as is understanding the patient receiving the message. Written communication can be referred back to by patients for clarification after the encounter with the healthcare provider is over.

Because text messages are not secure, they should not be used for discussing protected health information with other providers. Text messaging is appropriate for providers to communicate with patients if the patient has provided written consent. Utilizing text messaging for patient communication should only be done by following the policies of the healthcare organization. Text messaging can also be used among providers, with secure electronic messaging, using either healthcare facility internal messaging or certain platforms recommended by the healthcare facility as secure, as unsecure communication between providers is more likely to violate HIPAA guidelines.

Visual Communication

In **visual communication**, visual elements are used to create the message for communication. Visual communication includes forms of communication that can be seen, such as charts, photographs, sketches, videos, models, graphs, and emojis. Healthcare providers rely on visual communication as it can help to explain complex concepts of health (Osbourne, 2006; Figure 2.2). When creating visual communication, choose images, fonts, and colors carefully, keeping in mind the audience. If the nurse is creating a visual presentation for patients who have visual challenges, such as a patient who has red-green color deficiency, attention to color, font, and background of the communication should be addressed. For example, a patient with visual challenges may have difficulty reading smaller font or distinguishing between colors for font and background.

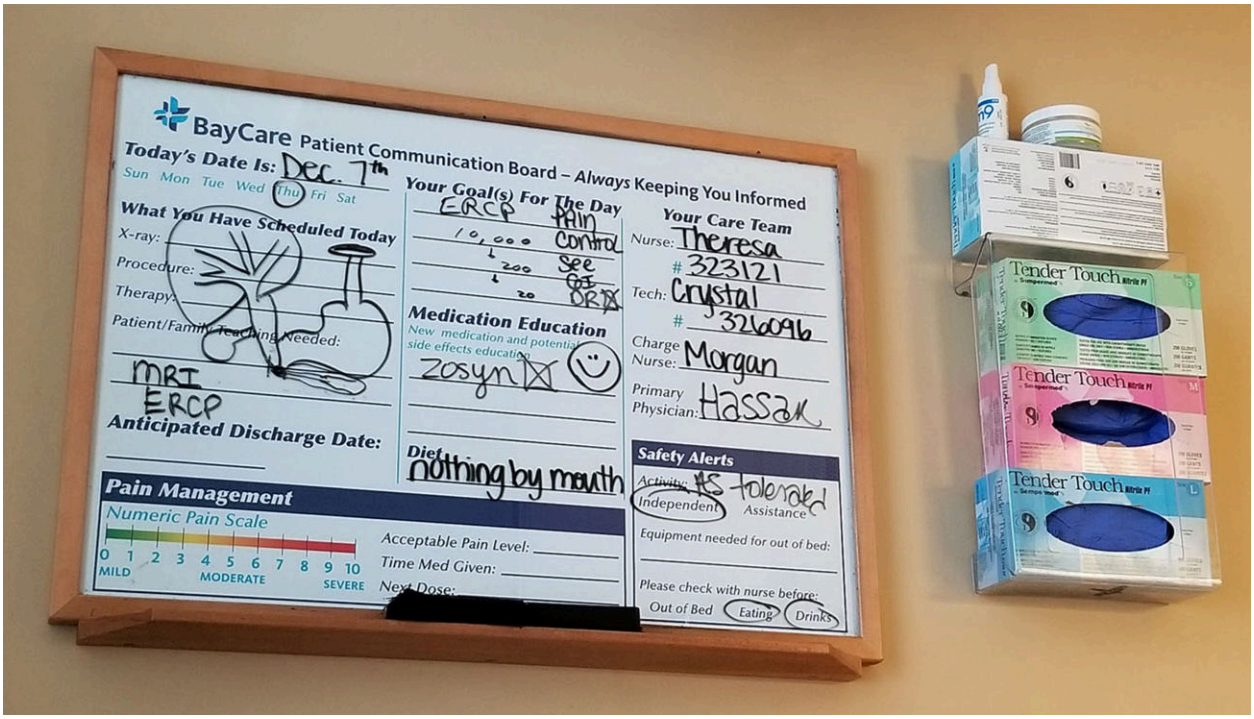

FIGURE 2.2 Healthcare providers use communication boards, like this one shown, in patient rooms to communicate with patients. (credit: "Patient Communication Board" by Michel Curi, Flickr, CC BY 2.0)

Electronic Communication

All communication transmitted electronically is **electronic communication**. Electronic communication can include faxes and text messages that are broadcast, transmitted, stored, or viewed using electronic media like computers or cell phones. Electronic communication is growing in popularity in health care (Yang et al., 2022). Patient portals provide patient access to their own health information. Healthcare providers can readily access most patient records through electronic communication. Electronic communication may help healthcare providers treat patients more effectively, reduce medical errors, and improve patient safety (Rodiewicz et al., 2023). For instance, a healthcare provider could view imaging reports, lab values, or consult with a specialist all in one place to possibly avoid medical error. The **electronic health record (EHR)** and the **electronic medical record (EMR)** are the most common forms of electronic communication between patients and healthcare providers. An EHR is a digital format of a complete medical record of a patient that is able to be shared across multiple healthcare organizations. In contrast, EMRs capture the medical chart within a single healthcare organization and are not transferable to other settings. HIPAA laws govern this electronic information with the HIPAA Security Rule, a national standard to protect a patient's electronic personal health information.

Listening

The ability to thoughtfully receive and interpret messages is called **listening**. The listener should be able to restate someone's words after the speaker has finished. Listening can be active or passive. When someone listens by giving their full attention, listening to understand, and providing thoughtful input, they are **active listening**; when someone listens to simply hear the messages being sent but may not be mentally or emotionally present and does not engage in the communication process, they are **passive listening**. Healthcare providers should use active listening including both verbal and nonverbal communication. Passive listening includes nonverbal communication only, and if the listener speaks, then it is considered active listening.

Healthcare providers must be actively listening as patients are giving them information that helps them treat the patient safely and effectively. Nurses also need to recognize when the patient may not understand the messages received, even though the patient provided nonverbal communication like a head nod that they understood. For example, when the patient is asked to repeat the instructions received, the nurse may find that there are discrepancies. The nurse needs to ensure the listener understands, preventing discrepancies regarding the patient's medical care.

Levels of Communication

There are four levels of communication: intrapersonal, interpersonal, small-group, and public communication. The nurse should consider the levels of communication when providing health care. For example, a healthcare provider does not want to use public communication when providing a patient with their test results, as doing so would violate the patient's right to privacy and HIPAA laws. A healthcare provider must use interpersonal communication when speaking with other healthcare providers on the interdisciplinary healthcare team.

Intrapersonal Communication

Communication with oneself is called **intrapersonal communication**. The practice of reviewing past communication experiences is known as **reflective thinking**, and it plays a crucial role in health care, enabling healthcare providers to adapt and improve their care delivery methods. The practice of reflective thinking in nursing allows the nurse to not only think about communication errors but also reexamine the corresponding actions and lack of communication that occurred. For example, if a nurse makes a medical error when providing the patient with their morning medications, the nurse uses intrapersonal communication to reflect on the incident after it happens, and the chance that the episode would happen again can be decreased.

REAL RN STORIES

Using Reflective Thinking about Medical Errors

Nurse: Shaleena, RN
Clinical setting: Medical-surgical unit
Years in practice: 12
Facility location: A large metropolitan teaching hospital in Illinois

I was working a twelve-hour shift when I was assigned to a premature infant who weighed 7.1 lb (3.2 kg) and was admitted to the newborn intensive care unit eight weeks ago. During morning rounds, the attending healthcare provider reviewed the laboratory work with me and noted the patient's potassium level was low and prescribed potassium to be given intravenously (IV). I received the prepared potassium IV from the pharmacy and prepared to give the patient the potassium IV. The healthcare provider's order stated the potassium should be given over two hours, so I programmed the medication pump for a two-hour delivery. After one hour, I checked the patient and the medication pump and saw that the medication was done infusing. I immediately reported the medical error to the attending healthcare provider. I closely monitored the patient for the next four hours and completed the necessary paperwork as dictated by the healthcare facility for the medical error. Luckily, the patient did not have any adverse effects from the medical error.

At the end of my shift, I engaged in reflective thinking and strategized ways to prevent future medical errors like this one from occurring. I thought about other situations I had witnessed with errors during medication pump infusions. I journaled about the experience, making sure to describe my feelings and thoughts. I realized after reviewing my journal that I still felt uncomfortable with medication administration and the medication pump, so I decided to ask the nurse manager for additional training with the medication pump. The nurse manager was supportive of my efforts to gain more training.

Interpersonal Communication

Communication that occurs between two or more people is called **interpersonal communication**. A healthcare provider uses interpersonal communication to establish a relationship with the patient and to communicate with other healthcare providers on the team to provide safe and effective care for the patient. Interpersonal communication can be used during shift report for continuity of care for the patient (Dahm et al., 2022).

PATIENT CONVERSATIONS

Establishing a Relationship with a Patient and Family

Scenario: A nurse is working in a pediatric healthcare provider's office in a small rural town in Montana, when a

parent presents for a wellness check with a 9-month-old infant.

Nurse: Hello, my name is Evan, and I am going to help the healthcare provider care for your child during this visit. What can I help you with today?

Parent: Hello, we are here today for Leo's 9-month checkup. He has been fine since our last checkup.

Nurse: Has he had any illnesses or problems since his last checkup at 6 months of age?

Parent: No, he has been fine.

Nurse: Which milestones have you observed since his last checkup? Is he babbling words? Is he crawling? How is he eating?

Parent: He is babbling, and it sounds like he is saying "mama," but he does not just say it to me. He is not yet crawling but getting up on his hands and knees and rocking sometimes. I have some questions about his eating.

Nurse: What are your questions about his eating? I would be happy to help answer them, you can ask the healthcare provider as well.

Parent: I would like to ask you, I feel like you listen when I ask questions, thank you.

Nurse: Thank you, now what did you want to ask?

Parent: We are feeding him two times a day. When should we move up to three times a day?

Nurse: You can move to three times a day. Does Leo seem to want to eat with you?

Parent: Yes, he sits at the table with us for breakfast, lunch, and dinner. I feed him at breakfast and lunch, but for dinner we just give him a snack on his tray and a bottle of formula. Should we give him dinner too?

Nurse: It is appropriate at his age to be fed three times a day. After nine months you can also start giving Leo two healthy snacks a day.

Parent: Thank you so much for this information. I really appreciate you.

Nurse: You are welcome. I am willing to answer any questions you have, and if there is anything I have not currently addressed, please feel free to reach out to me again.

Small-Group Communication

When communication occurs among three or more people, it is called **small-group communication**. Small-group communication is a formal process of interacting verbally and nonverbally within a group where individuals perform certain roles. Some examples of small-group communication among healthcare providers could be bedside rounds or a more formal care conference about the patient. Each healthcare provider brings their expertise to add to the care of the patient.

The nurse functions in small-group communication as both a care provider and an advocate for the patient. The nurse as advocate for the patient is one of the many roles a nurse can have on the healthcare team. The nurse uses small-group communication to plan and participate in interdisciplinary conferences, serving as educator, supervisor, and manager. For instance, the nurse, along with other healthcare team members, can provide diabetes education to patients. The nurse can be responsible for patient referrals, ensuring continuity of care, such as referring a newborn and family to home care for additional care. Nurses may perform evaluation of patient outcomes, reporting the findings to the healthcare team. The nurse may collect the data from a research study on the unit they work on, and then present the research to peers and colleagues. All these nursing roles are integral parts of the interdisciplinary healthcare team, and often the nurse is the leader of these examples of small-group communication.

LINK TO LEARNING

The Agency for Healthcare Research and Quality TeamSTEPPS program (https://openstax.org/r/77TeamSTEPPS)

offers additional information about providing safe and effective care for patients by having good small-group communication among healthcare providers.

Public Communication

Communication to any size audience is called **public communication**. Public speaking is a form of public communication in which one or more people speak to a larger group. Public communication does not include communication to an audience when there is an expectation of privacy, like when a healthcare provider speaks with a patient, their four family members, a care manager, and an allied health worker.

Public communication includes verbal and nonverbal feedback. Anyone who has attended a lecture or classroom period has provided verbal and nonverbal feedback to the speaker. Verbal and nonverbal feedback can take many forms, from asking questions and taking notes to not paying attention to the speaker. Nurses provide public communication by hosting community vaccination education sessions, safe sitter or newborn care sessions, or healthy nutrition seminars for the community. Public communication can induce anxiety, yet healthcare providers should recognize that it is inherent in their role, whether during team meetings about a patient or at research conferences.

2.2 Models of Communication

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the process of the transmission model of communication
- Discuss the interactional model of communication
- Summarize the transactional model of communication

Communication can be conveyed in a variety of ways. Transmission, interactional, and transactional models are three of the models that can be used for communication. Communication in health care relies on all three of these models to ensure safe and effective care of patients. Nurses may use the transmission model to speak with patients directly, the interactional model for communication with the healthcare team, and the transactional model for communicating with other providers within a healthcare system. The nurse interchangeably uses the three models of communication depending on the situation with the patient (Table 2.2).

Communication Models	Message	Channel
Transmission	Burden on sender to make sure message was received and understood	Used mostly with verbal communication
Interactional	Allows for feedback between sender and receiver	Can be verbal, nonverbal, written, visual, or electronic
Transactional	Sender and receiver can be sending and receiving simultaneously	Can be verbal, nonverbal, written, visual, and electronic

TABLE 2.2 **Communication Models**

Transmission Model

In the 1940s, the **transmission model** of communication was created as a linear model that describes how communication happens between sender and receiver. Also known as the action model, the transmission model is a one-way process of communication, with up to five elements including the sender, the message, the transmitter or message channel, the receiver, and noise (Figure 2.3).

FIGURE 2.3 In the transmission model of communication, the sender, the channel, the message, the receiver, and noise are in a linear format. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sender

In the transmission model, the **sender** is the person who initiates a message. The sender can use verbal, nonverbal, written, visual, or electronic communication. Verbal communication is used most often (Vermeir et al., 2015). The sender should strive to be clear and concise in their message. The sender should convey credibility and honesty with their message as it may help with the tone, while pitch and content are also important. For example, a sender could be a nurse manager who emails an employee about an important department meeting.

Receiver

The **receiver** is the person who receives the message and interprets it. The receiver can also be called the listener, reader, or observer depending on how the communication is sent. The receiver is the responsible audience who decodes the message from the sender (Nordquist, 2019). The receiver in the previous example would be the employee who received the email about the important department meeting from the nurse manager.

Message Channel

The message channel can be broken into two parts: the message and the channel. The **message** is the information to be conveyed or communicated. The **channel** is the mode in which the communication is sent. In the transmission model, the message channel most commonly used is verbal communication. The burden is placed on the sender to make sure the message sent was received and understood. Either environmental or **semantic noise** can make the interpretation of the message difficult. Semantic noise refers to a type of communication barrier that occurs when the sender and receiver of a message have different understandings of the meanings of words, phrases, symbols, or language in general (Vrana et al., 2018). For example, medical jargon used by healthcare providers is semantic noise that is difficult for patients to interpret.

REAL RN STORIES

Interpreting Information

Nurse: Sudita, RN
Clinical setting: Telemetry unit
Years in practice: 15
Facility location: Philadelphia, Pennsylvania

I was working an eight-hour shift caring for a patient who was admitted with a myocardial infarction and was preparing to be discharged. I was assigned to give discharge instructions to the patient including the heart-healthy diet instructions. I started by asking the patient about their current diet and discussing how to modify their current diet to include healthier eating habits. The patient, however, told me that they ate snowballs and drank whole milk as their daily snack. I was the receiver of the patient's message. Living in the Northeast, I understood a snowball to be a "snow cone," the sugary, fruit-flavored ice ball often served from roadside vendor trucks. And was I ever confused! I understood how to deal with the whole milk issue, but I could only think that a snowball was not the worst thing this heart patient could snack on. I was further confused because I wondered how the patient made these at home. The semantic noise in the message made it hard for me to interpret. Was I to understand from the message that the patient ate snowballs and drank whole milk as a snack during the day, which although did not meet healthy-heart standards could be modified to include skim milk? In the transmission model of communication, I needed to interpret the information received in the best way I could, which did not allow for me to make the best decision about safe and effective care for the patient. After asking the patient several additional questions, I found they were actually referring to the gooey, marshmallow, coconut, and chocolate rounded cakes that are called

snowballs and that they ate them several times a day, washed down with whole milk. Based on the information gathered from the patient, I changed the plan of care and the teaching information.

Interactional Model

The **interactional model** of communication describes communication as a process in which a person alternates as both sender and receiver. Instead of the transmission model (linear, one-way), the interactional communication model allows for feedback, or a two-way process (Figure 2.4). The main difference between the interactional and transmission models is that the interactional model includes feedback in the communication process to allow for better understanding of the messages being sent and received.

FIGURE 2.4 The interactional model of communication shows feedback and changing roles. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sender/Receiver

The sender in the interactional model is also the receiver. The model permits the sender to change roles and become the receiver. The sender and receiver interchange the roles, sending messages rapidly during the communication process. The quick pace and interchanging roles can sometimes lead to miscommunication.

Message Channel

The message channel in the interactional model is similar to the transmission model. The form of communication for the interactional model can be verbal, nonverbal, written, visual, or electronic. Communication in the interactional model can be complex; sometimes messages can be sent and not received. The messages can be affected by the physical and psychological context of the communication. For instance, if the message is sent in a room that is noisy and busy, the intended message may not be completely received, and because the interactional model relies on feedback, when feedback is not present because of noise, the message is lost.

Feedback Channel

The feedback channel distinguishes the interactional model from other communication models. The response given by a receiver to a sender is the **feedback**. Feedback permits clarification of the message sent so that the receiver can better interpret it. The feedback loop allows for senders/receivers to exchange messages simultaneously. This feedback loop can help with clarification of the message sent.

Transactional Model

The **transactional model** of communication is a two-way model of creating communication to develop social relationships and engage with others. The transactional model differs from the interactional model because the sending and receiving of messages happen simultaneously (Figure 2.5). Healthcare providers rely on the transactional model to develop relationships with patients, allowing safe and effective care to occur (Kwame & Petrucka, 2021). The transactional model is the preferred model of communication between healthcare providers and patients because it allows for the sender and receiver to share information.

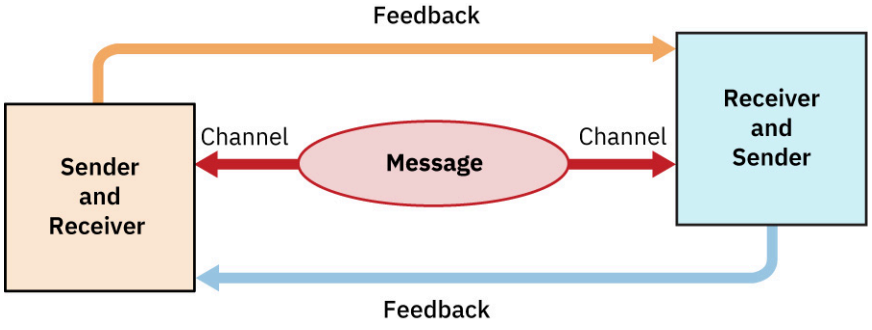

FIGURE 2.5 The transactional model of communication shows simultaneous communication. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sender/Receiver

Like in the interactional model, the sender is also the receiver in the transactional model. The senders/receivers are also called communicators, which allows senders to simultaneously be receivers. The transactional model allows for adaptation of communication within the encounter, changing modes while sending and receiving messages.

Message Channel

The message channel within the transactional model allows for all forms of communication including verbal, nonverbal, written, visual, and electronic. The nurse could be using verbal communication with a patient while observing the patient's nonverbal communication. The nurse might observe the patient's nonverbal communication while listening to the patient's verbal communication, observing for congruence between the modes of communication. The healthcare provider who asks the patient to use a pain rating scale would monitor for visible signs of pain while observing the patient use the pain rating scale.

Feedback Channel

Feedback is present in the transactional model and is influenced by the social, relational, and cultural context of the communication. With feedback, the sender and receiver are influenced by their culture, literacy, social context, and native language when interpreting the message, and possibly shifting the context of the message. Because the transactional model is designed to develop social relationships, nurses should respect the context of the feedback and the message.

PATIENT CONVERSATIONS

Using the Transactional Model of Communication with Patients

Scenario: A nurse is caring for a mother and partner in an obstetric unit of a local hospital. The mother recently delivered a healthy baby who is in the nursery being assessed.

Nurse: [walking into the room] Hello, my name is Tallulah, and I will be your nurse today. Wow, it is really hot in here isn't it? [Nurse walks over to the thermostat in the room.] It is set at 80° in here, I am going to lower it. [Nurse lowers the thermostat to 68°F (20°C).]

Partner: It is nice to meet you [slightly bows]. We are Mr. and Mrs. Chow; we thank you for caring for us today.

Nurse: I need to check your name band, what is your name and date of birth?

Patient: Emily Chow, September 27, 1986.

Nurse: I will do a quick assessment of you and then check on your baby, is that okay?

Patient: Thank you [slightly bows].

[Nurse completes assessment while complaining about the temperature of the room.]

Nurse: I am done, is there anything else I can do for you at this time?

Patient: No, thank you.

Scenario follow-up: Nurse leaves the room, and patient asks partner to return thermostat to 80°F. Patient and partner are of East Asian descent and practice Taoism and *toa (tos)*, with the emphasis on returning heat to the postpartum body to prevent future illness from occurring. Nurse returns to the room after thirty minutes.

Nurse: Oh, my goodness, it is still so hot in here, is the thermostat broken? [Nurse checks the thermostat to see it has been returned to 80°F.] Did either of you touch the thermostat? I cannot give care in this hot room.

Partner: Yes, we returned the thermostat to 80°F once you left, because my wife is practicing the maternal medicine of our culture and would like the room to remain warm.

Nurse: I am sorry, I did not realize it was a part of your culture to have a warm room after delivery. I will be sure to respect your wishes and tell all future caregivers your preferences. Is there anything else I should know about your cultural practices after giving birth? I am so glad you shared this information with me.

Source: Bazzanoe et al., 2020.

Context

When attempting to communicate with a patient through their culture and engage in a social relationship, the use of multiple forms of communication is necessary. The use of faces and objects in the place of words during communication encounters is called **referent communication**. In electronic communication or text messages, the use of referent is seen in the form of emojis or pictures used to describe words like smiley faces or a picture of a chair. Referent communication can be used during texting but may not always be appropriate when speaking with patients. Nurses can use referent communication when checking for pain with a patient who is unable to speak. In this instance, referent communication is helpful in assessing a patient's pain scale as is done when using the Wong-Baker FACES Pain Rating Scale.

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 2

Refer back to Unfolding Case Study #1: Part 1 for a review of the patient data.

Nursing Notes	**1700: Intervention** Patient appears to be in distress from frequent coughing episodes with expectoration of yellow sputum. Patient is tearful and begins to cry. Son attempts to console patient. Interpreter has been called and will arrive when their current patient encounter is complete. Nurse utilizes a picture board to assist with communication with patient. Oxygen at 2 L per nasal cannula applied per orders and warm cloth given to wipe her face. Patient is instructed by nurse to take slow, deep breaths and to sit in an upright position to improve breathing.
Provider's Orders	**1710: New orders** Chest x-ray Close observation

3. Prioritize hypotheses: What factors are present that may make communication with this patient difficult? What are some other ways the nurse could communicate with the patient despite these factors?
4. Generate solutions: How could the nurse use the transactional model as a basis for communicating with this patient?

2.3 Effective Communication

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the importance of effective communication
- Discuss the fundamentals of professional communication
- Identify uses of motivational interviewing

Healthcare providers should be skilled in effective communication in order to provide safe and effective care for patients. Professional communication with other healthcare providers and with patients is a priority for healthcare providers which leads to better, collaborative, high-quality, and safe patient care. Nurses and other healthcare providers use motivational interviewing to elicit information from patients.

Importance of Communication

Nurses need to communicate effectively with patients and other members of the healthcare team. Effective communicators build empathy and trust among patients and the healthcare team. When patients and healthcare providers feel understood and heard, better healthcare outcomes occur, and job satisfaction among healthcare providers improves. Nurses who are good communicators are also self-aware and strive to create better relationships among patients and the healthcare team. Good communication among healthcare providers also

promotes better handling of conflicts.

Elements of Effective Communication

Effective communication is paramount in health care. Healthcare providers need to provide factual, practical, clear, concise, and persuasive communication to patients to deliver safe and effective health care (Table 2.3).

Element	Factual	Practical	Clear and Concise	Persuasive
Example	Your heart has three arteries on the outside of your heart that oxygenate the muscle. These are the arteries that are bypassed during open-heart surgery.	The measles, mumps, and rubella virus vaccine is recommended at 18 months of age following the Centers for Disease Control and Prevention (CDC) schedule. You will want to make sure to schedule a healthcare provider visit for the vaccine if desired.	You will need to take this antibiotic with meals. Take one pill with breakfast, lunch, and dinner.	After surgery, you will need to get out of bed and walk every day so that you recover more quickly. Do you prefer to walk with your cane or a walker when ambulating this evening?

TABLE 2.3 **Examples of the Elements of Effective Communication**

Factual

Healthcare communication must be factual. Health care is based on science, and nursing is an evidence-based practice. Providing patients with communication that is anything other than factual erodes the patient-provider relationship and deems the provider as untrustworthy. Patients deserve factual communication about their bodies. Nurses should refrain from speaking about their own feelings or hopes when interacting with patients as this can lead to confusion and miscommunication. For instance, when a nurse uses factual communication to speak with a post-op patient, the nurse could say that research has proven that patients who attempt to ambulate within twenty-four hours after a surgical procedure are less likely have postoperative complications. The nurse can explain to the patient that they might be in some pain afterward, but the nurse can provide pain medications as needed. If the nurse was to provide nonfactual communication to the same patient, the nurse would tell the patient it is time to get up and ambulate and that ambulating will not hurt.

Practical

Healthcare communication must be practical. A nurse who communicates and does not give practical information can seem untrustworthy. For instance, a post-op surgical patient might be asked if they are ready to ambulate into the hallway when medically appropriate. The patient would be hesitant to trust the nurse, as that is not a practical goal. Instead, the nurse should ask if the patient is ready to try and ambulate around the room. This sharing of practical information builds trust—the patient recognizes the nurse understands their limitations.

Clear and Concise

The nurse should communicate in a clear, concise manner. Effective communication occurs when the nurse clearly thinks through the purpose of the message. The message should be clear so that feedback can be elicited. An example of unclear communication is when the nurse informs the patient that ambulating after surgery is necessary for healing but adds words such as “if you can” or offers other options such as waiting. The nurse could add that they think waiting might be good, as the patient can rest and have a snack, or maybe take a shower. This communication is unclear because the nurse has stated that ambulation after surgery is important but then is allowing the patient the option to not ambulate. If the nurse used clear and concise communication, they would tell the patient that they should try and ambulate today to help reduce post-op complications, right now or in an hour after the pain level has decreased.

Persuasive

Nurses need to know how to be persuasive in their communication. Many times, nurses are required to persuade

patients to change their behaviors. With a postoperative patient who is required to ambulate after surgery, the nurse could give the statistics of reduced postoperative complications if early ambulation is performed, or the nurse might reiterate that they will stay with the patient throughout the process and have pain medications available if they are needed. Nurses should present facts and make recommendations but also listen to the wishes of the patient. If the patient is unsure about taking pain medication, the nurse should explore this ambivalence and use another tool like motivational interviewing (MI).

Essentials of Professional Communication

Professional communication is essential in health care. Communication is part of any successful working relationship, and collaborative, working relationships are integral in health care. Nurses work with people from different professions, class, status, careers, and vocations. To communicate respectfully with different types of people, the nurse should use professional communication (Table 2.4).

Element	Example
Courtesy	Hello, Mr. Lee, I am so glad to meet you. What can I help you with today?
Understanding	Yes, Ms. Awolowo, thank you for sharing your reason for being late to your appointment, we are happy to accommodate you. We will be able to see you soon.
Use of names and titles	Hello, I am your nurse today. Would you please tell me your preferred name, title, and pronoun so that I may refer to you correctly?
Trustworthiness	I will be back in thirty minutes to check on you and your pain level, Mrs. Kuznetsova. Is that okay with you?
Empathy	This must be a hard time for you, Mx. Takahashi. How are you coping?
Assertiveness	I hear what you are saying, Mr. Diaz-Gomez. Would you like me to be present when you speak to your doctor so we can make sure they are addressing your concerns?
Resolution	You were given the wrong medication this morning. I have notified your healthcare provider, and I will be monitoring you closely for the next four hours.

TABLE 2.4 Elements of Professional Communication

Courtesy

Using **courtesy** in healthcare communication is important. Courtesy refers to the practice of being polite, respectful, and considerate when interacting with patients, their families, and colleagues. It involves using polite language and maintaining a friendly and professional demeanor. A nurse should try to always acknowledge their audience, speaking politely. Nurses experience many patients who are not courteous to them; however, the nurse should always be courteous to the patient. Nurses who are courteous in all communication encounters are more likely to deliver safe, effective care for their patients (Sibiya, 2018). Initiation of the nurse-patient relationship depends on the nurse's ability to begin with a pleasant greeting and friendly smile. These actions can build trust and place the patient at ease. By maintaining qualities of politeness and friendliness, the nurse conveys continuous acceptance of the patient and interest in discussing the patient's feelings and concerns.

Understanding

Communication is most effective if all messages received are understood. Patients are more likely to follow directions provided during an educational session if the information is supplied in a way the patient readily understands. If the patient receives the communication in several forms, like verbal, written, and electronic, the patient will likely better understand the message. A patient who does not understand the directions given to them is less likely to obtain positive health outcomes.

Use of Names and Titles

Nurses should respect the professionals that they work with on the healthcare team and use their correct name and title. Nurses should ask patients and healthcare team members to respect their titles and ask that they be used. Nurses should ask patients what they prefer to be called—their name, title, and pronouns; doing so helps establish a positive patient-provider relationship.

Trustworthiness

Nursing is considered the most trusted profession since the 1990s when the Gallup poll of most trusted professions was first conducted (Gaines, 2023). Nurses are considered honest in their words and actions. They are trusted to deliver honest care with compassion, providing education and answering questions with patience.

LINK TO LEARNING

Results of a 2022 Gallup poll about the trustworthiness of the nursing profession (https://openstax.org/r/77nursingpoll) are presented and discussed at the Gallup website.

Empathy

Empathy is a key element of nursing communication, embodying the ability to understand and share the feelings of patients. The term **empathy** can be defined as the ability for one person to understand and share the feelings of another person. A nurse not only reacts in a caring manner, which is considered sympathy, but fully understands the patient, placing value on the patient as a unique individual capable of making decisions. Empathy involves showing genuine concern, using active listening, and responding in a way that acknowledges and validates the patient's emotions. Nursing empathy helps create a trusting and therapeutic nurse-patient relationship, leading to improved patient outcomes and overall satisfaction (Babaii et al., 2021). Empathy goes beyond mere sympathy or a caring demeanor; it is about deeply comprehending the patient's emotional and psychological state. When nurses exhibit empathy, they foster an environment where patients feel heard, valued, and supported, which is vital for delivering safe and effective care. Empathetic care often leads to better adherence to treatment plans and a more positive attitude toward recovery. Patients who feel supported and understood are more likely to actively engage in their care (Bas-Sarmiento et al., 2019).

Assertiveness

Showing confidence in oneself is **assertiveness**. Nurses who are assertive are more likely to build effective communication among healthcare team members. Some facilities provide assertiveness training for nurses, recognizing that nurses who are positively assertive improve patient care (Nakamura et al., 2017). An assertive nurse advocates for patients until their concern is addressed. Assertive nurses are a necessity for patients who are unconscious, nonverbal, or have no advocate at their side as they must speak up as the voice of the patient.

Resolution

Determination of an act is the **resolution**. In health care, resolution often refers to the communication used when addressing adverse events or risk management concerns. Resolution also involves reaching a point where both parties involved in the communication feel satisfied and understood and that their objectives have been achieved. Effective resolution contributes to clear understanding, improved relationships, and the achievement of desired goals. Adverse events and risk management concerns occur when something has gone wrong. An adverse event could be a medication error or the unintentional death of a patient. Resolution includes healthcare providers discussing through clear and structured communication what went wrong and how to prevent adverse events from occurring again. Resolution depends on both parties agreeing on an outcome. When an outcome is agreed upon, effective resolution has usually been obtained.

Motivational Interviewing

Nurses may use **motivational interviewing (MI)**, an evidence-based counseling approach that involves discussing feelings and incentives with the patient. Motivational interviewing can be used as a clinical communication tool to better understand the motivation behind a patient's desire to change their behavior (Droppa & Lee, 2014). Nurses can use MI by expressing empathy about the patient's current point of view. A nurse should help a patient better understand their current practice by highlighting discrepancies between their current behavior and their goal

behavior. The nurse uses MI to understand patient ambivalence, which is part of the change process, but they should encourage patients to reach their goals, supporting self-efficacy. For instance, a patient may understand the importance of postoperative pain medication but be ambivalent about receiving it. Motivational interviewing can help the nurse empathize about the patient's concern while highlighting the importance of pain relief after surgery to help meet postsurgical goals like ambulating.

PATIENT CONVERSATIONS

Using Focusing with Motivational Interviewing

Scenario: The nurse, Robin, walks into the patient's room to complete an assessment, and the patient starts complaining about pain.

Nurse: Hi, my name is Robin, and I am going to be your nurse today. Do you mind verifying your name and date of birth for me?

Patient: Yes, Diane Bock, date of birth 10/12/1940. I am having a lot of pain, like I did last time I was here, and the last time I had a lot of pain, things went wrong, and I had to stay at the hospital longer than I wanted to, and I missed my friends' eightieth birthday party, and she ended up falling after her party and breaking her hip. I don't want that to happen to me, but my knee hurts so bad I feel like I could fall. The doctor said I should start physical therapy to help with my knee pain, but I don't want to, what do you think?

Nurse: You have given me a lot of information, what would be most helpful to discuss first?

Patient: Can we talk about the pain in my knee first?

Nurse: Yes, let me ask some follow-up questions about your pain. Where are you having pain? What is the level of your pain on a scale of 1 to 10 with 10 being the most intense and 1 being the least intense. When did your pain start?

Patient: My knee hurts, it's an 8 on a scale of 1 to 10, and it started about one hour ago, I just did not want to bother you.

Nurse: You are not bothering me, and I am sorry you are in pain. I can check to see when your next pain medication is due and get that for you. Is it okay if I leave and come back with your pain medication and then we can discuss what you think is most important next?

Patient: Yes, please check on my pain medication. I think I had some last night.

Scenario follow-up: The nurse returns to the room with pain medication for the patient.

Nurse: You can have the pain medication now. Here it is.

Patient: Thank you for the pain medication. I hope it works soon. I do not want to be in the hospital again and go home and have no answers about my knee pain.

Nurse: Would you like to talk to me more about the comment you made earlier about your friend? It seems like you are worried about being in the hospital.

Patient: Yes, I am worried about having to stay in the hospital again, I really don't like the hospital.

Nurse: I can understand why you do not like the hospital, but it is a good place for you to be in to figure out what is wrong with your knee. Do you think you will be okay to stay until the healthcare providers have run all the necessary tests?

Patient: Yes, I will try to stay until I have an answer about why my knee hurts.

When assessing a motivational problem, always consider the patient's cultural values, their general and health literacy, and their psychosocial needs. Motivational interviewing should support the patient's sense of self-confidence. It includes using engaging communication and open-ended questions, helping the patient focus, while evoking the patient to think about change and planning how the patient will accomplish the change. An example of

MI is a nurse equating the patient's love of caring for their grandchild as a reason to slowly add healthy food and exercise to their daily life to improve their health.

Effective MI should include the following processes:

- Engaging: By engaging in communication with a patient, the healthcare provider establishes a relationship with the patient. To **engage** in communication, the healthcare provider should use active listening, use nonverbal communication, and ask for feedback when necessary.
- Focusing: Focusing is finding a clear direction and a goal. Nurses need to help provide focus with communication and MI. Nurses need to help the patient choose goals for change. Nurses use focusing techniques to help the patient define and refine those goals.
- Evoking: Evoking is the part of the MI process that helps the patient make the change. The nurse encourages the patient to speak in terms of change but understands the patient may be ambivalent for that change. The nurse should use the patient's natural motivation to invoke the change.
- Planning: The patient needs to plan for the future with their new goal for change. During the planning phase of MI, the goals should be small and achievable. Small victories increase patients' motivation. The nurse should discuss with the patient the development of **SMART goal**, an acronym for goals that are specific, measurable, attainable, relevant, and timely (Figure 2.6). Developing goals with the patient during MI increases the probability that the patient will change the behavior.

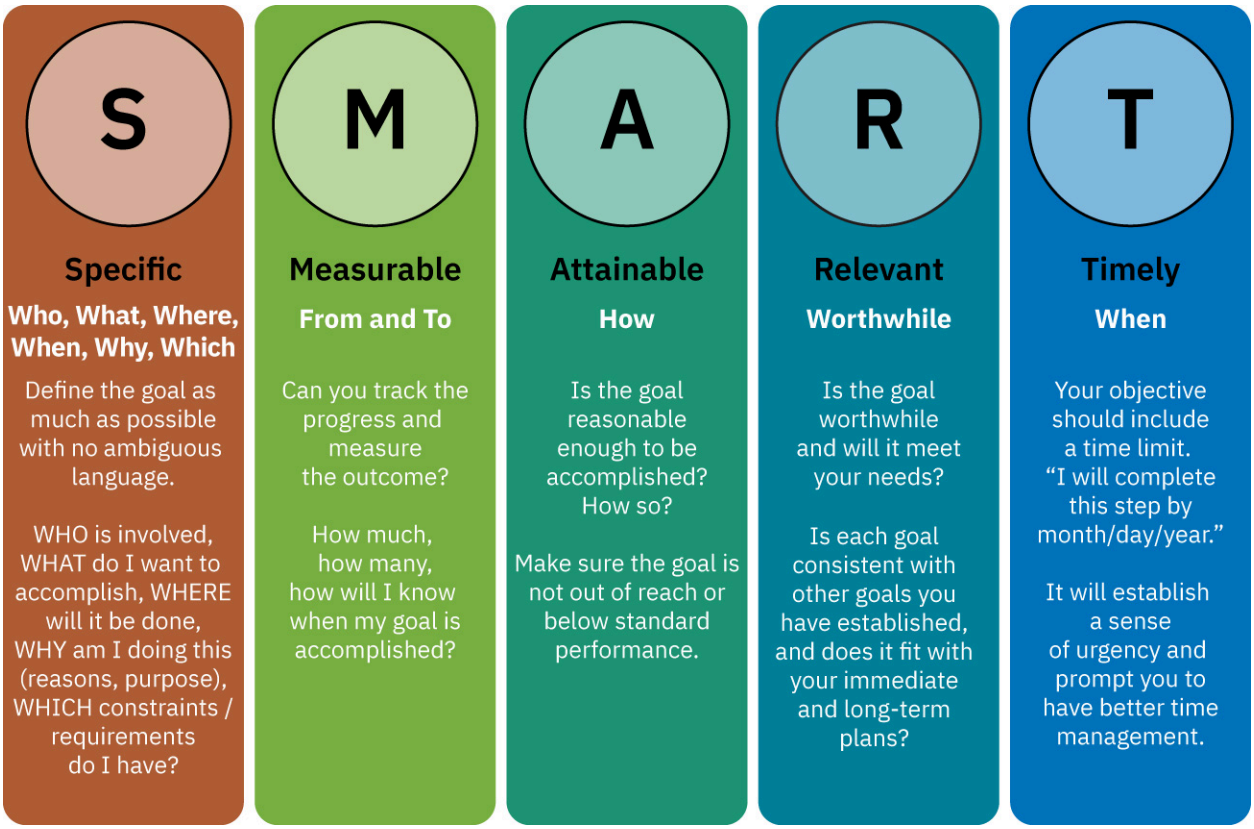

FIGURE 2.6 SMART goals can be used with patients during MI. (credit: modification of work by Joint Base Charleston, Public Domain)

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Using Motivational Interviewing to Counsel Patients to Increase Self-Care

When taking actions, nurses can use MI to counsel patients to increase self-care. For example, if a patient has experienced a myocardial infarction or heart attack, the nurse recognizes that they should teach the patient about decreasing saturated fat in their diet. Telling the patient how to decrease saturated fat in their diet is not the best way to motivate the patient. The nurse may ask questions like, "You want to decrease saturated fat in

your diet, what is your understanding of the complications of eating a high-fat diet?" Or "What will it look like in five years for you if you do not lower your saturated fat intake?" Or "What would you gain by cutting back on your saturated fat intake?" The patient's responses provide detailed information that helps the nurse set goals with the patient to lower the patient's intake of saturated fat. Nurses can use the acronym OARS to help patients develop goals to increase self-care (Figure 2.7) (Schultz, 2021).

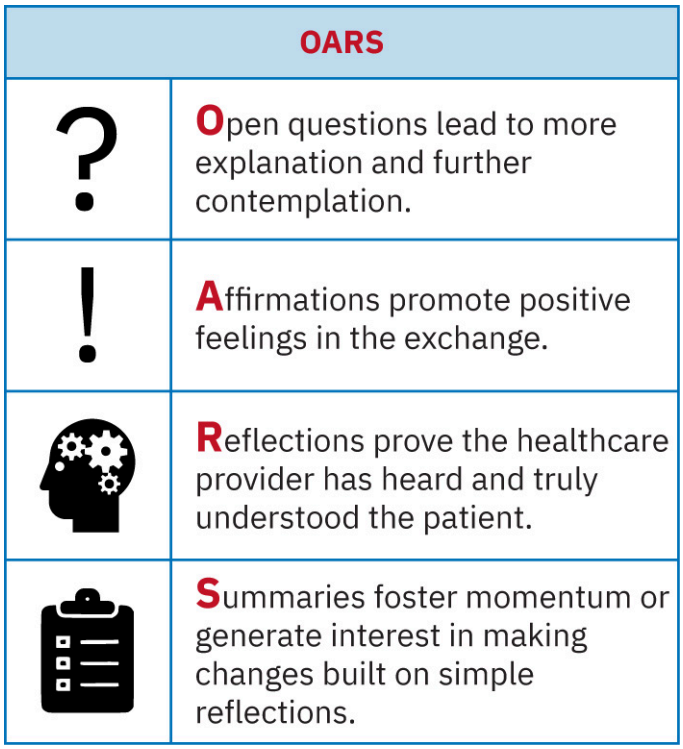

FIGURE 2.7 The acronym OARS can help nurses to remember steps to take when employing MI with patients. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

2.4 Therapeutic Communication

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe therapeutic communication techniques
- Recognize how to evaluate therapeutic communication
- Identify nontherapeutic communication techniques

The most used form of communication in health care is **therapeutic communication**, a specialized form of communication used by healthcare professionals, such as nurses, doctors, and therapists, to establish a therapeutic or healing relationship with patients (Martin & Chanda, 2016). Florence Nightingale discussed the importance of communication between patient and nurse in the 1800s. In the 1950s, the concept of therapeutic communication was developed to provide therapeutic benefit, especially with patients who were diagnosed with mental illness. The nursing theorist Hildegard Peplau developed the Theory of Interpersonal Relations that cemented the concept of therapeutic communication to advance the healing process in patients. Therapeutic communication has progressed to include verbal and nonverbal communication, helping patients overcome illnesses of the body and mind. Nurses should use therapeutic communication in all communication encounters with patients (Martin & Chanda, 2016).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Definition: Recognize the patient or designee as the source of information and a full partner in providing

compassionate and coordinated care based on respect for patient's preferences, values, and needs.

Skill: The nurse will do the following:

- Discuss principles of effective communication.
- Describe basic principles of consensus building and conflict resolution.
- Examine nursing roles in assuring coordination, integration, and continuity of care.

If the nurse and other members of the healthcare team do not provide therapeutic communication, the expected outcomes for the patient could be impacted negatively. If there is conflict between the patient and the healthcare team, negative health outcomes could occur.

Knowledge: The nurse must have an understanding of the key therapeutic communication delivery techniques so that they can use the most appropriate approach for the specific patient or designee and are able to evaluate its effectiveness.

Attitude: The nurse should engage in active listening, indicating an understanding of what the patient or designee is saying.

Therapeutic Communication Techniques

Therapeutic communication allows patients to express themselves. There are various therapeutic communication techniques in health care. Nurses should be very familiar with these different techniques, using them with each patient communication encounter. These techniques include providing information; sharing observations, feelings, empathy, hope, and humor; using touch and silence; focusing and clarifying; asking relevant questions; **offering self**, which is contributing support by being present or spending time with a patient; and active listening (Table 2.5). Using all these techniques as the situation warrants helps the nurse provide safe and effective care for the patient. The nurse should recognize that the use of open-ended questions supports therapeutic communication.

Technique	Definition	Example
Providing information	Nurses are responsible for educating and informing patients and families. Patient education should be ongoing, with nurses using every encounter as an opportunity to educate.	As the nurse dispenses the morning medications, the nurse educates the patient about each medication, encouraging the patient to ask questions.
Sharing observations	Nurses should share their observations about the patient while providing care. Being mindful about the patient's appearance and mood can give the nurse clues about the patient's health.	The nurse states: I noticed you are crying; would you like to share with me what is making you sad?
Sharing feelings	Patients should be encouraged to share their feelings. Because patients are often frustrated with health care, nurses can create safe spaces where the patient feels comfortable sharing their feelings.	A nurse asks a patient to describe what they are feeling after the patient is given a particular diagnosis.
Sharing empathy	A nurse who expresses empathy may tell the patient that they hear and understand what the patient is saying, which helps the patient feel they are being cared for.	A nurse asks a patient about their cultural beliefs surrounding pregnancy.

TABLE 2.5 **Therapeutic Communication Techniques**

Technique	Definition	Example
Sharing hope	Nurses should be ready to share a sense of possibility for the patient, even when the news is bad. Sharing hope through active listening might be included for the patient who has just received a terminal diagnosis; however, information dispensed must remain factual.	A nurse should be present with the parent who has received bad news about their child, giving the parent time to talk.
Sharing humor	The nurse can use patient-driven humor as a gauge for deciding when and if to use humor with the patient. Recognize that there are many circumstances in which humor may not be appropriate as a therapeutic technique.	The nurse listens when a family member shares a funny story about the patient and then shares a related story.
Using touch	A nurse's touch may be the only positive or healing touch the patient receives. However, a patient who is receiving many treatments may regard some touch as negative. An episode of handholding with the nurse after procedures can uplift their spirits. Some patients find touch to be unsettling, so the nurse must ask the patient before engaging.	The nurse asks the parent if it is okay to touch their infant before assessing them.
Using silence	Allowing a patient the time to think and process is important. Nurses should respectfully let the patient break the silence.	The nurse is quiet while the patient shares their rape experience from college.
Clarifying	Nurses should clarify communication received from patients. Often, patients use confusing and ambiguous communication when describing health issues. Nurses ask questions to help clarify the communication so that both parties better understand the issues.	The patient has described stomach pain. The nurse asks several follow-up questions about location, intensity, quality, radiation, onset, character, and exacerbating and relieving factors.
Asking relevant questions	Nurses should ask relevant questions about the healthcare issue before helping the patient make a decision about their care. The nurse uses the relevant question technique to gather information, while not overwhelming the patient with questions.	The patient discusses with the nurse their previous hospital experience. The nurse asks about the length of stay, the admitting diagnosis, and the outcome of treatment.

TABLE 2.5 **Therapeutic Communication Techniques**

Technique	Definition	Example
Offering self	Patients in any setting can be lonely, scared, and stressed. A nurse who offers themselves by sitting with the patient or spending time talking with the patient is offering self. Some patients report a boost in mood once a nurse has spent one-on-one time with them.	The nurse comforts the child when asked, before and during a vaccination.
Actively listening	Active listening includes using both verbal and nonverbal cues to convey interest in the patient's communication. Simply saying "Go on" gives patients courage to continue a discussion of health issues.	The patient describes a previous medication reaction and the nurse clarifies some of the information the patient presents, encouraging the patient to share all aspects of their experience.

TABLE 2.5 Therapeutic Communication Techniques

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 3

Refer back to Unfolding Case Study #1: Part 1 and Unfolding Case Study #1: Part 2 for a review of the patient data.

Nursing Notes	**1700: Assessment** **Physical examination:** Patient appears disheveled with clothes inappropriate for the cold weather, including short-sleeve shirt and shorts. While waiting for the interpreter, patient appears agitated with frequent coughing episodes. Begins to pace the room as son attempts to console her. **HEENT:** Pupils equal, reactive to light and accommodating, mucous membranes moist and intact, pharynx without lesions, palate intact. No thyroid enlargement noted. **Lymphatic:** Tonsillar and cervical lymph nodes slightly enlarged. Hard, palpable left axillary lymph nodes, tender to touch. No enlargement of right axillary or inguinal nodes, no pain or tenderness noted. **Respiratory:** Rales and rhonchi auscultated bilaterally. No stridor or murmur present. **Cardiovascular:** Sinus tachycardia on monitor, no edema, peripheral pulses 2+. **Abdomen:** Bowel sounds present in all four quadrants, no tenderness present. **Musculoskeletal:** Full range of motion, no issues noted. **Skin:** Pale and dry, no bruising. **Mental assessment:** Patient reports (per son) that she is stressed from coughing and anxious about her mother left alone at home. Patient requests the nurse "hurry and give me some medicine so I can go home." Interpreter arrived to room at 2030.
Flow Chart	**2000: Assessment** Blood pressure: 148/87 mmHg Heart rate: 110 beats/minute Respiratory rate: 26 breaths/minute Temperature: 102.2°F (39°C) Oxygen saturation: 97 percent on 2 L nasal cannula Pain: 8/10 (ear)
Provider's Orders	**2030: New orders** Sputum sample Wean from oxygen before discharge home Medications: • Acetaminophen 1,000 mg PO Q6 hours PRN fever • Amoxicillin 500 mg PO twice daily for ten days

5. Take action: How would the nurse use therapeutic communication to address the patient's concerns?
6. Evaluate outcomes: After providing information to the patient about the newly prescribed medications, how would the nurse evaluate the patient's understanding?

Evaluating the Effectiveness of Therapeutic Communication

Nurses should be adept at evaluating the effectiveness of therapeutic communication. Communication should go two ways, using the feedback loop, as feedback ensures the therapeutic communication has been effective. Nurses rely on the feedback loop to make this evaluation. If the communication has not been effective, the nurse should revise their approach, making sure they are providing effective communication for the patient.

Reflect on the Response

Nurses who use reflection on the response during therapeutic communication should restate what the patient has said. This allows the patient to hear their own words and encourages them to continue to communicate. Reflection helps the patient understand that the nurse is actively listening to them, further establishing the nurse-patient relationship.

Compare Response to the Desired Goals

After the nurse reflects on the patient's response, they should compare the response to the desired goals of the communication. The nurse should consider various factors at play during communication. It is crucial to compare the patient's response to the desired goal. If they align, it confirms effective therapeutic communication.

Revise Message if Communication Is Ineffective

If the nurse determines the therapeutic communication was not effective, revision of the message is needed. The nurse needs to revise the message and employ the feedback loop to again check if the intended message has been received. For instance, if a nurse was teaching a patient about their surgical care, the nurse would use a feedback loop to make sure the patient understood the instructions. If the patient is not able to repeat the instructions, the nurse should revise the message until the patient can repeat the instructions.

PATIENT CONVERSATIONS

A Therapeutic Conversation with a Patient

Scenario: Linda has been a nurse in New Orleans, Louisiana, for four years. Her patient is Mr. Michael Boudreaux, a 62-year-old Army veteran who has lived in Louisiana his whole life. The nurse walks into the patient's room to complete an assessment.

Nurse: Hi, my name is Linda, and I am going to be your nurse today. Do you mind verifying your name and date of birth for me?

Patient: Michael Boudreaux, date of birth 01/26/1961.

Nurse: Hi, Mr. Boudreaux, I would like to do an assessment of you, if that is okay?

Patient: Of course, I am just sitting here, worried about what is happening to me.

Nurse: Would you like to discuss with me some of the things that you are worried about?

Patient: Sure, I am worried that I have something really bad wrong with me and no one is telling me.

Nurse: Let me clarify, you feel like no one is talking to you and that makes you think that there is something bad happening?

Patient: Yes, do you know anything about my test results?

Nurse: None of the results are available at this time, but that doesn't help you, does it? Would you like me to have the healthcare provider speak to you and explain why they are doing certain tests and what they might be looking for?

Patient: Yes, that would be helpful, and maybe make me less anxious. Thank you.

Nurse: You are very welcome, please don't hesitate to ask me any other questions. I am here to help you feel better. I'll need to touch you to do my assessment. Is that okay?

Nontherapeutic Communication Techniques

Unfortunately, **nontherapeutic communication** can also occur between the patient and nurse. Nontherapeutic communication can be defined as negative expressions, attitudes, and actions that make a patient feel uneasy. Both the patient and the nurse are subjected to many influences that can muddle communication. Nurses should try to avoid nontherapeutic communication and strive to revise the communication if nontherapeutic communication has occurred.

LINK TO LEARNING

Learn more about therapeutic and nontherapeutic communication techniques (https://openstax.org/r/

77commtechniques) in this video.

Nontherapeutic communication can lead to miscommunication between the nurse and patient, and among healthcare providers, ultimately affecting the care the patient receives (Amoah et al., 2019). Nontherapeutic communication techniques include attacking and interrogating patients; changing the subject; giving automatic responses that are not helpful; giving **false reassurance**, which is comfort that is not based in facts, and advice; providing passive, aggressive, judgmental, or defensive responses; and arguing with the patient. Another nontherapeutic communication technique is not listening to the patient or not being actively present when with a patient, like scrolling on a phone during a patient encounter. All these nontherapeutic responses can negatively affect the nurse-patient relationship (Table 2.6).

Techniques	Definition	Examples
Attacking	Verbal attacking is meant to criticize, dominate, or manipulate the patient. Attacking a patient will likely cause the patient to shut down and stop communicating or elicit an anger defense. Nurses must avoid verbally attacking patients. If the patient's perception is that the nurse attacked them, the nurse should apologize and try to reestablish therapeutic communication.	The nurse tells the patient, "You came in here drunk and started hitting people."
Interrogating	Interrogation of a patient is often described as asking "why" questions. When "why" questions are asked, the patient can become defensive or uncomfortable and stop communicating altogether. The nurse should avoid asking "why" questions, rephrasing questions to prevent the patient from becoming defensive.	The nurse asks the patient, "Why did you not take the medication like I instructed you to do?"
Changing the subject	When a nurse changes the subject while a patient is talking, the patient perceives that their communication is not important. Sometimes nurses rush patients through a communication encounter and can change the subject to meet the nurse's goals for the encounter. The patient may see this as a form of disrespect or a way to silence them. The nurse needs to recognize factors influencing their own communication and allow the patient to speak uninterrupted to establish a positive nurse-patient relationship.	The patient tells the nurse about their chest pain, and the nurse asks, "What kind of insurance do you have?"
Automatic response	Automatic responses are ready-made sayings or statements that are used without any thought to the patient as an individual. Nurses should avoid these types of statements when communicating with patients because they can be interpreted as generalizations or stereotypes. Phrases like "I am sorry for your loss" seem automatic. Patients who receive automatic responses from the nurse may refrain from communicating at all.	The nurse tells the patient several times in the day that they will be right back and each time does not return to the room unless the patient specifically calls them.

TABLE 2.6 **Nontherapeutic Communication Techniques**

Techniques	Definition	Examples
False reassurance	Giving false reassurance that everything will be all right may do more harm than good. The nurse should allow the patient to voice their fears and concerns and then offer hope without devaluing the patient's feelings.	The nurse tells the patient the medication they are given for nausea during chemotherapy will make all the nausea go away, and the patient will feel much better in a few minutes.
Giving advice	Nurses should not give advice when communicating with patients. Patients often ask for the nurse's opinion, and the nurse should try to communicate therapeutically by giving factual information without personal experience and advice. Giving advice can prevent the patient from developing their own healthcare goals.	The nurse states, "You know, if it were me, I would not go to that healthcare provider."
Defensive responses	Nurses should refrain from being defensive in all communication with patients. Patients sometimes express criticism about their health care, and nurses should not respond defensively. Nurses need to actively listen to the criticism as there is often a deeper meaning that the patient is attempting to convey.	The nurse states, "I didn't do anything" when the patient states that the nurse took their belongings.
Passive or aggressive responses	Passive or aggressive responses should be avoided, if possible. Passive responses are those that try to avoid conflict or circumvent issues. Aggressive responses are responses that are meant to provoke confrontation. When the nurse attempts to avoid conflict or is angry with the patient, they should not let the patient know. Nurses should use assertive communication when they are tempted to use the passive or aggressive responses that can damage the nurse-patient relationship.	The patient soils themselves for the third time in the shift, and the nurse has to change the sacral dressing. The patient apologizes profusely to the nurse, and the nurse responds "yeah, yeah I know."
Judgmental responses	Nurses should not make value judgments about the patients' healthcare decision. Making judgments that the patient has done something right or wrong implies the nurse is the only person who has the ability to make those decisions. In a positive nurse-patient relationship, the nurse should not be seen as superior to the patient.	The nurse tells the patient, "You know the reason you have lung cancer is because you smoked for forty years."
Arguing	Arguing with patients must be avoided at all costs. Arguing or challenging a patient implies that the nurse thinks the patient is lying or misinformed, damaging the nurse-patient relationship. Arguing usually prevents the patient from trusting the nurse.	The nurse argues with patient about their diet, the patient raises their voice, and the nurse does too.

TABLE 2.6 Nontherapeutic Communication Techniques

REAL RN STORIES

An Argument Averted

Nurse: Louisa, BSN
Clinical setting: Catheter Laboratory Recovery Unit (CLRU)
Years in practice: 1.5 in CLRU
Facility location: Santa Rosa, California

My patient, a 74-year-old male named Lenny, was a Vietnam War veteran who was also held as a prisoner of war for two years before being freed. He had a femoral access right leg angiogram. He was scheduled to recover in the unit for six hours. After the six hours had expired, according to the unit policy, the patient was to be driven home by a responsible adult because the patient had received conscious sedation. I informed the patient of the policy, and then he quickly became angry saying that he would be getting a taxi home and would not be released to a responsible adult. I clarified the patient's response, explaining to the patient if he was unable to be released to a responsible adult, he would need to be admitted and released the next day. He became enraged and tried to get out of bed, swinging his fists at me, as he screamed that he was going home and did not need to be babysat like a child. Another nurse who worked on the unit called the nurse manager to the patient's room because they heard the patient's screaming. After much deliberation between the patient, the nurse manager, and me, the patient agreed to stay another four hours, to be released to themselves.

2.5 Barriers to Communication

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze different types of communication barriers
- Recognize how emotional intelligence can overcome communication barriers
- Describe the nurse's role in overcoming communication barriers

Communication barriers are anything that prevent the message sent from being received or understood (Kunsman, 2022). Communication barriers can impact the health care that is delivered and produce negative outcomes. Miscommunication can cause breakdowns in the healthcare team and the nurse-patient relationship and can affect entire healthcare facilities, costing money and time. Nurses need to prevent miscommunication from occurring by recognizing common communication barriers and preventing them from occurring in the first place.

Types of Communication Barriers

There are many types of communication barriers. The nurse should analyze all of the possible communication barriers and develop or use strategies to overcome those challenges. Nurses who use effective strategies to overcome communication barriers can engage in effective communication with their patients and families promoting safe, effective healthcare.

Physical Barriers

A **physical barrier** is one of the biggest challenges to communication. Physical barriers include noise, architecture, environment, time, or distance (Table 2.7). Each of these physical barriers can cause difficulties with communication, and if more than one is present, communication breakdown can occur. Physical barriers with communication can also be language and hearing barriers. When these physical barriers are present, healthcare providers should use medical interpreters to overcome them (Figure 2.8).

Physical Barriers	Definition	Example
Environment	The environment can prevent a message from being delivered clearly, and it is not always controllable. To prevent the environment from creating communication barriers, nurses should establish and practice emergency action plans for natural disasters.	A hurricane occurs and floods the first floor of the hospital. Patients are moved throughout the hospital in response.
Stimuli/noise	Noise is present in every setting. Nurses should strive to reduce extraneous noise for their patients, like attending to alarms on machines that are being used to care for the patient or closing a door to decrease noise in a patient's room. Nurses can use written communication if they are unable to decrease the noise to overcome the communication barrier. Other stimuli, such as cell phones and televisions, also can prevent messages from being received.	The healthcare clinic is under construction, and there is the sound of drilling and sawing throughout the day as nurses take care of patients.
Space configuration	Healthcare providers need to have common areas for patient care along with private areas. Respect for a patient's confidentiality demands certain designs for facilities. Nurses should be aware of the architecture when delivering sensitive information to patients, and change venue as warranted.	The clinic rooms have thin walls, and voices can be heard between the rooms.
Time	Health care is a time-relative profession, and nurses should always try to respect the timeliness of communication. Nurses may not be able to check all orders immediately; however, the nurse should recognize the timeliness of their response can overcome the communication barrier.	The nurse interrupts the patient to explain they have to return and will be right back, but the nurse does not return for two hours.
Distance	Distance is the physical area separating a patient from a healthcare provider, and it can include the patient being in a remote area without healthcare access. Sometimes technology can overcome a distance barrier, but that implies that the patient has access to technology. Telehealth, the delivery of health care remotely with telecommunication, can be used to bridge the distance.	The nurse on a remote island in Hawaii uses telehealth to connect to the university hospital on the mainland for a patient who has uncommon symptoms of a disease.

TABLE 2.7 Physical Barriers

Physical Barriers	Definition	Example
Technical difficulties	Technical difficulties are any unplanned or unexpected equipment problems. Nurses can help overcome technical difficulties by performing maintenance of communication and presentation tools, testing performance before use, troubleshooting difficulties with other peers, and utilizing information technology support staff.	The nurse works with information technology to fix a problem with the lectern during an education session for patients about heart disease and diet.
Volume of information	Information overload can occur easily, and each person's threshold for information will be different. The healthcare provider or the patient can stop listening or tune out the information. Health care is an information-based industry, and when the volume of information has reached maximum capacity, healthcare outcomes are negatively impacted.	A patient at the clinic has researched their diagnosis, inguinal hernia, on the internet and is expressing concern about surgery based on the information they read.

TABLE 2.7 **Physical Barriers**

(a) **(b)**

FIGURE 2.8 (a) Physical communication barriers include many facets. Concert noise and the venue itself may interfere with conversation. (b) Nurses combat distance barriers using telehealth at satellite facilities. (credit a: "Between acts" by Rebecca Siegel/Flickr, CC BY 2.0; credit b: U.S. Department of Agriculture, Flickr, Public Domain)

PATIENT CONVERSATIONS

Getting a Patient Ready for Open-Heart Surgery

Scenario: A patient is scheduled for coronary artery bypass graft surgery in three days, and the presurgical nurse calls the patient on their mobile phone to discuss the upcoming surgery.

Nurse: Hello, Mr. Stanley, my name is Laura, and I am the presurgical nurse to check on you before your open-heart surgery.

Patient: Please call me Tom.

Nurse: Okay, Tom, how are you doing?

Patient: Well . . . not well considering I am having open-heart surgery, but I feel okay right now.

Nurse: Can I verify your name and date of birth before we continue this conversation, please?

Patient: Yes, Tom Stanley, DOB 4/30/1942.

Nurse: Thank you, so I am hearing you feel all right right now. Have you been feeling bad in the last couple of days?

Patient: No, I have been feeling all right physically for a couple of weeks, but I am overwhelmed about all of the preparation for this surgery.

Nurse: I am sorry you are feeling overwhelmed. What can I do to help?

Patient: So many people are contacting me—the healthcare provider's office, the nurse practitioner for the surgeon, the laboratory, and radiology. I cannot answer them all back, I have stopped trying.

Nurse: I am hearing that you are finding it hard to navigate through the appointments required for the open-heart surgery, is that right? I have some suggestions to help you.

Patient: I would love to hear them.

Nurse: I can contact the laboratory and radiology for you and make you an appointment at a time you find acceptable, would that help?

Patient: Yes, that would be a great start, thank you.

Nurse: Then we can make a list together of priorities for the rest of the calls you need to make. Do you think that would be helpful?

Patient: Yes, thank you so much, Laura. I already feel better.

Emotional Barriers

Emotional barriers can also hinder communication. An **emotional barrier** is a mental limitation or block that influences how others' actions are perceived. All people process things differently, attaching emotions to the processes. In health care, the additional emotions of fear, pride, anger, and anxiety cause disruption in the communication process (Table 2.8). Nurses should attempt to mitigate emotional barriers to communication when possible, as often these kinds of barriers can cause the most miscommunication.

Emotional Barriers	Definition	Examples
Fear	Fear occurs when a patient feels frightened or intimidated by the facility, procedure, personnel, or consequences. When patients are afraid, they are less likely to seek out help or information.	The patient states they did not hear what the nurse said because they are worried about the upcoming antibiotic injection they will receive, as they are afraid of injections.
Pride	Pride is a feeling of great satisfaction in oneself or one's own achievements. Patients who are proud may delay seeking out health care because they might be perceived as weak. Healthcare providers can also disrupt communication with feelings of pride. Healthcare providers may not ask for help because they want to appear competent. In many situations, help is necessary, and not seeking help can cause detrimental healthcare outcomes.	A patient falls when getting out of bed after insisting they did not need help.

TABLE 2.8 **Emotional Barriers**

Emotional Barriers	Definition	Examples
Anger	Anger is a strong feeling of annoyance, antagonism, or displeasure. Patients who are angry at either healthcare providers or healthcare processes are less likely to accept and interpret communication appropriately. Nurses should try to deescalate anger when it is present in communication.	A family member yells at a healthcare provider, upset about continuity of care for their significant other.
Anxiety	Patients in any healthcare setting often experience some form of anxiety. Anxiety is a feeling of unease, trepidation, or uncertainty. Patients who are anxious are less likely to hear and correctly interpret an entire message, hearing only parts of the message. Healthcare providers can also experience anxiety and may change the way they send the message to the patient.	The nurse prepares the patient for surgery, the patient is visibly upset and shaking their head, stating they cannot understand anything.

TABLE 2.8 Emotional Barriers

Emotional Intelligence

Sometimes referred to as emotional quotient, **emotional intelligence (EI)** is the capacity to control and express emotions. Emotional intelligence can be used to improve communication as healthcare providers who are emotionally intelligent are more likely to handle interpersonal relationships empathetically (Meng & Qi, 2018). Emotional intelligence includes self-management, self-awareness, social awareness, and social management (Figure 2.9).

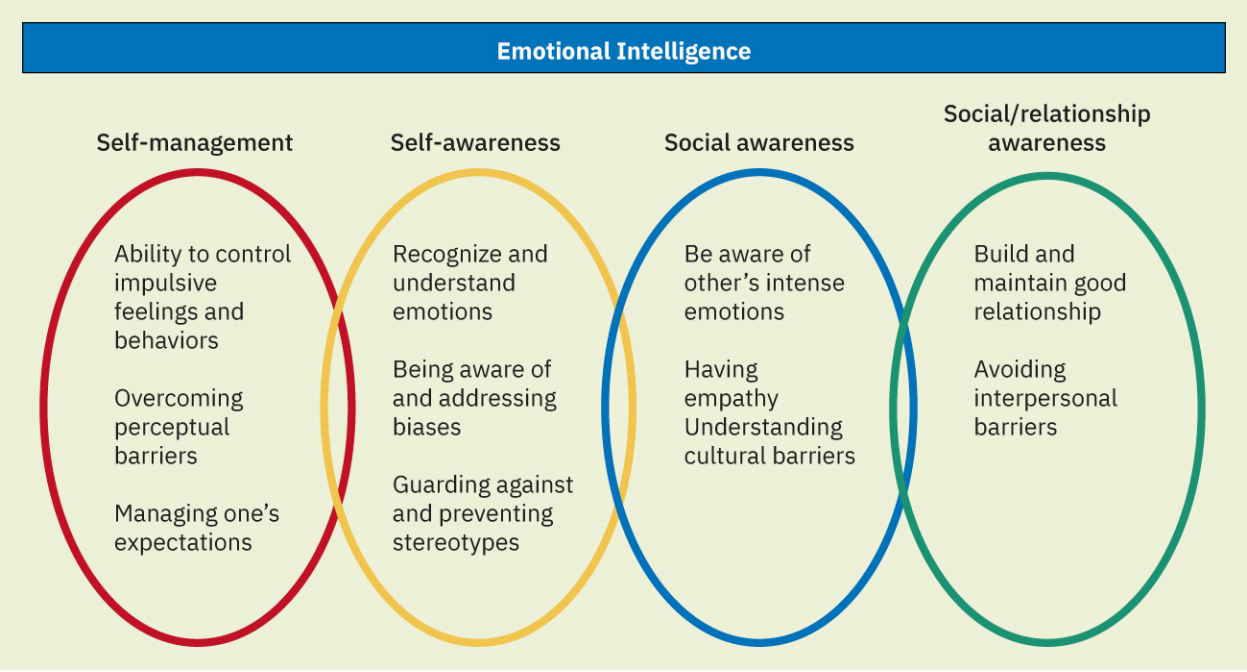

FIGURE 2.9 Healthcare providers need to be aware of their EI and be actionable for both themselves and others. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Take this quiz to test your emotional intelligence (https://openstax.org/r/77emotionquiz) so you can improve your communication with patients.

Self-Management

The ability to control impulsive feelings and behaviors is called **self-management**. Self-management includes being able to manage emotions in healthy ways, like exercise and mediation. Healthcare providers who practice self-management take initiative on projects and follow through on commitments to themselves and those around them. When practicing self-management, healthcare providers can adapt to changing circumstances, which are ever present in healthcare environments.

Perceptual Barriers

A **perceptual barrier** to communication is an internal bias that influences the way an individual perceives others. Perceptual barriers can include personal experiences, beliefs, preferences, and individual triggers, and they can cause a breakdown in communication. For instance, if a patient has experienced sexual assault, they may be triggered by any experience in which they may perceive they are being dominated, causing miscommunication to occur. Nurses can ask patients about their personal experiences, belief preference, and triggers before and during care to overcome this barrier. Be aware of your own perceptual barriers and how they might impact your communication.

Expectations

Managing expectations can eliminate emotional reactions. An expectation is the belief that something will happen. Once emotional reactions are managed, expectations are managed in return. Healthcare providers who manage expectations are better able to care for patients. For example, a patient may have the expectation that they will feel better immediately postoperatively from knee replacement surgery, only to find that they are in pain from the surgery. The nurse should help the patient manage their expectations for the postoperative period, thereby helping to manage the emotional reactions the patient might have.

Self-Awareness

Having **self-awareness** is being able to recognize and understand one's own emotions that are occurring in communication encounters. Healthcare providers should attempt to have self-awareness when caring for patients. Healthcare providers can encounter circumstances in which their nonverbal communication may show their thoughts that may not always be positive. For instance, a patient who has a large, necrotic wound with a foul odor will probably be embarrassed about the wound and will appreciate healthcare providers who can care for them without betraying their emotions in their facial expressions like holding their breath or making a facial expression of disgust.

Biases

A **bias** includes prejudice for or against a person or group compared to another group. Biases in healthcare providers obstruct the nurse-patient relationship, nurses' assessments, and patient care. An **implicit bias** is unconscious bias that can affect both patients and nurses, defining how care is given and received (Bedford, 2018; FitzGerald & Hurst, 2017). Bias is most often directed toward people who have a higher weight, older people, and people who identify as lesbian, gay, bisexual, transgender, queer/questioning, intersex, and asexual (LGBTQIA+) (Gopal et al., 2021). However, bias can occur toward a different race, religion, ethnicity, sexual orientation, age, or even someone's size. Nurses should address biases by working to eliminate them from their practice.

LINK TO LEARNING

Nurses can take free courses at the Institute for Healthcare Improvement (IHI) (https://openstax.org/r/77IHI) in the IHI Open School. Search for the Triple Aim for Population Courses, focusing on TA 101 (Introduction to the Triple Aim for Populations), TA 102 (Improving Health Equity), and TA 104 (Building Skills for Anti-Racism Work). These courses help healthcare providers examine their responsibilities in order to care for patients and families optimally.

Stereotypes

A **stereotype** is defined as an oversimplified image of a certain people or group. For example, a stereotype might be assuming all older people are hard of hearing. Stereotypes can be described as a prejudgment of a patient based on their appearance, for example. Nurses should attempt to avoid stereotyping patients, which can lead to negative outcomes. Stereotypes can be present for a patient's sexual identity, socioeconomic status, education level, age,

disability, and geographic location. Healthcare providers should be aware of their stereotypes and replace them with new perspectives whenever possible. Healthcare providers should also educate themselves about stereotypes and prevent those stereotypes from negatively affecting the care they provide.

Social Awareness

Another dimension of EI is **social awareness**. Social awareness is an understanding of the strong emotions one might encounter as part of their experiences and how they can empathize with others. For instance, a nurse who witnessed a fetal demise during delivery may develop intense emotions of sadness with subsequent deliveries. Being socially aware of the perspective of a parent who is experiencing fetal demise gives the healthcare provider a new perspective to understand the behavior of others who experienced fetal demise. Healthcare providers who have emotionally charged experiences should engage in self-care to relieve the intense emotions so that they can continue to serve patients (Fessell & Goleman, 2020). Healthcare providers who are depleted and not self-aware of or unable to manage emotions will not be able to provide care to patients. During the COVID-19 pandemic, nurses experienced deeply emotional experiences caring for many patients who died; patients who included coworkers, friends, and families. Nurses needed to participate in self-care to prevent burnout.

Cultural Barriers

A **cultural barrier** can affect the delivery of health care. Healthcare providers should strive for cultural competence as well as cultural humility when caring for patients. Cultural competence is the ability to understand a patient's cultural context to effectively provide quality care (AACN, 2021). Cultural humility involves continuous self-reflection to identify personal cultural characteristics and how those may impact actions toward those with similar or different cultural contexts. While cultural competence is a solid foundation to understanding a patient's cultural context, cultural humility allows for deeper execution of these conceptualized ideals.

LINK TO LEARNING

Resources for healthcare providers to take steps toward cultural competence (https://openstax.org/r/77culturalsteps) are provided by the Agency for Healthcare Research and Quality.

Social/Relationship Management

The final aspect of EI is **social/relationship management**. Relationship management includes building and maintaining good relationships, with empathy and patience as the tenets of those relationships. Relationship management can close the feedback loop for communication in which healthcare providers make sure their communications are frequent, clear, and open to feedback, creating a stable base for a good working relationship.

Interpersonal Barriers

An **interpersonal barrier** can cause conflict within relationship management. Nurses know good communication with patients increases quality healthcare delivery and influences patient satisfaction and better health outcomes. When interpersonal barriers are present within the nurse-patient relationship and communication fails, catastrophe can occur leading to patient injury or death. Nurses should strive to avoid interpersonal barriers.

Nurse's Role in Overcoming Communication Barriers with Patient Teaching

Patient teaching helps nurses overcome communication barriers and in turn helps patients overcome poor health outcomes. Good communication in the nurse-patient relationship helps the patient understand and apply the concepts being taught, which leads to more positive health outcomes for the patient. Nurses who teach without overcoming communication barriers give ineffective instruction that can lead to poor health outcomes for the patient because they could not understand what the nurse was teaching.

Effective Teaching Strategies

Effective teaching strategies allow the nurse to address the communication barriers first. Once the nurse has determined what the communication barrier is—for example, a patient has a vision impairment—the nurse can use effective teaching strategies to help the patient better understand the concepts being taught. In this case, the nurse would ask the patient for their preferred accommodations. The nurse could then obtain the form of educational information the patient prefers, whether it is Braille, audiotape, extra-large print, or electronically formatted

handouts.

Evaluating Patient Learning

Once the nurse has determined the patient's preferred form of communication, the nurse is tasked with evaluating the patient's learning. With deference to the patient's communication preference, the nurse should assess the patient's learning by return demonstration, asking the patient to restate the instructions or asking questions to check learning. All these approaches should include questioning and clarification from the nurse.

Document Teaching-Learning Process

The nurse must document the teaching-learning process. The nurse should document all teaching to the patient and the patient's response to the teaching that occurred and describe or list the educational materials that were given to the patient. The nurse should use the correct forms as dictated by the facility. The nurse should include in the documentation the teaching strategies that were used, the communication barriers that may be present, and further learning needs and recommendations for further education.

Summary

2.1 Types of Communication

Nurses are responsible for providing good communication in all healthcare settings and facilities. The nurse should establish a trusting relationship with the patient and use appropriate communication demonstrating active listening, pertinent inquiry, and empathy throughout each patient encounter. The nurse should use verbal communication with the patient, making sure there is congruency with nonverbal communication during the patient encounter. The nurse can use written and electronic communication as a means of communicating with the patient, noting what the patient prefers. The nurse can use four levels of communication—intrapersonal, interpersonal, small-group, and public communication—when providing safe and effective care for the patient. Reflecting on care provided for the patient encompasses intrapersonal communication and is a powerful tool allowing growth of the nurse. The nurse should use both interpersonal and small-group communication while engaged in patient care, as each helps the nurse provide safe and effective care. Using public communication for health care is paramount to disseminate research findings.

2.2 Models of Communication

Nurses should recognize that there are several models of communication that they can employ when communicating with patients and other healthcare team members. For example, if the nurse would like to communicate without feedback, such as when providing presurgical directions, the nurse should use the transmission model of communication, establishing a linear, one-way model of communication. If the nurse is providing discharge instructions, the nurse should use the interactional model in which two-way communication is established between the patient and nurse, allowing for feedback from either the patient or the nurse. If the nurse is responsible for presenting research findings from a research study conducted where they work, they should use the transactional model of communication, in which the nurse can establish social relationships with other researchers who have interest in the topic. Nurses need to recognize which model of communication is most useful in each situation.

2.3 Effective Communication

Nurses help to establish effective communication among patients and the healthcare team. Effective communication that is factual, clear, concise, practical, and persuasive is important as many ideas and thoughts are exchanged between the patient and their healthcare team. Professional communication should be part of effective communication among healthcare team members and the patient, establishing trustworthiness in the relationship. Professional communication should include courtesy and empathy, which assist in developing trustworthiness. Patients are more likely to change health behaviors if they trust their healthcare team. To assist patients in changing their health behaviors, healthcare team members should use MI. Motivation interviewing uses the processes of engaging, focusing, evoking, and planning to help the patient adopt healthier behaviors. The use of effective, professional communication with MI should help the patient to meet their health goals.

2.4 Therapeutic Communication

Therapeutic communication is a technique that should be used by all healthcare providers because it allows patients the ability to better express themselves. Patients who can express themselves better are more likely to be engaged in the nurse-patient relationship and be more interested in improving their health outcomes. Nurses should use open-ended questions and engage in respectful communication with the patient. Nurses should be able to evaluate their own therapeutic communication with the use of a feedback loop. Nurses should avoid nontherapeutic techniques for communication, as they prevent further communication from occurring between the nurse and the patient.

2.5 Barriers to Communication

Nurses need to recognize communication barriers and work with patients and the healthcare team to overcome them. Patients receive better, more comprehensive health care if communication barriers, such as noise or physical environment that occur often in healthcare settings, are removed. Healthcare providers should be cognizant of their EI to overcome communication barriers. If the healthcare provider regularly practices self-management, their ability to provide effective communication is increased. Because the healthcare environment can be fraught with

communication barriers, using EI to disable some of those barriers serves patients well. Nurses have a unique opportunity to overcome communication barriers; they are usually the main communicator with the patient, and if nurses recognize and address the communication barriers present, then safe, effective care that the patient is satisfied with will result. Communication is the basis of health care, and surmounting the barriers effectively positively affects the health care delivered.

Key Terms

active listening when someone **listens by** giving their full attention, listening to understand, and providing thoughtful input
assertiveness showing confidence in oneself
bias prejudice for or against a person or group compared to another group
channel the mode in which the communication is sent
communication the sharing of ideas and thoughts among people
courtesy the practice of being polite, respectful, and considerate
cultural barrier a mental limitation or block about other cultures
culturally competent care meeting and respecting a patient's social, cultural, and linguistic needs while providing care
electronic communication all communication transmitted electronically
electronic health record (EHR) a digital format of a complete medical record of a patient that is able to be shared across multiple healthcare organizations
electronic medical record (EMR) a digital format of a patient's medical chart specific to a single medical facility or practice
emotional barrier a mental limitation or block that influences how others' actions are perceived
emotional intelligence (EI) the capacity to control and express emotions
empathy the ability for one person to understand and share the feelings of another person
engage active listening, with nonverbal communication, asking for feedback when necessary
false reassurance giving comfort that is not based in facts
feedback the response given by a receiver to a sender
Health Insurance Portability and Accountability Act (HIPPA) a federal law creating the national standards to protect sensitive patient health information from being disclosed
health literacy the ability of a patient to understand and use information to make health-related decisions
implicit bias unconscious prejudice
interactional model communication as a two-way process that allows for feedback, and a person alternates as both sender and receiver
interdisciplinary relating to more than one branch of knowledge
interpersonal barrier negative pattern of behavior that hinders communication and impacts relationship management
interpersonal communication exchange of information between two or more people
intrapersonal communication exchange of information with oneself
listening the ability to thoughtfully receive and interpret messages
message the information to be conveyed or communicated
motivational interviewing (MI) an evidence-based counseling approach that involves discussing feelings and incentives with a patient
nontherapeutic communication negative expressions, attitudes, and actions that make a patient feel uneasy
nonverbal communication exchange of information without the use of words; with facial expressions, posture, eye contact, gestures, and physical touch
offering self contributing support by being present or spending time with a patient
passive listening when someone listens to simply hear the messages being sent but may not be mentally or emotionally present and does not engage in the communication process
perceptual barrier internal bias that influences the way an individual perceives others
physical barrier tangible external or internal obstruction to communication
public communication exchange of information between any size audience
receiver the person who receives the message and interprets it

referent communication the use of faces and objects in the place of words during communication encounters
reflective thinking the practice of reviewing past communication experiences
resolution determination of an act that depends on both parties agreeing to an outcome
self-awareness being able to recognize and understand one's own emotions
self-management the ability to control impulsive feelings and behaviors
semantic noise type of communication barrier that occurs when the sender and receiver of a message have different understandings of the meanings of words, phrases, symbols, or language in general
sender the person who initiates a message
small-group communication exchange of information between three or more people
SMART goal an acronym for goals that are specific, measurable, attainable, relevant, and timely
social awareness an understanding of the strong emotions one might encounter as part of their experiences and how they can empathize with others
social/relationship management building and maintaining good relationships with empathy and patience as the tenets of those relationships
stereotype an oversimplified image of certain people or group
therapeutic communication a specialized form of communication used by healthcare professionals to establish a therapeutic or healing relationship with patients
transactional model a two-way process of communication where the sending and receiving of messages happen simultaneously
transmission model a one-way, linear process of communication
verbal communication the production of spoken language to send to a listener
visual communication using visual elements to create messages or impart information
written communication any written message, from formal letters to text messages

Assessments

Review Questions

1. A nurse is developing a plan of care for a patient who has self-identified communication needs. What would be the most appropriate question for the nurse to ask to assess the communication needs of the patient?
   a. What is your preferred form of communication?
   b. Do you speak English?
   c. Have you ever engaged in self-talk?
   d. Do you like to talk with your family?

2. What form of communication is the nurse using when she notices the patient is crocheting a blanket and, speaking directly to the patient, asks them about the blanket?
   a. public
   b. interpersonal
   c. intrapersonal
   d. small group

3. The nurse is preparing to discharge Mr. Francois who is 42 years old and speaks only French. What action by the nurse best provides discharge teaching?
   a. Thoroughly explain his discharge instructions using simple words.
   b. Give him a brochure and show him a website that has information in French and English.
   c. Ask the registered nurse on your unit who speaks French to help explain the discharge information.
   d. Use the hospital-provided translation services even though it will take time to set it up.

4. A nurse provides discharge instructions for a patient and family. Which model of communication should the nurse use to assess learning?
   a. transmission model
   b. transactional model
   c. interactional model

d. action model

5. A nurse provides discharge instructions for a patient. While the nurse is checking if the patient understands the discharge instructions, the patient cannot recall any of the instructions. The nurse assesses the communication and determines that semantic noise caused a breakdown in communication. What is an example of semantic noise?
   a. machines alarming in the room
   b. increased foot traffic in the hallway
   c. frequent public address system announcements
   d. use of medical jargon

6. When conducting MI with a patient, what should the nurse say to encourage the patient?
   a. Let's discuss how you think the change you want to make can be done in small, achievable goals.
   b. Please tell me about what the healthcare provider said to you about your health.
   c. You think you will give up something if you make this change.
   d. Help me understand how this change will affect your lifestyle.

7. A nurse discovers a patient on the floor. The patient states they fell out of bed, they could not reach the call light, and no one answered when they yelled. After checking the patient for injuries, the nurse addresses this adverse event and wants to bring resolution. What is an appropriate action by the nurse?
   a. Find out who was responsible for placing the call light and discuss proper call light placement.
   b. Ask the charge nurse to talk to the patient about fall risk.
   c. Discuss with the healthcare provider keeping all four side rails up at all times.
   d. Assemble a care team and discuss ways to prevent falls and positioning of personal essential items.

8. What would be an example of a therapeutic response by a nurse?
   a. Why are you still smoking?
   b. My mom had a mastectomy after she was diagnosed with breast cancer, I think you should do the same.
   c. Don't you want to be considered a good patient? You better eat all your peas.
   d. Would you tell me more about your fear of magnetic resonance imaging (MRI)?

9. What would be an example of a nontherapeutic response by a nurse?
   a. The nurse is silent while the patient is crying.
   b. The nurse holds the patient's hand during IV line insertion.
   c. The nurse jokes with the patient about weather.
   d. The nurse defends a peer's actions during the previous shift.

10. What physical communication barrier would the nurse be able to intervene in when providing discharge education for a patient?
   a. unit construction on patient rooms
   b. severe thunderstorm occurring in the geographical area
   c. a hospital-wide computer failure
   d. short educational sessions to prevent information overload

11. Which aspect of EI should the nurse consider when faced with caring for a patient who has been physically assaulted, as the nurse has experienced physical assault themselves?
   a. self-management
   b. relationship management
   c. social awareness
   d. self-awareness

12. What would be a nurse's response that demonstrates an evaluation of patient learning?

a. Do you need help checking your pulse?
b. You should take your medication at the same time each day with food.
c. I will provide written instructions on how to administer your insulin.
d. Would you please demonstrate to me how to suction your child's tracheostomy?

Check Your Understanding Questions

1. Describe which level of communication you would use if talking with a patient and their family.
2. Describe how the nurse would incorporate all three models of communication when speaking with a patient and their family about their wishes for end of life. Defend your answer.
3. Describe how you would use MI to educate a patient about diabetes and diet.
4. Describe ways a nurse can change nontherapeutic communication to therapeutic communication.

Reflection Questions

1. What information might you need when assessing the communication needs of a patient?
2. Why does the transmission model of communication not work for many patient situations?
3. What is the priority for the nurse who is assigned to care for a patient who is in a medically induced coma and unable to communicate? What models of communication would the nurse use with the patient and family and why?
4. When would the use of silence as therapeutic communication not work?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #1: Part 1.
   Do you think the patient has a high level of health literacy? Why or why not?
2. Refer to Unfolding Case Study #1: Part 2.
   Which model of communication (transmission, interactional, or transactional) do you think is most appropriate to use with the patient and why?
3. Refer to Unfolding Case Study #1: Part 3.
   What would be an example of nontherapeutic communication between the nurse and patient?

What Should the Nurse Do?

1. A nurse provides discharge teaching to a patient for who is only Spanish speaking. What is a priority for the nurse?
2. A nurse is working with a healthcare provider who wants to send the nurse text messages about patients on their personal phone, which is not secured by the clinic. What should the nurse tell the healthcare provider?
3. The nurse is caring for a patient who states that the COVID-19 virus is a hoax, the pandemic response was not necessary, and this was all just a way for the government to control people. What aspect of effective communication should the nurse use to educate the patient?
4. What is the priority for the nurse who is assigned to care for a patient who has experienced a traumatic brain injury and is having difficulty communicating? What communication barriers could possibly be present? How should the nurse overcome those communication barriers?

Competency-Based Assessments

1. Use the internet to research healthcare communication. Discuss how these processes are helping healthcare providers provide safe and effective care for patients. Discuss one communication tool you found and its advantages.
2. Use the internet to research MI. Discuss the type of patient who would best benefit from the MI process.

3. Read the journal article "'More than words'—Interpersonal communication, cognitive bias, and diagnostic errors" (https://openstax.org/r/77MoreThanWords) in *Patient Education and Counseling*. What do you think about this article? What is your bias? How do you plan to overcome your bias when caring for patients?

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CHAPTER 3
Healthcare Delivery Systems

FIGURE 3.1 Healthcare delivery systems include all aspects of public and private health, wellness, and prevention and must include a culture of cooperation and collaboration. Nurses have an active role in the healthcare delivery system and directly impact it. (credit clockwise from top left: modification of "American Medical Response Ambulance (51190421444)" by Raymond Wambsgans/Wikimedia Commons, CC BY 2.0; modification of "Researcher looks through microscope (2)" by Rhoda Baer/Wikimedia Commons, Public Domain; modification of "US Navy 070919-N-6278K-056 Lt. Cmdr. Mary Gracia, a pediatric nurse practioner attached to Military Sealift Command hospital ship USNS Comfort (T-AH 20)" by Mass Communication Specialist 2nd Class Joan E. Kretschmer/Wikimedia Commons, Public Domain; modification of "Close up of nurse comforting ill patient in hospital ward" by DC Studio/Freepik, Freepik license; modification of "USMC-100804-M-3909A-294" by Pfc. Sarah Anderson/Wikimedia Commons, Public Domain)

CHAPTER OUTLINE

3.1 Levels of Care
3.2 Organizational Frameworks and Structure
3.3 Barriers to Healthcare Access
3.4 Culture

INTRODUCTION The U.S. healthcare industry is like a vast machine that has been added onto and adjusted over time. The healthcare machine is constantly changing and evolving, adding new ideas, practices, and systems to improve patient care, and slowly removing outdated ideas, practices, and systems that no longer work. Understanding how healthcare systems function can positively impact a new nurse's ability to adjust to their healthcare environment.

3.1 Levels of Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe primary health care
- Define secondary health care
- Explain tertiary health care

A patient's **level of care**—primary, secondary, or tertiary—is determined by the complexity and amount of care they receive at any given time (Figure 3.2). Primary care is the most fundamental, and tertiary care is the most complex.

Most individuals move smoothly between levels of care throughout their lifetimes but typically rely mainly on the primary healthcare arena. Individuals with multiple health concerns or complex needs will rely more heavily on the secondary level of care where they can access specialty care. At the same time, those with critical injuries will, at least temporarily, rely on tertiary care.

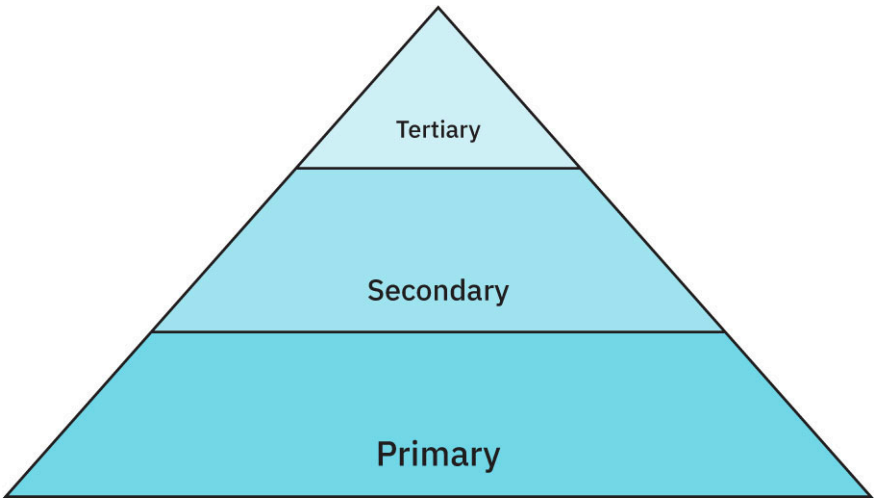

FIGURE 3.2 Think about the levels of care like a pyramid with a strong, broad base and small top. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Primary Health Care

The most fundamental access level of health care is **primary health care**. Primary health care focuses on the prevention of illness and the maintenance of health of an individual. As such, it is the "primary" type of healthcare service used by most individuals most of the time. Suppose a patient needs an annual physical, a flu shot, or to have their seasonal allergies treated. In those cases, they will probably see a primary care provider (PCP). If an individual has a new concern or condition, they will also usually begin at the level of primary health care for foundational evaluation and treatment.

Like how the base of a pyramid supports the top, a strong primary healthcare foundation supports the rest of the healthcare system. Studies have consistently shown that patients with a primary healthcare provider have improved health outcomes because changes in health status are identified and managed early (Willis et al., 2021). Patients without a primary healthcare provider often enter the healthcare system at a higher level in the pyramid, which always results in poorer outcomes and higher overall costs.

Primary Healthcare Goals

The goals of primary health care are health promotion and disease prevention. In other words, to provide preventive care and screening for illness or the development of conditions, primary health care identifies conditions early enough to minimize their impact on a patient's quality of life and financial resources, treats minor to moderately severe acute and chronic conditions, and coordinates care between higher levels on the pyramid. For example, PCPs order colorectal screening, monitor blood pressure and basic blood work, and manage childhood immunizations (Willis et al., 2021). Primary healthcare goals include the following:

- being a patient's first contact with the healthcare system (Bodenheimer & Grumbach, 2016);
- supporting current health status (for healthy individuals) (Willis et al., 2021);
- preventing decline in health status, when possible;
- identifying early signs of declining health status;
- treating a wide variety of basic illnesses, conditions, and injuries;
- providing continuity of care over time with the same physician (Bodenheimer & Grumbach, 2016);
- referring patients to secondary or tertiary providers if they need more complex care (Bodenheimer & Grumbach, 2016); and
- functioning as a **medical home**, supplying comprehensive primary care, coordinating care across the other levels of health care, and ensuring patients' quality of care and safety (Agency for Healthcare Research and Quality [AHRQ], 2022).

LINK TO LEARNING

The AHRQ offers a set of suggested assessments to be performed on all patients. In Appendix 4: Adult Health Assessment Sample Questions (https://openstax.org/r/77AdultHealthQs) of *Health Assessments in Primary Care*, a checklist of these suggested assessments is offered. Content areas where patients provide affirmative answers can guide primary care visits and assist in identifying patient needs.

Primary Healthcare Providers

A **primary care provider (PCP)** includes any physician (medical doctor or doctor of osteopathic medicine), nurse practitioner, clinical nursing specialist, or physician assistant. PCPs provide, coordinate, or help patients access a range of healthcare services (Table 3.1) (Healthcare.gov, n.d.). Primary care providers include family practice physicians, general practitioners, pediatricians, geriatricians, internal medicine physicians, nurse practitioners, physician assistants, registered nurses (RNs), licensed practical nurses (LPNs)/licensed vocational nurses, and a wide variety of assistive personnel.

Provider Type	Total Number in the United States	Number Working in Primary Care
Physicians	730,026	228,936
Nurse practitioners	220,332	94,302
Physician assistants	118,195	42,195

TABLE 3.1 Percentage of Primary Care Providers Working in the United States (Source: Willis et al., 2021.)

Primary Healthcare Settings

While most people think "doctor's office" when they consider seeing a primary care practitioner, primary care occurs in a variety of settings. Primary care can happen in walk-in clinics, urgent care centers, pharmacies, and schools (Figure 3.3). Any place actively seeking to manage minor illness or injury, to offer preventive care such as vaccinations, or to maintain an individual's current health offers primary care (Table 3.2) (Healthcare.gov, n.d.).

FIGURE 3.3 This PCP obtains a patient's temperature. (credit: "It takes a village: military medical in East Africa coordinates response to COVID-19" by US Africa Command/Flickr, CC BY 2.0)

Setting/Type	Reason	Scheduling
Primary care office	Annual physical, new complaints, acute illnesses, vaccinations, blood work	Usually scheduled, may be unscheduled
Walk-in clinic/urgent care	Usually freestanding; immunizations, sports or occupational physicals, acute illness, injury	Usually unscheduled, may be scheduled
Pharmacy	Some testing (such as COVID or flu) and immunizations	Either scheduled or unscheduled
School	Medical care for students who take medications for acute or chronic illnesses or who become ill while at school	Either scheduled or unscheduled
Community settings such as health fairs or community centers	May offer blood pressure screenings, other basic well patient care, and education and encouragement for patients to be mindful of their health	Either scheduled or unscheduled

TABLE 3.2 Common Primary Healthcare Settings

Primary Healthcare Procedures and Services

Although the keystone of primary care is preventive care and screening, primary healthcare professionals perform the broadest range of procedures and offer the most services of all levels of care (Hopayian, 2022). At the primary care level, patients may receive laboratory tests, injections, x-rays, minor wound care/procedures, nutritional counseling, and/or referral for additional screening, specialty treatment, or home health care. Primary care procedures also include ordering colorectal screening recommended for all people past a certain age, monitoring blood pressure and basic blood work, and managing childhood immunizations. In addition to preventive care and screening, primary care practitioners offer frontline treatment for common illnesses such as strep throat, flu, or injuries, such as a sprain or a cut needing basic stitches. They also manage many conditions their patients experience that are mild to moderate in severity. For example, in 2019, more people visited their PCP to manage hypertension, diabetes, or asthma than sought secondary care for the same issues (Willis et al., 2021). Finally, and very importantly, PCPs aid patients in accessing higher levels of care by making referrals and ensuring that all patient needs are being met.

PATIENT CONVERSATIONS

Referral to a Higher Level of Care

Scenario: A 49-year-old male patient recently had x-rays ordered from his PCP related to long-term pain in his back. At the provider's request, the nurse calls the patient to offer the results and next steps. The nurse is polite, introduces herself, states the reason for the call, and ensures the patient can speak with her. She is friendly with the patient and does not make him feel rushed. She establishes a partnership with the patient and provides him with the opportunity to decline care. Finally, she finishes with one topic before she begins another.

Nurse: Good afternoon, Mr. Smith. This is Sandy, Dr. Collier's nurse. Dr. Collier asked me to call you about your recent x-ray. Is now a good time to talk?

Patient: Sure, Sandy, I've got a few minutes. How are you today?

Nurse: I'm doing great. How are you feeling? Did the steroids and medication Dr. Collier prescribed for you help your back?

Patient: I've been taking them just like she ordered, and my back does feel better.

Nurse: Excellent! That's what we were hoping to hear. The x-ray of your back shows some age-related changes and arthritis like you discussed in the office. Dr. Collier would like to refer you to physical therapy to see if we can get your back stronger and more mobile now that the inflammation is calming down. I think she mentioned this to you at your appointment. Can I make that referral?

Patient: That would be great! Thank you.

[In addition to the information the doctor expected to find regarding the patient's back, the doctor also noted an unexpected finding of a large kidney stone on the x-rays. The nurse changes to this new topic and proceeds to discuss next steps with the patient.]

Nurse: We will give physical therapy a call to get that first appointment set up for you today. Now, in addition, when the doctor looked at your x-ray, Dr. Collier also noticed a large kidney stone in your left kidney. Are you having any pain in your lower back?

Patient: Well, it has been aching back there a lot, but I just assumed it was related to the other issues in my back.

Nurse: Dr. Collier would like to refer you to a urologist about that stone. As I mentioned, it is quite large and may give you more problems in the future. May I make that referral?

Patient: Yes, please, and thank you. Do I need to worry about surgery?

Nurse: It is a possibility, but the urologist has many treatment options, and I am sure that they will work with you to find the best one for you. I will get that referral made today. Do you have any questions for me?

Scenario follow-up: The patient is understandably concerned about the potential of surgery related to his kidney stone. The nurse provides him with honesty and reassurance, without providing any treatment information or telling the patient what the urologist will do, which would be outside of her scope of practice. The conversation is closed after asking the patient if he has any other questions.

Secondary Health Care

The second level of the healthcare pyramid is **secondary health care**, sometimes referred to as acute care or hospital care (Hopayian, 2022). Secondary health care encompasses most of the specialties, practices, providers, and settings to which primary care practitioners provide referrals. Secondary care is the next step when a PCP is unable to assist a patient with successfully managing a healthcare problem (Hopayian, 2022). For example, a patient who continues to have severe episodes of asthma despite being on regular medications would probably be referred to a lung specialist (pulmonologist). Patients also access the secondary healthcare system if they go to the emergency department for an acute illness, an injury, or exposure to an environmental toxin (Figure 3.4). Some patients do not have a primary care provider (PCP), so the secondary healthcare level may be where they enter the system. While not ideal, patients can enter the healthcare system at the secondary level for several reasons. Fear, lack of transportation, limited access to primary care appointments, or lack of insurance may cause a delay in seeking care until the situation is urgent. Or having few PCP offices in a rural community may affect if and when a patient seeks health care. Sometimes patients choose to enter the healthcare system at the secondary level when they are self-pay or when their insurance company or payer allows it (Bodenheimer & Grumbach, 2016).

FIGURE 3.4 When patients go to the emergency room for illness or injury, they enter at a secondary healthcare level. (credit: "Emergency" by Taber Andrew Bain/Flickr, CC BY 2.0)

Secondary Healthcare Goals

Secondary healthcare goals are to manage an acute problem in order to return a patient to baseline function, to ensure a condition is well controlled, to provide education about the condition in order to decrease the chances of it becoming a problem again, and to return care to the PCP (Bodenheimer & Grumbach, 2016). Often a visit or two may be enough to address an issue; however, with complicated or chronic issues, secondary treatment may last for extended periods.

Consider an example of a primary healthcare service of ordering a patient referral for a routine screening colonoscopy. This screening is recommended by the U.S. Preventive Services Task Force for all adults over the age of 45 years (Centers for Disease Control and Prevention, 2023). The PCP sent that referral to a secondary care provider, probably a **gastroenterologist** (a practitioner who deals specifically with issues involving the digestive tract). The gastroenterologist scheduled and performed the colonoscopy, which was the only time the patient saw that physician because the results were normal. The issue was managed, and the patient returned to baseline. No further secondary care was needed. Primary care resumed responsibility for the patient's continued care going forward (Figure 3.5).

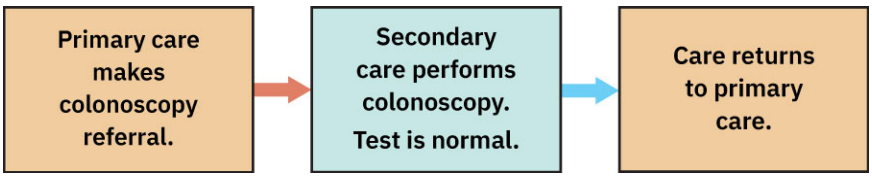

FIGURE 3.5 Primary care providers order recommended screenings, such as colonoscopies and mammograms, from secondary providers. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sometimes the process of moving from primary to secondary care and back to primary care can be more complicated. For example, a 16-year-old was admitted to an acute psychiatric facility (a secondary setting) with feelings of profound depression and suicidal thoughts. They stay there for one week, begin medication, and attend a few group sessions. After discharge, they are assigned to a psychiatrist (secondary provider) for medication management and a psychotherapist (secondary provider) for talk therapy. They see the psychotherapist weekly for nine months and the psychiatrist every three months until they relocate to attend college. In this case, the patient's acute problem was managed by a team of secondary healthcare providers over an extended period of time. While this secondary care was occurring, the patient's PCP managed all the other routine health care needs the patient had. The PCP remained as the patient's healthcare provider in the long term, while special secondary providers entered and exited as specific problems arose.

LINK TO LEARNING

Transitions of care, moving between one provider to another, can be very complicated and may even have deadly consequences. The problem is serious enough internationally that the World Health Organization issued guidance to assist facilities (https://openstax.org/r/77SafeCareWHO) in providing safer transitions. Consider how as a new nurse you can ensure safe transitions.

Secondary Healthcare Providers

A **secondary care provider** falls into one of several groups: medical (physician, nurse practitioner, physician assistant), mental health (psychiatrist, psychologist, counselors), and allied health professionals (physical, occupational, speech therapy, social workers, and case managers) (Hopayian, 2022; MedlinePlus, 2022). Secondary care providers are specialists in their area of expertise and have had additional training to reach that level of expertise. Specialists are chosen for referral based on the scope of their practice. For instance, a **cardiologist** treats disorders of the heart, a **urologist** treats disorders of the urinary tract system, a **pulmonologist** treats conditions of the lungs, and a **dermatologist** treats disorders of the skin.

Secondary Healthcare Settings

Patients seek secondary health care for a wide variety of reasons, in many locations, and on a scheduled or unscheduled basis. While reading through Table 3.3, consider why it matters if the health care is scheduled or unscheduled (hint: consider the differences between primary and secondary care).

Setting/ Type	Reason	Scheduling
Specialty care office	Meet with a specialist, such as a cardiologist, urologist, physical therapist, or obstetrician, for first or follow-up appointment	Scheduled
Emergency room	Manage an urgent or emergent illness, condition, or injury	Unscheduled
Hospital admission	Manage an urgent or emergent illness, condition, or injury; general surgical procedures (not complex); give birth; receive mental health care after a crisis	Either scheduled or unscheduled
Same-day procedure center	Have a low-risk, basic procedure or surgery, after which discharge is expected the same day, such as colonoscopy or cardiac stress test	Scheduled
Medical imaging center	Receive a wide range of medical imaging services; may be affiliated with an emergency department or hospital or may be freestanding	Either scheduled or unscheduled

TABLE 3.3 **Secondary Healthcare Settings**

Secondary Healthcare Procedures

Secondary healthcare procedures are procedures performed by secondary providers that usually are focused on a specific body part or organ and are noninvasive or minimally invasive (such as requires no more than topical numbing of the skin). Secondary procedures include the following:

- most medical imaging services (i.e., computed tomography [CT] scan or ultrasound);
- therapeutic techniques, such as chiropractic or dry needling (a technique similar to acupuncture that healthcare providers use to manage pain and mobility issues);
- nonsurgical management of fractures, such as setting and casting;
- organ-specific laboratory work, such as cardiac enzymes, liver functioning, or urine osmolality;

- skin and tissue biopsies (sampling); and
- tests, such as cardiac stress test (treadmill test) or pulmonary function test (blow into tube or machine).

REAL RN STORIES

Secondary Health Care

Nurse: Perry, RN
Clinical setting: Emergency department
Years in practice: 9
Facility location: A midsize community hospital in the southern United States

I was working the night shift in the emergency room early in my career. Rodrigo arrived at the emergency department around 2 a.m. He was a 49-year-old man with obesity of African descent, who was a long-haul truck driver. Rodrigo complained of feeling very unwell with the most severe headache of his life. When he walked into the emergency room, his blood pressure was 199/125. He told the doctor that he did not have a primary care physician because of his job and usually only saw a doctor for his yearly department of transportation physical. He admitted that he was aware his blood pressure ran high and that he had used his wife's blood pressure medicines to pass the physical.

Rodrigo received a CT scan of his head, and the radiologist detected a large aneurysm in his brain (a complication of untreated high blood pressure), which appeared to be leaking. Arrangements were at once made to life-flight Rodrigo to a tertiary center for immediate surgery. He was frightened and showed me pictures of his young children to keep his mind off his fear while waiting for the air transport. Unfortunately, his aneurysm ruptured, and he died in flight to the tertiary center.

I still remember Rodrigo today and feel bad for his family. His death was one of the first in my career, and I know it would probably have been completely avoidable if he had sought care from a PCP to manage his blood pressure.

Tertiary Health Care

The top level in the healthcare pyramid is **tertiary health care** (Figure 3.6). When patients have healthcare problems, illnesses, or injuries that cannot be managed by primary or secondary care, they move into the tertiary healthcare level. Tertiary care may involve invasive medical procedures and major surgery. Tertiary health care is offered using specialty tools and medical staff and involves advanced medical treatments and diagnostics (Hopayian, 2022; MBA Healthcare Management, n.d.). Patients may also go to the tertiary healthcare level when they have rare conditions or multiple comorbidities (many conditions occurring at the same time and requiring secondary care) (Hopayian, 2022). There are fewer tertiary healthcare facilities and hospitals than secondary healthcare ones, and severely ill patients are often transported to distant locations to receive tertiary services.

FIGURE 3.6 Healthcare providers perform surgery, like the surgery shown here, in tertiary healthcare facilities. (credit: "U.S. Army and Ghanaian medical professionals perform a radical prostatectomy during Medical Readiness Training Exercise 17-2 at the 37th Military Hospital in Accra, Ghana, Feb. 8, 2017" by Staff Sgt. Shejal Pulivarti/rawpixel, Public Domain)

Tertiary Healthcare Goals

The goals of tertiary health care are similar to the goals of secondary health care: manage a severe illness, condition, or injury; return a patient to baseline function; ensure a condition is well controlled; and provide all care possible until it is clear that the patient will not survive. Tertiary care is specific and temporary. The patient receives a service, surgery, or supportive treatment and returns to their PCP (Bodenheimer & Grumbach, 2016).

A previous example of primary health care was a referral for a colonoscopy. An example of secondary health care was when the patient received the colonoscopy, and care returned to the primary level when the procedure resulted in normal findings. An example of tertiary care is what happens if the colonoscopy is not clear. Consider Susan from a rural area in the Midwest where she has a long relationship with her local PCP and receives annual physicals consistently. Her PCP orders a colon screening for her when she is 45 years old per national guidelines, and Susan sees a secondary care provider in a nearby midsize town for the test. During the test, polyps are discovered, removed, and sent to pathology for testing. The pathology results reveal that Susan has colon cancer. Her PCP and secondary provider communicate and decide together to refer Susan to a tertiary facility in the closest metropolitan area. The facility is specifically dedicated to treating cancer. Over the next several months, Susan receives tertiary health care that includes a surgical procedure and chemotherapy and radiation therapy. When Susan is deemed to be cancer-free, her care is returned to her secondary provider for intermittent follow-ups and her primary physician for general health care (Figure 3.7).

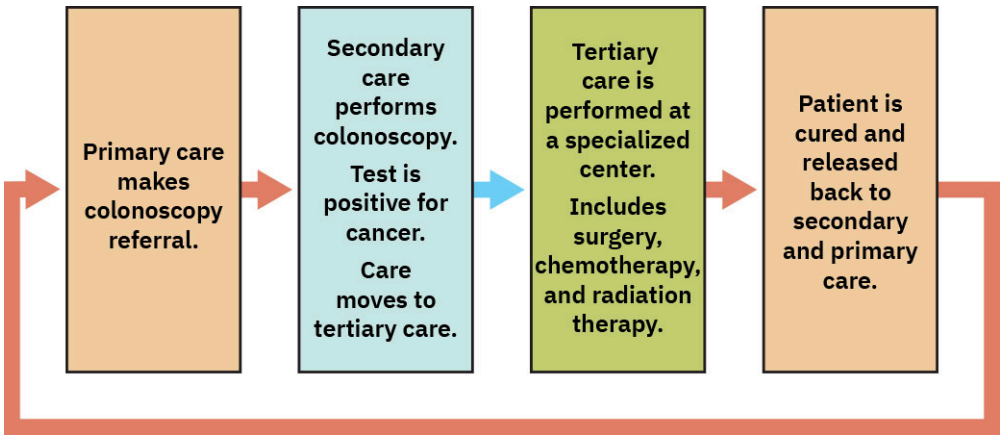

FIGURE 3.7 Observe how the flow of care moves from the PCP through the secondary care provider to the tertiary care level and then back to primary and secondary care. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LIFE-STAGE CONTEXT

Managing Care for Patients with Multiple Chronic Illnesses

Older patients are the population most likely to use tertiary care and/or multiple secondary care providers related to having multiple chronic illnesses. Having a PCP who accepts the responsibility of functioning as a medical home can be most important for these patients. When patients have multiple specialty providers who are each prescribing medications and not communicating with each other, it is very easy for patients to become sicker due to their medications rather than their conditions. Having a medical home allows older patients and those with multiple chronic medical conditions to have higher quality, more efficient care, because it is coordinated through a single location (AHRQ, 2022).

Tertiary Healthcare Providers

There is a lot of overlap between secondary and tertiary care providers in terms of the care they provide. The key difference is the level of management (such as surgery) and expertise the provider can offer. A practice group made up mostly of secondary providers will often have a **tertiary care provider** available on staff to manage patients who require more advanced care. Table 3.4 offers a few examples of tertiary care providers.

Secondary Provider		Tertiary Provider	
Cardiologist	Treats cardiac issues	Cardiothoracic surgeon	Treats cardiac issues and performs cardiac surgery
Pulmonologist	Treats lung issues	Pulmonary intensivist	Manages respiratory arrest and life-threatening respiratory conditions in tertiary intensive care unit settings
Radiologist	Reads and diagnoses patients through medical imaging	Interventional radiologist	Uses medical imaging to actively visualize the internal bodily structures while performing surgery

TABLE 3.4 Examples of Tertiary Care Providers

Tertiary Healthcare Settings

Much of the time, tertiary health care happens in large, urban hospitals (such as a level 1 trauma center) or specialty hospitals (such as cancer center hospitals or hospitals for children). However, tertiary care can take place in any medical location where highly specialized treatment and equipment are available (Table 3.5). For example, in the discussion of secondary health care goals, an example was given of a 16-year-old who was admitted to a psychiatric facility for secondary management of extreme depression and suicidal thoughts. If the patient had gone to an intensive outpatient treatment program after discharge (say five days a week, six- to eight-hour days, for several weeks), they would have been in a tertiary health care setting, working with professionals trained specifically to provide the most effective level of intensive long-term treatment for that age group.

Setting/Type	Reason
Large urban hospitals with critical care specialties	Care and management of rare or complicated illnesses or traumas, including transplants, surgery, burn units, and intensive care units
Specialty hospitals focused on specific diseases or patient groups	Provide intensive management of specific disease processes, such as cancer or spina bifida

TABLE 3.5 Settings for Different Types of Tertiary Care

Setting/Type	Reason
Specialty medical clinics	Provide intensive treatments for specific disease processes, such as dialysis for kidney disease
Specialty mental health facilities	Provide intensive treatments for mental health, such as intensive outpatient, day treatment, residential treatment for substance abuse, or electroconvulsive therapy

TABLE 3.5 **Settings for Different Types of Tertiary Care**

Tertiary Healthcare Procedures

Tertiary healthcare procedures include any complex procedure or treatment that is performed by highly trained (or group of highly trained) practitioners with specialized equipment to manage complicated conditions (Astron, 2019). Such procedures may include the following:

- major surgeries;
- organ transplants;
- joint replacements;
- long-term care interventions, such as chemotherapy or substance-use treatment; and
- intricate medical services, such as serious burn and wound care, trauma management, and critical care (Hopayian, 2022).

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Levels of Prevention versus Levels of Care

Just as there are primary, secondary, and tertiary levels of care, there are also primary, secondary, and tertiary levels of prevention. Unlike levels of care, which reflect the complexity of care a provider delivers, levels of prevention are types of actions that providers engage in to assist their patients to remain healthy:

- Primary prevention includes actions taken to prevent diseases from occurring, such as immunizations or tobacco cessation.
- Secondary prevention includes actions taken to identify diseases early, such as mammogram screenings or colon screenings to detect cancer or blood pressure screenings to detect hypertension.
- Tertiary prevention includes actions taken to mitigate the effects of illnesses once established, such as physical therapy for a patient with fibromyalgia or arthritis or foot care for patients with diabetes.

It is important to remember that the level of prevention and the level of care are not synonymous. A PCP can order or provide tertiary prevention such as physical therapy and diabetic foot care. The key to remember is that prevention levels are always action steps on the part of the provider, the patient, or both (Kisling & Das, 2023).

3.2 Organizational Frameworks and Structure

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the organization of healthcare delivery systems
- Recognize the structure of healthcare delivery systems
- Explain the components for integrated healthcare delivery

The way an individual understands and defines healthcare organization, structure, and delivery varies widely based on who they are; where they live; if they are insured, uninsured, or underinsured; and who controls the healthcare system they use. This section covers healthcare delivery system organization, structure, integration, and providers. In the United States, there is fluidity among the levels of care, and physicians may work at several levels based on the needs of their patients (Bodenheimer & Grumbach, 2016). However, in many parts of the world, primary, secondary, and tertiary care are managed by entirely separate practitioners (Bodenheimer & Grumbach, 2016). Yet, the concepts exist universally. In this section, consider how those interactions affect opinions and experiences

within the healthcare system.

Most countries use one of four basic models to structure and organize their healthcare systems (Chung, 2017). By contrast, the United States combines elements of each of these models. Table 3.6 provides a brief introduction to these models.

Model Name	Primary Characteristics	Countries Using
Beveridge model: single-payer national health service	• Government alone pays for and controls all medical costs • Paid for with income tax • Medical facilities are public • Universal coverage • Focused on ensuring equal access, reducing disparities, and centralizing decision-making	• United Kingdom, Spain, Cuba, New Zealand • In the United States: Veterans Health Administration, public, and other federal hospitals
Bismarck model: social health insurance model	• If you are employed, you have insurance paid by you and your employer • Prices are controlled by the government • Medical facilities are private	• Germany, France, Japan • In the United States: employer-based healthcare plans are similar, but government does not control prices
National health insurance: single-payer national health insurance	• Government pays for everyone's health care • Medical facilities are private • Patients can contract for private insurance if they choose	• Canada, Taiwan, South Korea • In the United States: Medicare and some Medicaid
Out-of-pocket model: market-driven health care	• Patients pay for their own care • Usually in countries without strong healthcare infrastructure	• Much of Africa and South America, parts of India • In the United States: those who are uninsured or underinsured

TABLE 3.6 Basic Models of Health Care (Source: Based on Chung, 2017.)

LINK TO LEARNING

The American Hospital Association (AHA) offers Fast Facts on U.S. Hospitals Infographics (https://openstax.org/r/77USHsptlFacts) that compare U.S. hospitals using a variety of metrics. Explore some of their visuals comparing different types of hospitals.

Organization of Healthcare Delivery

A **healthcare delivery organization** is a single facility or group of facilities that provide medical care for some portion of a population. There are three types of healthcare delivery systems in the United States: not-for-profit, for-profit, and state/local government (Table 3.7) (Yarbrough Landry et al., 2019). To determine which delivery system applies to an organization, three economic questions and one healthcare question can help:

- Where do the funds to operate the organization come from?
- Are **profits** (money left after all bills, including staff salaries, are paid) expected?
- Are **taxes** (money paid to the local, state, or federal government for property and purchase of goods) paid by the organization?
- Is the organization required to function as a **safety-net hospital** (a facility that is required to provide care for a patient no matter their ability to pay)?

	For-Profit	Not-for-Profit	State and Local Government Hospitals
Where do operating funds come from?	Investors	Donors	Government
How are profits managed?	Returned to shareholders	Reinvested in the hospital or in the community	Reinvested in the hospital or in the community
Are taxes paid?	Yes	No	No
Is it a safety-net hospital?	Rarely	Maybe, if it is a university or teaching hospital	Yes

TABLE 3.7 Comparison of Healthcare Delivery Organizations

For-Profit Systems

For-profit hospitals represent 20 percent (1,228) of the hospitals in the United States (see Figure 3.8) (AHA, 2022). These hospitals are funded by investors who expect to have a return on their investment. In this type of system, an investor is a **stakeholder**, or person with an interest in the success of the organization. While **for-profit** systems serve their communities, they are also under pressure to earn a profit at the end of the year, which is then returned to the investors (Cheney, 2019). As a result, their leadership structures tend to include representatives of their investors and community leaders, which creates a push–pull relationship between patient care and financial outcomes. Further, for-profit facilities must pay local, state, and federal taxes on their facilities, earnings, and purchases.

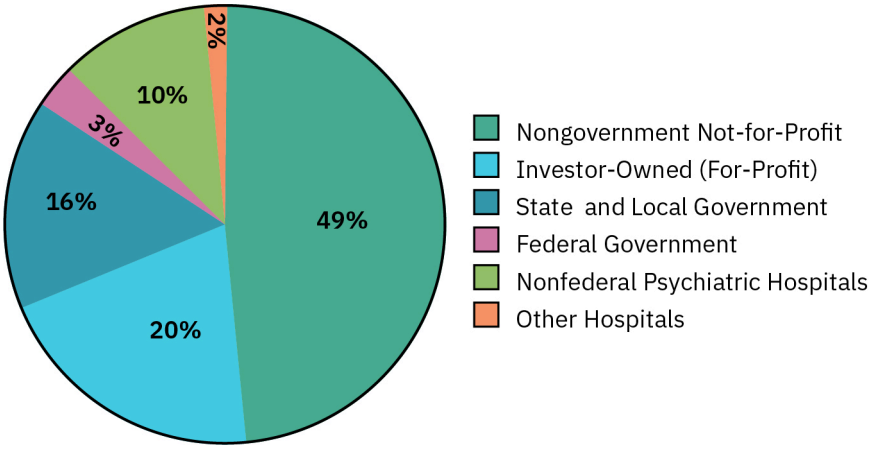

FIGURE 3.8 In 2020, there were 6,093 hospitals in the United States divided into several categories. Other hospitals include units within institutions (such as within prisons) and some long-term care facilities (AHA, 2022). (data source: American Hospital Association; attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

For-profit facilities are often efficient, supplying high-quality services that are needed in large quantities (such as medical imaging or cardiac stress testing). Yet, they often leave tertiary care to other organizational types due to the expense and lack of profit margin for these types of procedures (Cheney, 2019; Gee & Waldrop, 2021). Some studies have shown that for-profit facilities may choose not to offer unprofitable services even when there is a demonstrated need in the community (Horwitz & Nichols, 2022). Legally, they have more flexibility in what services they provide than their counterparts (Masterson, 2017).

All hospitals are required to treat critically ill patients who come to their emergency departments. However, most for-profit hospitals will stabilize patients who are underinsured or without insurance and transfer them to other facilities (usually either not-for-profit or state/local government–run facilities). Rarely will a for-profit facility function as a safety-net hospital (Moura, 2021).

Often, for-profit hospitals are concentrated into large healthcare systems and/or group their facilities geographically. In 2016, four for-profit hospital groups owned 520 (42 percent) of the for-profit hospitals in the United States (Cheney, 2017). This consolidation of care by the hospital groups can be beneficial for patients. When there are many within one group, there are opportunities for sharing knowledge between facilities. However, there is also evidence that for-profit facilities will leave communities when their facilities no longer create a profit, regardless of the community's need for a hospital (Masterson, 2017). For example, in 2019, only 10 percent of for-profit hospitals were in rural communities (AHA, 2021).

Not-for-Profit Systems

A **not-for-profit (NFP)** hospital does not have to pay federal, state, or local taxes but is required to provide **charity care** (free or discounted care) and serve their communities (Gee & Waldrop, 2021). Funding for these facilities comes from private donations, fundraisers, public funding, and payments for their services. Profits are not returned to shareholders but are expected to be turned back into the facility for improvements, salaries or services for employees, or community services. Because they have a mandate to serve their communities and do not have to answer to shareholders, NFP hospitals are more likely to offer services with poor profitability, such as emergency or trauma care, burn units, or obstetrics (Gee & Waldrop,2021; Horwitz & Nichols, 2022).

NFP hospitals account for 49 percent (2,960) of hospitals in the United States, the largest percentage of any type of hospital system (Figure 3.8) (AHA, 2022). Their focus on community creates an environment of long-term planning and deep attachment to their communities. Most NFP hospitals remain in their communities and are less likely to close if they become unprofitable because they are needed to meet the needs of the community (Cheney, 2019). Unfortunately, some NFP hospital programs have been accused of not providing enough charity care, and there is lack of regulation around the concept of community services. Consequently, regulations vary between states and territories (Ollove, 2020; Rapfogel & Gee, 2022).

As with their for-profit counterparts, NFP hospitals are required to treat critically ill or injured patients, regardless of their ability to pay, until they are stable. Then, many of them will transfer these patients to state and local government institutions. Other NFP hospitals, particularly large university and teaching hospitals, provide safety-net care for patients who are unable to pay (Moura, 2021).

State and Local Government Institutions

State and local government healthcare institutions are funded entirely or in part with public money (collected taxes) and charitable donations. The institutions are controlled by the state/local government in which they are built (Tikkanen et al., 2020). They include roughly 16 percent of U.S. hospitals (Figure 3.8) (AHA, 2022). These types of hospitals are tax exempt because they are government agencies, and profits are generally unexpected. These institutions do attempt to bill patients and accept insurance; however, they are also safety-net facilities and provide care for the uninsured or underinsured regardless of ability to pay (Moura, 2021).

LINK TO LEARNING

Explore the informational sections of the following healthcare delivery systems to learn how different hospital structures represent themselves. The "Company Overview" for Community Health Systems (https://openstax.org/r/77CommHealthSys) presents details about this large, for-profit health system. The "About" section for Vanderbilt University Medical Center and Network (https://openstax.org/r/77VanderbiltMed) provides details about this large university and teaching NFP hospital and system. The "About Us" section for Grady Health System (https://openstax.org/r/77GradyHealth) gives more information about this large local government–run hospital in Atlanta, Georgia.

Structure of Healthcare Delivery

Another way to explore healthcare delivery is based on the concept of public versus private. In health care, an institution is **public** if it is run and largely funded by the government and is for the good of the people it serves. An institution is **private** if it is run and funded by a group other than the government and can be either a for-profit or a NFP institution. However, the differences between the two sectors are much more complex.

Public Health Institutions

Public health institutions include state and local hospitals. However, **public health institutions** go far beyond hospitals. The federal government's Department of Health and Human Services branch has nine agencies that focus on public health, five of which are the Centers for Disease Control and Prevention (CDC) (Figure 3.9), the Food and Drug Administration, the Administration for Strategic Preparedness and Response, the Agency for Healthcare Research and Quality (AHRQ), and the Centers for Medicare and Medicaid Services (CMS). These agencies set policies and provide governance for all other types of healthcare systems in the United States (both for-profit and NFP systems) and set policy at a **population level** (all individuals within a given population).

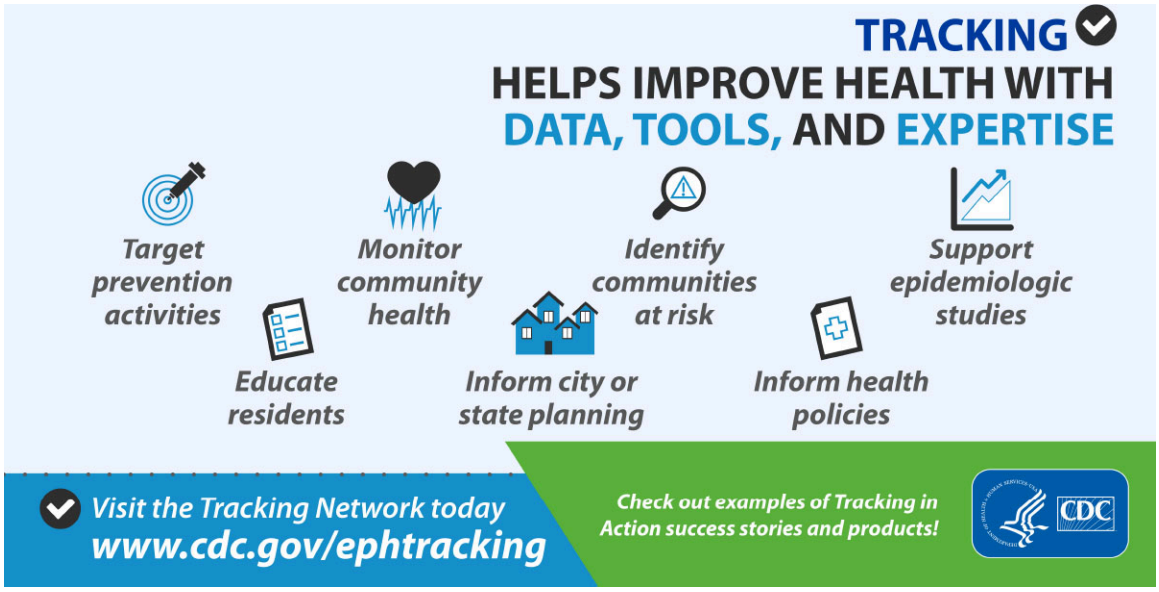

FIGURE 3.9 The Centers for Disease Control and Prevention work closely with state and local health departments to improve population health. (credit: work by Centers for Disease Control and Prevention, Public Domain)

At the local and regional levels, state and local health departments are critical public health institutions. These agencies offer health services such as immunizations and well-baby and family planning services. They also administer programs such as WIC (a food supplement program for women, infants, and children), monitor communicable diseases, and manage testing and reporting of communicable diseases. Additionally, they provide health education programs, are active in regional emergency preparedness activities, and store and provide **vital records** (birth, marriage, divorce, and death certificates) for individuals in their communities. They are also responsible for license certification, verification, and renewal for nurses and other medical health professionals. The programs they offer vary between the states, but they all share the common goal of supporting the overall health and well-being of the citizens of that region.

Private Health Institutions

Private health institutions include both for-profit and NFP hospitals and facilities, such as doctors' offices, outpatient clinics, pharmacies, same-day surgery centers, and other types of healthcare institutions that are not funded by any government or governed by a public agency and do not set health policy at a population level. Almost 70 percent of U.S. hospitals are **private health institutions**, as are most other types of healthcare providers (Figure 3.8).

Integrated Delivery Systems

An **integrated delivery system (IDS)** is a network of providers and agencies who collaborate with each other to

provide care to an individual or a community (Figure 3.10) (Yarbrough Landry et al., 2019). They can be large or small and organized and run by a single group or a partnership between groups. They attempt to meet the care needs of their patients at primary, secondary, and tertiary levels. Their goals include sharing information, responsibility, and resources to ensure the best care (Yarbrough Landry et al., 2019). The primary care medical home is one example of the integration of delivery systems.

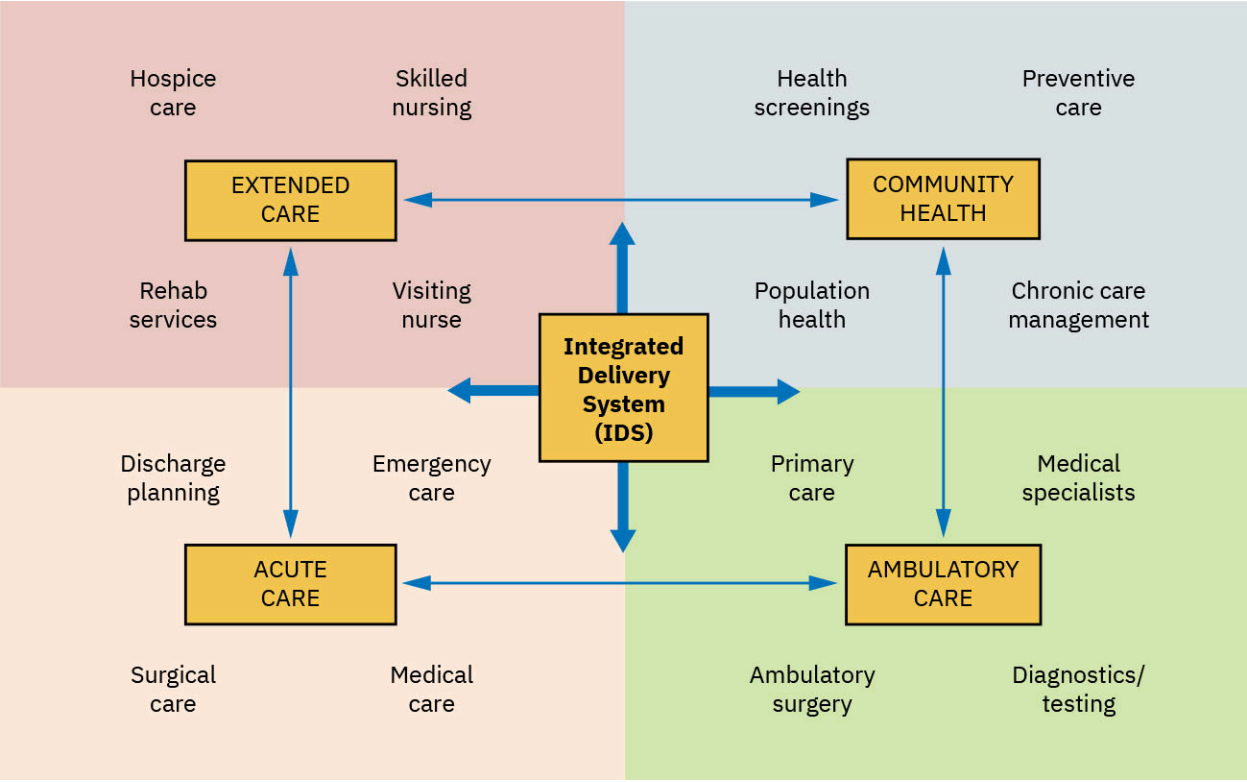

FIGURE 3.10 An IDS incorporates all aspects of the individual's health needs. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Nonfederal Hospitals and Systems

Many hospital groups include additional facilities and physician offices that function as IDSs. They provide primary, secondary, and tertiary care for individuals in their communities or networks. They share information through electronic health records that can be pulled up by any provider in the system to improve the quality of care throughout the healthcare process.

One example of a large, well-integrated hospital system is Kaiser Permanente. This large, NFP system includes 39 hospitals and 737 additional medical offices and facilities across nine states plus the District of Columbia (Kaiser Permanente, 2020). Patients can access care at whatever level they need—primary, secondary, or tertiary—through this one system.

Community Hospitals

Community hospitals include all hospitals that are not federal hospitals and offer both short-term and/or specialty care that is available to the general public (Yarbrough Landry et al., 2019). They can be public or private, for-profit, NFP, or state/local hospitals. While most **community hospitals** are part of IDSs, they may also be stand-alone hospitals without additional affiliated groups.

Federal Hospitals and Systems

The U.S. federal government does not run public hospitals that can be accessed by any citizen. However, it does run IDSs for several specific populations: the Veterans Health Administration (VHA), the Indian Health Service (IHS), and the U.S. military all have their own IDS structures run by the federal government, and eligible persons can receive any level of care they need within those IDS structures.

Veterans Health Administration
Established by Abraham Lincoln after the American Civil War, the VHA handles medical care for veterans of the U.S. armed forces. With 171 hospitals and 1,113 outpatient clinics, the VHA is the second largest IDS in the nation and treats nine million veterans every year (Falvey, 2023; VHA, 2023). VA facilities treat veterans and their family members who are covered under the medical plan, including those from all branches of the U.S. armed forces: Army, Navy, Air Force, Marines, and Coast Guard.

REAL RN STORIES

Working for the VHA

Nurse: Amalia, RN
Clinical setting: Acute care, supervision, and management
Years in practice: 24
Facility location: A small VHA medical center in the Northeast United States

I would like to share a story about my summer internship at a VA hospital on a medical-surgical unit. I was an older nursing student, in my 30s, with a husband and child. Both of my grandmothers had been nurses, and I was excited to follow in their footsteps. The summer before my final year in my RN program, I had the opportunity for an internship at the local VHA hospital. While I had never considered working at the VHA, it was the most amazing experience of my life. The patients and their families were wonderful, and I learned so much about what it means to be a veteran and have served our country. When I graduated nursing school, I was offered a position with the VHA and took it gladly. The benefits were great, so it was good for my family. Also, both of my grandfathers had served during WWII, and my father had served during the Vietnam War, so I wanted to give back.

Working for the VHA is unlike working for any other healthcare organization. Yes, we provide all the services you would expect from a large hospital group, from primary care to organ transplantation to long-term psychiatric care. But it is more than that. The mission of the VHA is to care for "those who shall have borne the battle." Being able to work with and provide this particular group of dedicated people with the care and support they need in times of crisis is truly a professional experience I cherish.

Indian Health Service
The federal government's involvement in health care for indigenous populations grew from the relationships developed between the U.S. government and tribal populations in the late 1700s. It is based on treaty agreements codified in Article 1, Section 8 of the U.S. Constitution. The IHS consists of 24 federally run and 22 tribally run hospitals, and numerous health centers, clinics, and treatment centers throughout the continental United States and Alaska (Falvey, 2023). It provides comprehensive care for 2.6 million American Indian and Alaskan Native people from 574 federally recognized tribes (IHS, 2020).

CULTURAL CONTEXT

Health Services for Urban American Indian People

Most IHS facilities are on or near reservations populated exclusively by American Indian and Alaskan Native people. But, in 1973, American Indian community leaders living off reservations and in urban areas became concerned about the health needs of American Indian people living in cities. In response, Congress passed a law expanding the IHS into urban environments with large groups of American Indian and Alaskan Native people. The Urban Indian Organizations are funded by the IHS and provide a variety of services including primary care, behavioral health, traditional healing and medicine, and social and community services (IHS, 2022).

Defense Health Agency
The Defense Health Agency integrates the medical services of the Army, Navy, and Air Force to provide comprehensive health care to members of the U.S. military and their families (spouses and children) all over the world. It includes over 400 hospitals, medical centers, and clinics worldwide. The Defense Health Agency provides

care for over 9.6 million active and retired military members and their families annually (DHA, 2023). Figure 3.11 shows the Landstuhl Regional Medical Center, the largest military hospital outside of the United States.

FIGURE 3.11 Landstuhl Regional Medical Center in Germany is the largest military hospital outside of the United States and supports military members and their families across Europe, Africa, and the Middle East (Landstuhl Regional Medical Center, 2023). (credit: "Landstuhl Regional Medical Center (2008)" by Landstuhl Regional Medical Center/Wikimedia Commons, Public Domain)

Providers

Healthcare providers include licensed practitioners who can legally diagnose conditions and prescribe medications, nursing care staff who care for ill or injured patients, and other support personnel. Licensed practitioners include medical doctors, doctors of osteopathic medicine, nurse practitioners, and physician assistants. Nursing staff and various allied health professionals support them (Vorvick, 2022). Like hospitals, licensed practitioners operate in a variety of practice types.

Independent Practice

An **independent practice**, also known as solo practice, is a medical office owned and run by a single physician who treats patients. The physician may be supported by other providers, such as nurse practitioners or physician assistants, and the office usually includes a small group of nurses and support staff (American College of Physicians [ACP], 2022). While most physician offices were once independent practices, their numbers are rapidly diminishing, down to approximately 20 percent of U.S. physician practices in 2013 (Yarbrough Landry et al., 2019) and down to 14 percent in 2020 (Yegian & Green, 2022). These changes are often due to the entire burden of the practice falling on a single physician as well as complications in arranging agreements with the myriad of health insurance companies (ACP, 2022). Plus, there is a large financial risk in independent practice, particularly when group practices often have better resources and enough physicians to provide on-call assistance for patients. Independent practices are most common in suburban and rural areas where there are fewer choices of providers for patients (ACP, 2022).

Single-Specialty Practice

A **single-specialty group practice** is currently the most common type of physician practice in the United States (Yarbrough Landry et al., 2019). In 2020, 42.6 percent of physicians in the United States were in this type of practice (Yegian & Green, 2022). In this type of practice, two or more physicians provide patients with the same category of care, such as primary care or specialty care (ACP, 2022). These group practices can be quite large and see much higher numbers of patients than independent practices. They often have multiple nursing and support

staff members. They may be owned by one or more of the physicians within the group or by outside agencies. Single-specialty group practices spread their responsibilities (such as seeing their patients who are hospitalized or responding to patients who need care after business hours) across multiple providers (ACP, 2022).

Multispecialty Groups

A **multispecialty group practice** includes multiple different specialties within one organization (ACP, 2022). For example, a multispecialty group might include primary care, pulmonology, general surgery, and physical therapy all in one location or in several related locations. Multispecialty groups are common in IDSs. They may be physician owned or owned by outside agencies. Approximately 26 percent of U.S. physicians work in multispecialty groups (Yarbrough Landry et al., 2019; Yegian & Green, 2022).

3.3 Barriers to Healthcare Access

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain how lack of access to health care impacts one's health goals
- Identify how cost can be a barrier to obtaining healthcare needs
- Describe how disparities in treatment are a disadvantage to the delivery of health care

Healthcare access is a patient's ability to get healthcare services such as primary, secondary, and tertiary care when and where they are needed. Although a wide range and variety of healthcare systems and facilities are available in the United States, barriers to care may prevent large groups of people from receiving the types of care they need (Agency for Healthcare Research and Quality [AHRQ], 2018a; Center for Health Ethics, n.d.). Recent changes to laws and the creation of new systems, such as the **Patient Protection and Affordable Care Act (ACA)**, have increased access. The goal of the ACA was to improve access to health insurance for Americans, offer subsidies to help pay for health insurance, and make health insurance more affordable. However, millions of Americans still lack necessary health care.

Barriers to health care may develop in a variety of ways. Some patients are unable to access healthcare services, some cannot afford them, and others experience lower quality treatment options. As you read, consider additional barriers to health care—ones that you can imagine or already know about.

Barriers to Using Healthcare Delivery Systems

Barriers to using healthcare delivery systems are often related to lack of **access**, or the ability to obtain healthcare services when and where patients need them (Huot et al., 2019). These types of barriers include geographical (where people live versus where providers are), timing (when providers are available versus when patients need them), and availability (having enough providers available and in practice for the patients who need them). Even the ability to access transportation can be a substantial barrier to using healthcare delivery systems. Other barriers include sociocultural issues, such as language, religion, and race or ethnicity. Together, these barriers can be as problematic for accessing health care as cost or lack of insurance (Rural Health Information, 2022).

Rural Areas

Individuals who live in rural areas may experience a variety of barriers to accessing the healthcare delivery system. People who live in rural areas are

- more likely to experience provider shortages;
- less likely to have insurance;
- more likely to have to travel long distances to receive care;
- more likely to work in jobs without paid time off work;
- less likely to trust healthcare professionals to give them quality care or to keep their issues private; and
- more likely to have limited **health literacy** (a patient's ability to understand instructions and education from their providers and be able to actively participate in their care) than other populations (see Chapter 4 Health, Wellness, and Community-Based Health Care) (Rural Health Information Hub, 2022).

These barriers may be experienced in all locations, but they are often magnified for those living in rural areas. Residents in rural communities may also experience difficulties in unique ways. For instance, recruiting medical personnel is more difficult in rural communities because these areas are far from popular community resources and

attractions. In addition, the rate of closure for rural hospitals is higher than for urban hospitals, particularly in the South. This results in a disproportionate impact on people who are socioeconomically disadvantaged and people of color. People who live in these communities then must travel farther than before for care. Lack of public transportation in rural areas can make the problem even more significant (Rural Health Information Hub, 2022).

PATIENT CONVERSATIONS

Assessing Health Literacy

The following is an example of a patient conversation related to health literacy. Note: newspapers are written at an average 8th- to 10th-grade reading level, and news magazines at a 12th-grade level.

Scenario: The nurse is trying to quickly assess Mr. Smith's health literacy and asks him questions about reading, education, and learning habits to know what types of education Mr. Smith will respond to best, and how information should be provided.

Nurse: Mr. Smith, can you please read me the information off your prescription bottle?

Patient: Diclofenac. It was ordered by my last doctor. It says take for pain twice daily.

Nurse: Do you like to read? What kinds of things do you read?

Patient: I don't read much, but I do like the Sunday paper.

Nurse: What was the highest level of school that you completed?

Patient: I got my GED and then finished a two-year college program in accounting.

Nurse: How do you like to learn? By reading about things, discussing them with someone, trying things out, or listening to someone talk to you?

Patient: If I am really interested, I'll look it up on Google or watch a video on YouTube.

Scenario follow-up: Identifying a patient's health literacy is a crucial part of patient assessment and is always the responsibility of the nurse prior to educating. If patients are not provided health information and education in a way that they understand, they will not be able to make informed decisions about their own care. While there are some complicated assessments, there are also some simple techniques such as those the nurse used in this conversation to establish a baseline.

Healthcare providers are more likely to work in urban areas than rural areas. This is most true for specialist providers, such as mental health professionals, surgeons, and/or tertiary care providers, but it is even the case for primary care provider (PCP) (AHRQ, 2018c). Table 3.8 offers a snapshot of the differences between percentages of the U.S. population by location as compared to the percentages of primary care providers. For all areas other than urban centers, there is a lower number of PCPs for areas with smaller populations.

Geography	Percentage of Practicing Primary Care Physicians (%)	Percentage of U.S. Population (%)
Urban (population >50,000)	89	80
Large rural (population 10,000–50,000)	7.1	10

TABLE 3.8 **Primary Care Physicians by Geographic Location** (Source: AHRQ, 2018c.)

Geography	Percentage of Practicing Primary Care Physicians (%)	Percentage of U.S. Population (%)
Small rural (population 2,500–9,999)	2.6	5
Remote rural (population <2,500)	1.3	5

TABLE 3.8 **Primary Care Physicians by Geographic Location** (Source: AHRQ, 2018c.)

The problem of supplying access to health care in rural areas is not just a challenge in the United States; it is a worldwide problem. Several reasons account for physicians choosing urban or large rural locations. Access to good school systems, art and cultural activities, and proximity to modern hospital systems are among the many reasons that physicians seem to prefer urban positions. Last, rural areas do not have as many sites for physician residency in the same way that urban areas do (McGrail et al., 2020; Szafran et al., 2020).

Restricted Daytime Hours

The **restricted hours** (e.g., Monday through Friday, daytime only) at physician offices and clinics are frequently named as a barrier by patients who need to seek care or those who have to have regular treatment visits (Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health [OASH], 2022). Most working adults are at work or children are at school during the same times that physician offices are open. While restricted hours remain a problem, particularly with the ability to receive secondary or tertiary care and in rural areas, the larger medical community is responding with a variety of strategies:

- extended hours (seeing patients after 5 p.m. and/or before 8 a.m.) at doctors' offices, clinics, mental health centers, and providers, such as physical therapy;
- convenience care clinics with weekend or extended hours affiliated with large group practices;
- urgent care clinics unaffiliated with large group practices with extended hours and the ability to provide some primary care as well as acute management of mild to moderate illness and injury; and
- virtual visits where patients can use their smartphones, tablets, or computers to meet with a healthcare provider online.

Transportation Issues

Lack of transportation or limited transportation is one of the primary reasons (other than cost) that patients miss scheduled appointments or do not seek care until they are very sick (OASH, 2022). Some areas, generally urban ones, have transportation services that assist patients in getting to appointments; however, they may not be able to afford to use them as there can be a substantial cost involved. Additionally, public transportation for patients with disabilities can be quite complicated, particularly when they must walk to a train or bus stop or when they need assistance entering and exiting vehicles. During the COVID-19 pandemic, the regular concerns of patients with disabilities who have to use public transportation were exacerbated by shelter-in-place orders, and they had additional difficulties gaining assistance with getting into and out of transport vehicles, if they could obtain transportation at all (Cochran, 2020). For patients in rural areas, transportation issues can be even more difficult to overcome because public transportation is often unavailable, and they must rely on their own vehicles (if they have them) or the availability of family or friends to assist in getting them to appointments. Also, their appointments may be at a great distance from their home, particularly if they are seeing specialty or tertiary care providers.

Provider Shortages

Not having enough providers for a given population, or **provider shortage**, is a severe problem throughout the United States. In response to these shortages, the federal government has designated certain "Health Professional Shortage Areas" (HPSA) (Health Resources and Services Administration [HRSA], 2022) based on geographic areas, specific populations (such as people who are migrant workers or who are without homes), or facilities (such as mental health or public hospitals). In 2021, nationwide there were 8,160 federally designated HPSAs needing primary care practitioners; 7,192 HPSAs needing dental health providers; and 6,464 HPSAs needing mental health providers (HRSA, 2022). Figure 3.12 provides a graphic representation of the numbers of HPSAs in the nation and the severity of their need.

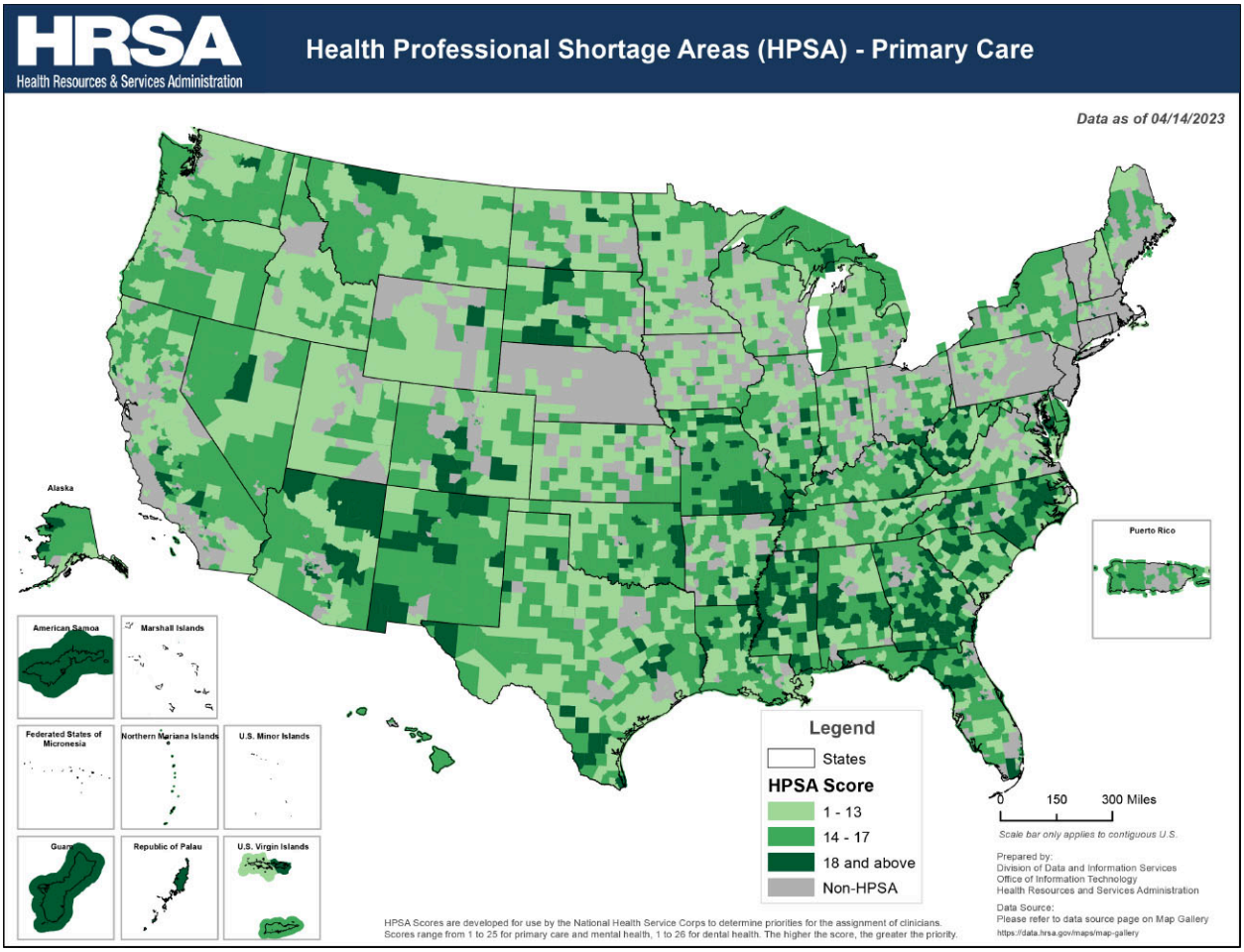

FIGURE 3.12 HPSAs occur all over the United States in both rural and urban communities. The darker the color, the greater is the need for primary care providers. (credit: "HPSAPC" by Health Resources & Services Administration, Public Domain)

LINK TO LEARNING

The HRSA has several tools to find shortage areas (https://openstax.org/r/77HRSAShortTool) and details about them. Check out your own address to see if shortages exist in your area.

Barriers Due to Healthcare Costs

Healthcare costs impact both Americans who have health insurance as well as those who do not (Montero et al., 2022). Regardless of their insurance status, almost half of adult Americans report difficulties affording their healthcare costs, and almost 40 percent have either delayed or not gotten needed medical care (Montero et al., 2022). Further, approximately a quarter of adults report not filling prescriptions, taking less than full doses, or skipping doses due to the costs of medications.

Congress enacted the Patient Protection and ACA in 2010 with several goals (Assistant Secretary for Public Affairs [ASPA], 2022):

- Make insurance more affordable for individuals who fall between 100 and 400 percent of the federal poverty level (an income measure determined annually by the government).
- Expand Medicaid insurance to cover all adults below 138 percent of federal poverty level.
- Support overall changes to healthcare delivery which would lower costs while maintaining or improving care.

By 2023, almost 16 million people were using ACA plans nationwide, and as Figure 3.13 shows, there has been a clear decrease in overall healthcare costs (Centers for Medicare and Medicaid Services [CMS], 2023).

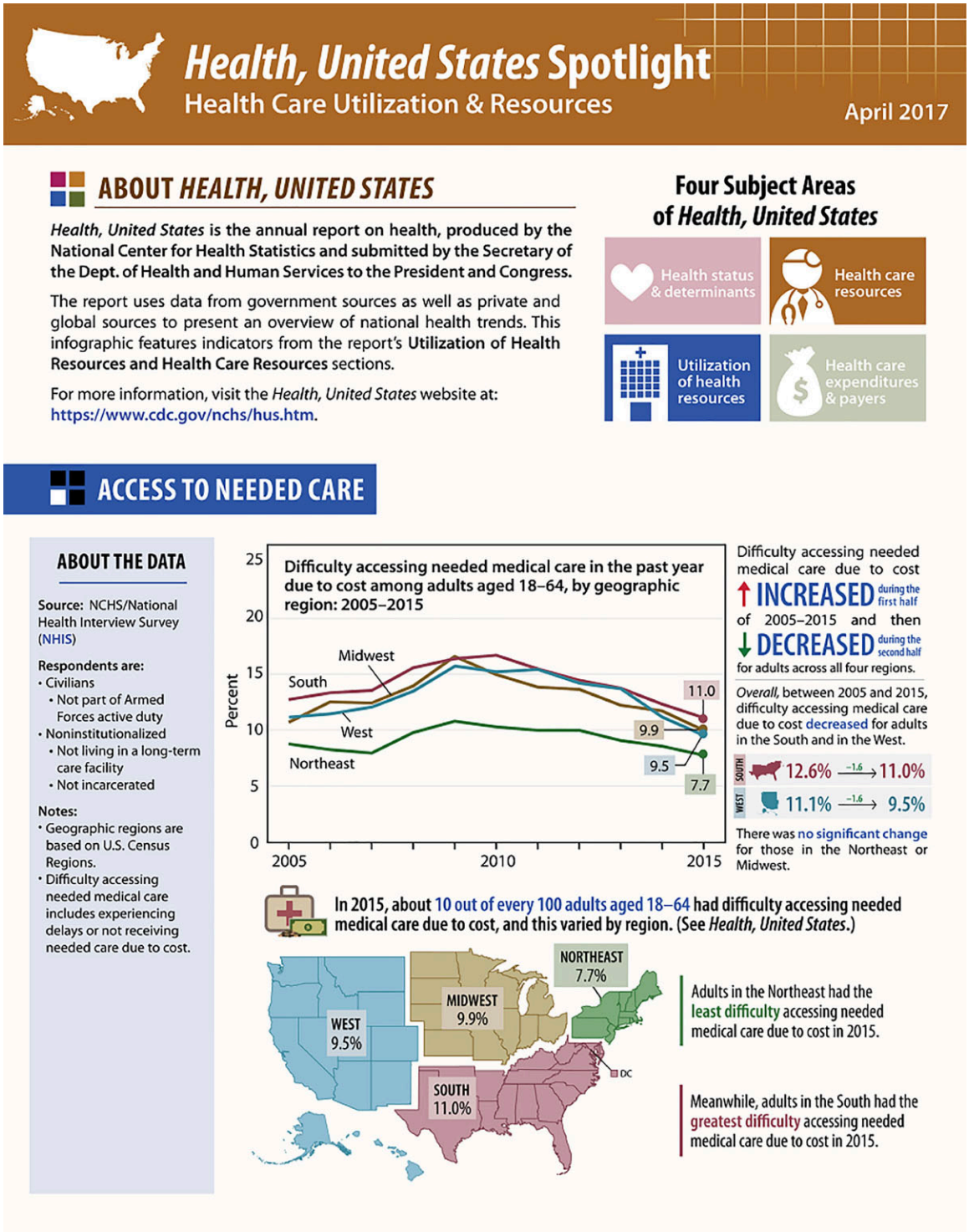

FIGURE 3.13 The Centers for Disease Control and Prevention is one of the public health agencies active in tracking and improving access to health care nationally. This infographic shows improvements that have been made to access to care over time; however, there is still room for further improvement. Access to care must remain a priority across the United States. (credit: work by Centers for Disease Control and Prevention, Public Domain)

Despite the introduction of the ACA, over 40 percent of people still admit to having **healthcare debt**, in one of several forms:

- past due or unable to pay;
- paying off over time to a provider;
- paying to a bank or collection agency (when the provider has sold old debt);

- paying to a credit card or revolving credit account (with interest, so paying more); or
- paying to a friend or family member from whom the money was borrowed.

Such medical/dental debts can be a financially harmful issue after a critical health event, even for those with insurance, and almost 60 percent of people worry about the effects of unexpected medical bills (Montero et al., 2022).

LINK TO LEARNING

Dental care is the most common type of medical care for patients to delay due to cost (Montero et al., 2022). However, many patients do not realize how important dental health is to overall health. Explore the Mayo Clinic's web page on oral health (https://openstax.org/r/77OrlHealthMayo) to see the importance of dental health to overall health and consider why it is concerning that so many people cut costs with their dental health.

Having Insurance

Simply having insurance is not enough to prevent financial concerns and difficulties accessing health care related to costs. Between one-third and one-half of Americans with insurance worry about whether they can pay for their **premium** (the amount of money they pay each period to subscribe to their insurance) or afford their **deductible** (the amount of money someone with insurance must pay a provider before the insurance begins paying) (Montero et al., 2022). Also, dental and vision insurance are often not provided as part of the medical insurance package, so individuals have to either buy separate plans for dental and/or vision or pay out of pocket for these services.

Lack of Income for Public Health Insurance

In 2021, 21.7 percent of Americans were on some type of public health plan such as Medicaid, Medicare, military plans, or the Children's Health Insurance Program (Adjaye-Gbewonyo & Boersma, 2022). Unfortunately, these programs may not cover all types of services. For example, Medicare does not cover hearing, dental, or prescription drugs (Montero et al., 2022). Patients are required to either pay out of pocket for supplementary plans that cover what the public health insurance does not cover or pay for the services themselves. For patients who are on fixed incomes (such as those who are retired or on disability), such services may be impossible to afford.

Uninsured

Since the ACA marketplace for subsidized insurance went into effect in 2013, the uninsured rate has decreased significantly for all age groups and ethnicities in the United States (AHRQ, 2018a). However, in 2021, 13.5 percent (approximately 30 million people) of adults over 18 years old in the United States still did not have health insurance (Adjaye-Gbewonyo & Boersma, 2022). These individuals are less likely than any other group to receive medical care and are more likely to be sicker and die younger (Adjaye-Gbewonyo & Boersma, 2022).

Barriers Related to Disparities in Treatment

There are also barriers to care that cause **disparities** (differences that negatively impact one group over another) in treatment between groups. Disparities can be caused by factors **intrinsic** (related to personal thoughts, values, and beliefs) to patients and providers or **extrinsic** (related to conditions outside of the individual, systemic issues) to the system as a whole. Intrinsic factors can include patient distrust in healthcare providers, so-called white-coat syndrome, and lack of education about the importance of primary care. Extrinsic factors can include systemic racism and infrastructure.

Distrust in Healthcare Providers

Distrust in healthcare providers, an intrinsic factor, can arise for many reasons, including previous negative interactions; anxiety about working with a provider of a different race, ethnicity, or gender; and poor health literacy (OASH, 2022). When a person's previous experiences have been poor, it can be difficult to believe that another provider will be any different. Race, ethnicity, and gender concerns may be related to cultural norms, language barriers, or lack of similar life experiences. Poor health literacy can compound all these issues. Individuals with poor health literacy may feel that the provider is being untruthful because they do not understand what the provider is saying.

LINK TO LEARNING

Medical mistrust is a significant barrier to effective healthcare delivery and equitable health outcomes. Among Black Americans, historical and ongoing experiences with systemic racism, unethical medical practices, and inadequate healthcare contribute to a heightened level of mistrust in the medical system. Explore a comprehensive analysis of medical mistrust among Black Americans (https://openstax.org/r/77medmistrust) and strategies for addressing it in this article. Addressing this mistrust is crucial for improving healthcare access, adherence, and overall health outcomes in this community.

White-coat syndrome is another example of an intrinsic barrier to effective treatment. White-coat syndrome is when a patient experiences elevated anxiety and mistrust related to working with a healthcare provider. When interacting with a provider, particularly a new one, a patient's vital signs may be altered, such as elevated blood pressure. White-coat syndrome can happen even to healthcare professionals themselves. It speaks to an internalized anxiety or mistrust related to health care of which patients may be unaware.

REAL RN STORIES

Anxiety Impacting Treatment

Nurse: Lashonda, RN
Clinical setting: Primary care office
Years in practice: 8
Facility location: Midwest United States

A few years ago, we had a new 50-year-old male patient come into our primary care office. I felt so badly for Mr. Jones. When he first came to us, he was very anxious. He had a lot of pain that had been getting worse for years, and it greatly impacted his quality of life. I asked him why he had not come in sooner. He said that he never could take time off work and that doctors had addicted his father to pain medicine and then had cut him off and stopped prescribing the pain killers. Shortly after, his father died by suicide because of his pain. Mr. Jones wanted help with the pain, but he was afraid to take opioid pain killers. He did not think that there were any other treatments available to him.

Our provider saw him and did some x-rays. She provided Mr. Jones celecoxib and a round of steroids to help with the inflammation. She recommended physical therapy, and Mr. Jones agreed to go.

When he came back for his follow-up visit, Mr. Jones was like a new man. He was able to stand and move with much less pain. Both the physical therapy and the medication were helping him feel better than he had in years. He told me that if he had just understood, he would have gotten help sooner.

Lack of Education

Moving in tandem with issues of health literacy is lack of education regarding the importance of primary care, preventive screenings, and even acute care needs (OASH, 2022). Once they no longer have annual well-child physicals for immunizations, many individuals (particularly those in their 20s to 40s) do not see a physician unless they are ill or injured. The segment of the population who is in generally good health and/or those with poor health literacy frequently do not recognize the value of seeing a primary care physician. These individuals are often the ones who enter the healthcare system at the secondary or tertiary level when they are struck by an emergency. Additionally, many people are unaware of treatments and services available to them, so they do not seek care (OASH, 2022).

Racial Disparities

Despite many initiatives to decrease racial disparities in health care throughout the nation, they remain. These extrinsic disparities are deeply embedded in the culture and healthcare system of the nation. For example, in 2013, 14.6 percent of Americans were unable to get care when they needed it because it was unavailable; however, there were significant differences among races (19.8, 19.2, and 13.2 percent of Black, Hispanic, and White persons,

respectively) (AHRQ, 2018a). While the rates of uninsured Americans are decreasing among all three groups due to the ACA, Black and Hispanic persons remain significantly less likely to be insured than White persons (Baumgartner et al., 2023). Also, while over 80 percent of White and Black adults report having a PCP, only 65.7 percent of Hispanic adults have a PCP (Baumgartner et al., 2023). Despite efforts of the Indian Health Service and tribal organizations, American Indian and Alaskan Native people have higher rates of many common conditions (such as diabetes and rheumatoid arthritis) and are more likely to die from them than other Americans (AHRQ, 2018b).

3.4 Culture

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the current culture of health care
- Describe how collaborative culture is integrated in health care
- Identify ways to incorporate a culture of safety

A set of values, beliefs, behaviors, language, symbols, and practices shared in common by a group of people is **culture**. A person can be part of multiple cultures (known as a **subculture**) or multiple groups of people with whom they share core ideologies. Cultures can be bound together based on ethnicity, nationalism, regionalism, religion, interests, age, and so on. Consider Lydia, a 20-year-old U.S. college student who lives on campus and is from the Deep South. Lydia is active in women's rugby and tabletop gaming (like Dungeon and Dragons), identifies as nonbinary and bisexual, and has autism. Lydia identifies with multiple cultures and shares beliefs, behaviors, values, language, and symbols with other Southerners, college students, members of Generation Z, the LGBTQIA+ community, gamers, rugby players, and people with autism.

Health care has its own culture, and different organizations develop different types of healthcare cultures. Healthcare professionals practice within various healthcare cultures and subcultures which they internalize. The first of these is a professional culture based on the healthcare practitioner's discipline (think physician versus nursing versus physical therapy). This type of healthcare culture acquisition begins in school. For example, someone in a nursing program and reading this textbook is beginning to take on the culture of nursing.

There are several aspects of healthcare culture including general healthcare culture, how organizations express culture at a system level, and some planned and targeted strategies to purposefully develop organizational culture, such as a culture of safety and a culture of collaboration. As you read, visualize yourself as the nurse you want to be and consider how culture might impact your nursing practice.

Culture of Health Care

Different healthcare professions each have their own culture as do individual healthcare agencies. The beliefs, attitudes, and shared symbols expressed by the agency create a unique internal culture that shapes the behavior of the entire staff from the healthcare professionals to the **ancillary staff** (staff employed by the agency who are not directly responsible for caring for patients, such as housekeepers and administrators). An agency expresses its culture through its mission and vision statements, policies, procedures, and rules (Bayot et al., 2022). The resulting culture provides structure for how various healthcare professionals work together *at that agency* to care for patients and maintain the environment (Bayot et al., 2022). There is an old saying in nursing: if you have worked at one hospital, you only understand how to work at one hospital because they are all different.

LINK TO LEARNING

The Veterans Health Administration (VHA) is very clear about their core cultural values. The I CARE core values (https://openstax.org/r/77ICARECore) of Integrity, Commitment, Advocacy, Respect, and Excellence offer a clear picture of their organizational culture.

Organizational Culture

The shared beliefs, thoughts, symbols, and attitudes of an organization shape its **organizational culture**. Healthcare organizations can be further understood as multiple subcultures united by a set of core beliefs and values (Mannion & Davies, 2018). Consider the I CARE core value of Advocacy shared in Link to Learning. The subculture of VHA

intensive care unit nurses may result in their being very actively engaged in advocating for patients who are critically ill and need treatment changes quickly. By contrast, nurses on the acute medicine unit may be more relaxed in their advocacy and follow a chain of command that moves through their charge nurse because they are not performing immediate life and death treatments. Both sets of nurses advocate for their patients but do it in different ways based on the culture of the specific units on which they work.

While organizational cultures can be positive and support high-quality patient care and environments at all levels, they can also become negative (Mannion & Davies, 2018). When agencies do not follow their own mission and vision statements or create environments in which staff cannot perform to the unrealistic expectations of those cultural parameters, staff may become disillusioned. As a result, interdisciplinary (involving more than one discipline, such as medicine and nursing) communication and cooperation may decline, and overall patient care may suffer as a result.

Patient-Centered Culture

Organizations can make systemic changes that foster positive healthcare cultures, but they must be intentional in these changes to achieve their preferred outcomes for the organization and patients alike. One example of an organizational cultural change is the shift to patient-centered care (PCC) (Figure 3.14). Until the early 2000s, most healthcare culture was very provider driven and disease focused; providers diagnosed problems and told the patient what to do, and the patient was expected to do it or else the fault was the patient's (Bokhour et al., 2018). The patient's own cultural beliefs, abilities, resources, and desires were generally not considered. While this older model remains common, particularly in secondary and tertiary settings, PCC is an alternate model that many agencies follow (Bokhour et al., 2018).

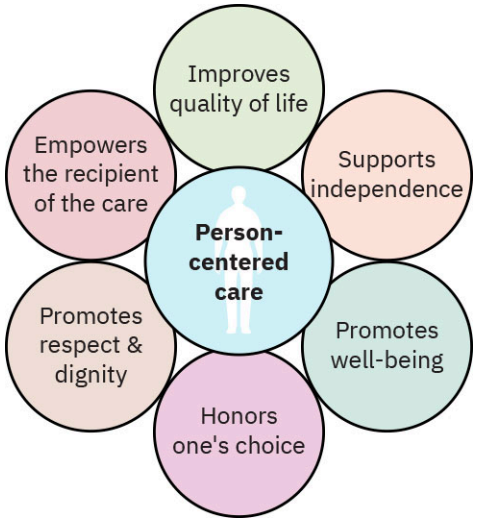

FIGURE 3.14 In PCC, the patient rather than their disease is at the center of the care activities. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Patient-centered care focuses on relationships and partnerships between providers and patients. Rather than focusing exclusively on a specific disease or condition, in PCC culture, providers engage the patient in a conversation about their health, listen to patient concerns, explain treatment options, make recommendations, and educate the patient so that they can understand the potential outcomes. Then the healthcare provider allows the patient to make decisions that they are most comfortable with based on the patient's beliefs and values, available resources, and abilities (Bokhour et al., 2018; Kamrul et al., 2014). Developing a PCC culture presents a change from traditional medical culture and requires careful attention and planning from the administrative level down to the frontline staff in agencies. However, PCC culture has been proven to positively affect patients' experiences, outcomes, trust, and overall healthcare management (Bokhour et al., 2018).

Culturally Competent Care

A core part of PCC is **culturally competent care**, ensuring that providers and organizations work with patients in a way that is responsive to cultural differences and adapts to fit a patient's needs (Kamrul et al., 2014). There are eight main principles of culturally competent care:

- critically examining one's own culture and the values and beliefs they hold;
- recognizing prejudice or racism in agencies and oneself;
- engaging in activities that expand one's thinking about other cultures;
- learning about the various cultures served by the facility;
- connecting with patients and families to learn more about their culture and culture needs;
- exploring the ways patients and their families understand their conditions and treatment;
- developing relationships with patients and their families based on trust and characterized with openness and willingness to accept their differences; and
- fostering spaces that reflect the diversity of the local community (Kamrul et al., 2014).

Providing access to medically certified interpreters (often via telephone) to ensure that patients who are not native English speakers receive the information they need is an example of a form of cultural competence. Another example of culturally competent care would be allowing a family to bring religious or cultural items or icons to place around a patient's hospital bed if they do not interfere with necessary medical equipment.

Collaborative Culture

Once upon a time, "doctor" was synonymous with "god," nurses did not support one another, and healthcare agency departments vied for resources and did not communicate with each other. There were **silos** (barriers to communication and efficiency) within the medical system and between organizations based on discipline, hierarchy, or ineffective communication (Kelly et al., 2019) (Figure 3.15). Each group focused on their need to do their jobs most effectively without considering other disciplines, the health of the whole patient, or the overall functioning of the agency (JONS, 2017). This can also be described as task-oriented versus patient-centered or holistic health care. Disciplines were divided into silos, such as medicine (doctors), nursing, radiology, dietary services, physical and occupational therapy, and even housekeeping. All struggled to communicate and collaborate with each other. Leadership was also divided into silos with distance and struggle among disciplines. Patients were separated from those who cared for them. The costs—for patients (satisfaction and outcomes), practitioners (morale and resources), and agencies—were steep (Sperling, 2020).

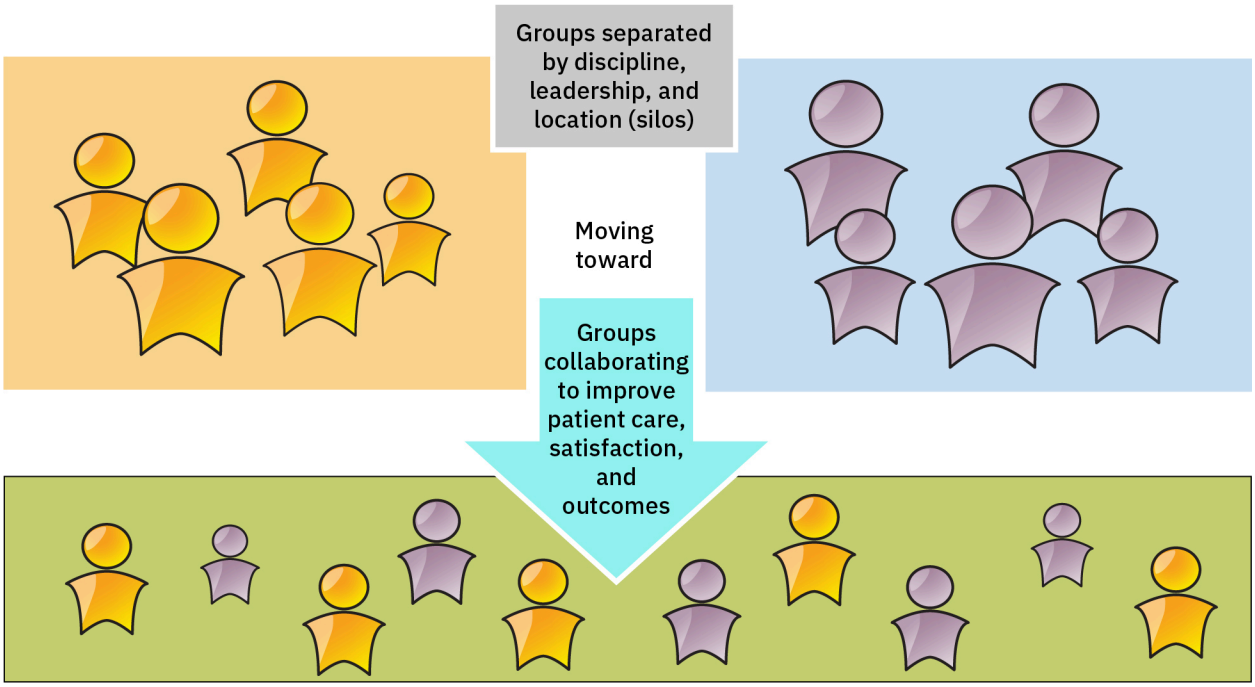

FIGURE 3.15 Moving from groups separated by discipline, leadership, and location to groups that collaborate regardless of discipline, leadership, or location improves patient care, satisfaction, and outcomes for all participants. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The solution to the problems that healthcare silos generate is the development of a **collaborative culture**, which has become a core measure in evaluating health care (Wei et al., 2019). Arising out of the PCC movement, collaborative culture in health care focuses on bringing disciplines together to work as a team in identifying common

goals, resolving issues, and improving patient-centered care (Goldsberry, 2018). Collaborative culture involves partnering with and communicating with patients to ensure they receive the most effective care when and how they need it. Collaborative culture moves beyond simple teamwork to ensure that different disciplines recognize and acknowledge the skills, abilities, and innovation that other disciplines bring. In that way, everyone's contributions can be maximized to supply efficient, high-quality care (Goldsberry, 2018). The use of technology, such as e-health records and computers, also allows greater communication and collaboration between agencies or practices (Goldsberry, 2018).

Continuity of Care

An important component of a collaborative culture is **continuity of care**. The principal goal of continuity of care is health care provided in a thoughtful fashion without breakdowns in communication throughout the healthcare experience and regardless of the number of involved practitioners (Bakerjian, 2022). With continuity, patients have the same providers over time and develop relationships with them. When patients are transferring between providers or locations, clear hand-off reporting is performed to ensure the providers taking over the care understand the patient's health, needs, and desires. Continuity of care also encourages patient safety (Rhode Island, Department of Health, 2019).

For nurses, continuity of care is often seen in hospital settings. For example, assigning a nurse to the same group of patients for each shift provides continuity of care. Nurses who have regular interaction with a patient are more likely to develop the relationships needed in a collaborative culture setting. They get to know their patients, can more rapidly identify changes, and are more comfortable providing patient advocacy.

LINK TO LEARNING

Continuity of care is expansive and intrinsically connected to both PCC and primary care. This short video on continuity of care (https://openstax.org/r/77ContCare) describes it and how it links to many topics covered in this chapter.

Care Coordination

Another component of collaborative culture that highlights the sharing of information between disciplines to provide orchestrated care to patients is **care coordination**. Care coordination ensures that testing is not repeated between agencies, medications are not duplicated, and treatments are not utilized by one provider that will make a different condition worse (Agency for Healthcare Research and Quality [AHRQ], 2018). A **care transition** (movement among physicians, hospitals, care providers) offers a common place where many patients experience failure in their care. Care transitions are common situations in which care coordination becomes important (AHRQ, 2018).

LIFE-STAGE CONTEXT

Care Coordination for Older Adults

People age 65 years or older often require higher levels of care coordination than those under 65 years. For example, older adults are 2.5 times as likely to be hospitalized as those between 45 and 64 years old. They are also more likely to experience several chronic illnesses, each requiring its own health provider, to take multiple medications (38 percent of those over age 65 years take more than five medications daily), and to move between care settings, such as physician's office, hospital, and skilled nursing facilities.

The gold standard of care coordination for patients over age 65 years with complex medical, psychological, and/or social needs is a geriatric interdisciplinary team (a group of practitioners who work collaboratively to coordinate care across disciplines and locations). The team may be at a single location (such as a multidisciplinary practice) or communicate electronically between separate locations. The geriatric team ensures safe transfer between practitioners and locations, guarantees the most qualified provider manages each issue, safeguards the patient against duplicated services, and ensures the patient receives comprehensive care. When this type of interdisciplinary team is unavailable, the same group of patients can be managed by strong primary medical homes,

in which their primary practitioner is skilled in geriatric primary care and able to coordinate their services across secondary and tertiary settings.

Patients and caregivers should be involved in group meetings, as appropriate, and asked about their preferences in terms of end-of-life care and pain management, nutritional plans, and treatments. Caregivers should be encouraged to speak openly about their abilities to provide care and their need for resources to do so. Treatment plans should align with those preferences and abilities and demonstrate respect for the patient's culture and ideals (Bakerjian, 2022).

Culture of Safety

Healthcare settings are inherently dangerous for patients. There are many places and circumstances within healthcare systems that can jeopardize the safety of patients and/or staff members (AHRQ, 2019a). Providers can give incorrect diagnoses based on the information they have or symptoms they do not see (such as strokes or heart attacks, particularly for women). Nurses can administer incorrect medications because the medications look alike/sound alike (such as Celebrex versus Celexa) or can give an incorrect dose (such as 1 mg instead of 1 mcg). Communication breakdowns between patients and providers or among providers can result in patients receiving incorrect care.

Historically, making errors resulted in punishment for those who made them and led to a culture of secrecy around reporting errors and taking responsibility for patient safety (AHRQ, 2019a). In the early 2000s, the Institute of Medicine put forth a plan to improve safety in health care through the acknowledgment that errors are going to happen and the recognition that safety can be improved by developing plans to prevent errors and to learn from them when they are made (AHRQ, 2019a). From this new approach to error prevention, the culture of safety was born.

The culture of safety is a planned cultural change that must begin at an organizational level (AHRQ, 2019a). It includes the following:

- shared values and goals between leadership and frontline staff;
- no fear of reprisals for errors (to promote honest reporting);
- in-depth exploration into the reasons for errors in order to develop strategies to prevent them in the future; and
- promoting safety through educating and training.

Nurses play a critical role in a culture of safety and are on the front line of most patient care interactions, even when they are not the primary prescribers of treatment. Nurses should always engage in open communication to promote safe patient care. The culture of safety is one of the backbones of the quality and safety education for nurses on which nursing curricula and licensing examinations are built.

Going hand in hand with the culture of safety is the idea of **just culture**, an organizational principle that fosters open and honest reporting of error and balanced accountability and encourages systemic examination to prevent errors in the future. Use of just culture concepts was endorsed by the American Nurses Association (ANA) in 2010 (Congress on Nursing Practice and Economics, 2010). In a just culture, there are three ways to explain medical errors or potential medical errors (Paradiso & Sweeney, 2019):

- *Human mistakes*: These are legitimate errors—unintentional errors while trying to act in the best interest of the patient. Comfort and coach the individual who made the error and seek additional education if necessary.
- *Risky behaviors*: These are often related to work-arounds to intentionally circumventing rules, but with the intention of providing good care for patients. Provide coaching and systemic investigation into why work-arounds or risky behaviors are perceived by staff as more appropriate than acting per policy. Examine whether the system is also at fault and if the policies should be modified to provide better care.
- *Reckless behavior*: These are actions or behaviors that do not intend to provide or care about providing appropriate care for patients. These types of behaviors may be grounds for serious disciplinary action.

LINK TO LEARNING

This video on just culture (https://openstax.org/r/77JustCulture) offers an excellent snapshot of the just culture philosophy.

Quality Improvement

Quality improvement is an important component of a culture of safety. The likelihood that health services will improve patients' health outcomes in a way that is consistent with current knowledge is **healthcare quality** (Centers for Medicare and Medicaid Services [CMS], 2021b). A framework designed to continually improve patient care and outcomes is quality improvement (QI).

Quality improvement is made through a variety of mechanisms, and agencies are continually engaging in quality improvement activities. One common quality improvement tactic is the Plan-Do-Study-Act (PDSA) strategy (Figure 3.16) (AHRQ, 2020).

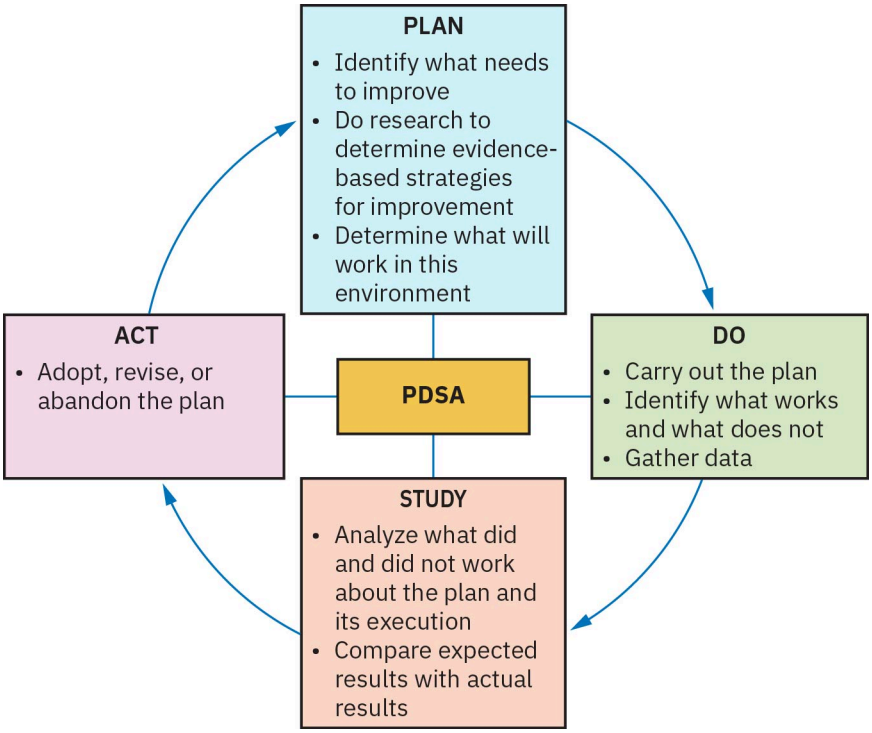

FIGURE 3.16 The PDSA technique for quality improvement can be used in any healthcare setting and is often used for nurse-driven healthcare improvements. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Accountability for Safe, Reliable, Effective Care

In a healthcare environment that encourages a culture of safety and continuous quality improvement, there has been a move toward reliable, consistent care. There are many industries (particularly manufacturing) that function under hazardous conditions (such as aviation or power plants) and still produce products or services in a consistent fashion while keeping higher safety standards than health care. While industrial practices cannot be transferred entirely to health care, the emphasis on process refinement, consistency, and reliability have become components of today's healthcare culture. Effective and safe provision of care is **high-reliability health care** (AHRQ, 2019b). High-reliability organizations (HROs) provide complex health care for long periods of time without serious incidents or poor patient outcomes related to errors (AHRQ, 2019b). HROs are characterized by a strong culture of safety, continuous quality improvement, and hospital leadership that is willing to provide support and resources for safety and quality (Table 3.9) (AHRQ, 2019b).

Characteristic	Rationale
Heightened focus on failure or near failure	Forces staff to become vigilant, to prevent failures before they occur, and to learn about systemic issues when failures or near failures occur
Refusal to simplify the steps	Health care is complex and dynamic; developing shortcuts in procedures can breed errors
Recognize the larger picture	Recognize how one's work in an area impacts the larger system, for example, taking a patient for imaging without notifying the imaging center or recognizing the imaging center has its own schedule to maintain
Recognize the knowledge of the front line	Understand that the people closest to patients or a given situation have knowledge and insights that are valuable to the larger agency, and those individuals should be involved in quality and safety conversations and improvement
Teach resilience	Recognize that failures are always possible and practice managing and responding to them

TABLE 3.9 **Characteristics of High-Reliability Health Care** (Source: Based on AHRQ, 2019b.)

Pay for Performance

A payment model that ties either bonuses or additional costs to providers based on their performance over several metrics including best practices and patient satisfaction is **pay for performance (P4P)** (NEJM Catalyst, 2018). It contrasts with standard payment, which is **fee for service (FFS)**, payment for each service provided. The goal of P4P is quality over quantity with the hope that practitioners will use best practices to improve health outcomes while reducing overall healthcare costs. While there is some evidence that P4P is working in some places, it is still a fairly new concept, and its real potential has not yet been recognized. There is some evidence that the gains have been minimal, and it may negatively impact poor and marginalized patients because providers have less incentive to treat them. However, P4P is expected to remain important in health care and over time with appropriate adjustments to the structures will improve healthcare quality and outcomes for all patients (NEJM Catalyst, 2018).

Value-Based Purchasing

The CMS has introduced **value-based purchasing** programs specifically for hospitals and skilled nursing facilities (SNFs) (CMS, 2022). Value-based purchasing looks very much like pay for performance, and some writers speak of them synonymously (NEJM Catalyst, 2018). In the case of SNFs, CMS holds back 2 percent of their Medicare payments until the end of the year. Then they receive up to 60 percent of those payments back as long as their 30-day readmission rate (number of patients who are discharged from the SNF but readmitted for any reason to an acute medicine facility within 30 days) falls below Medicare's threshold (CMS, 2023). The program for hospitals is similar to that for SNFs but includes additional measures including mortality and complications, healthcare-associated infections, patient safety, and patient satisfaction (CMS, 2021a).

Summary

3.1 Levels of Care

Patients move through primary, secondary, and tertiary levels in the healthcare system throughout their lifetimes. Most patients spend most of their lives seeing practitioners at the primary level. At this level, basic preventive and curative care is provided, patients receive regular screening, immunizations, wellness care, and sick care. When a patient needs a higher level of skill, knowledge, or diagnostic capability than what a primary care physician can provide, they move to the secondary health care level. Secondary health care occurs in hospitals, specialty clinics, and therapeutic facilities and is provided by medical, mental health, and allied healthcare professionals who have specialized education beyond the scope of the primary practitioner. When patients have traumatic injuries, require extensive surgeries or treatments, have rare conditions, or are critically ill, they move to tertiary care. Most tertiary care is performed in large hospitals designed to treat and manage severe and unusual conditions and injuries. Some care is performed in smaller specialty clinics such as dialysis or substance abuse treatment centers.

3.2 Organizational Frameworks and Structure

Healthcare systems can be arranged and understood in a variety of ways. First, healthcare systems can be described through economics and critical need, in terms of for-profit, NFP, and state/local hospitals. Second, they can be defined based on how they are managed and what their responsibilities include: public versus private health care. Finally, they can be illustrated through the relationships they have with other facilities, physicians, and agencies as systems that provide integrated health care.

3.3 Barriers to Healthcare Access

There are many barriers to a patient's ability to access health care. No matter where a patient lives or who they are, at some point in their lives, they may have difficulty with access to varying levels. It is incumbent on the healthcare community to be aware of and work toward taking down these barriers. Geography, time, transportation, and availability of providers all impact patients in ways out of their control. Healthcare costs can be a substantial burden for all people, even those with insurance, but they affect the uninsured most profoundly. There are also disparities related to knowledge, education, racial background, and mistrust of medicine and medical providers that are barriers preventing patients from receiving the care they need.

3.4 Culture

Health care has its own culture that has moved from being organized by discipline to being focused on collaboration. Further, it has shifted from being focused on diseases and conditions to being patient centered and holistic. These changes do not happen automatically and are generally due to systemic decisions that encourage improved communication, relationships, and engagement between disciplines and patients. Alongside the movement for PCC has been an increased focus on safety and a shift from a model of blame to a model of planning, management, learning, and continual quality improvement.

Key Terms

access the ability to obtain healthcare services when and where they are needed
Beveridge model single-payer national health service
Bismarck model social health insurance model
cardiologist secondary provider who specializes in heart-related conditions
charity care free or discounted healthcare provided to individuals who are uninsured or underinsured
community hospitals all hospitals that are not federal hospitals and offer both short-term and/or specialty care available to the general public
deductible the amount of money a patient must pay annually before their insurance begins to cover the cost of their care
dermatologist secondary provider who specializes in skin-related conditions
disparities differences that negatively impact one group over another
extrinsic factors external to an individual, such as issues that are political, cultural, or systemic
for-profit hospitals and other healthcare organizations that are run as businesses and funded in part by investors who expect to receive a share of the profits from the business in return for the money they invest

gastroenterologist secondary provider who specializes in conditions related to the digestive tract
health literacy the ability of an individual to locate, comprehend, and use health-related material and make healthcare decisions
healthcare debt money owed by patients related to healthcare activities
healthcare delivery organization a single facility or group of facilities that provide medical care for some portion of a population
independent practice a physician's office, owned and operated by a single physician with a small staff
integrated delivery system (IDS) a network of providers and agencies who collaborate with each other to provide care to individuals in a community
intrinsic factors internal to an individual, such as beliefs and values
level of care amount and complexity of care a patient requires
medical home primary care space that functions as a comprehensive primary care deliverer, coordinates care across the other levels, and ensures quality of care and efficiency for the patient
multispecialty group practice a group practice that includes providers from multiple specialties
national health insurance single-payer national health insurance
not-for-profit (NFP) organizations, such as hospitals and other healthcare groups, that are funded in part by donations and do not have to pay local, state, or federal taxes but are required to provide charity care and serve their communities
out-of-pocket model market-driven health care
Patient Protection and Affordable Care Act (ACA) a law passed by the U.S. Congress designed to improve access to health insurance and health care for all Americans
population level all individuals in a group; can be defined by shared demographics like geography, culture, or economic group; for example, U.S. citizens, teenagers, or individuals living below the poverty line
premium the fees that individuals pay on a regular basis for their health insurance and that may be taken out of their checks by their employer
primary care provider (PCP) any physician or other provider (such as nurse practitioner or physician's assistant) who provides broad, basic health care focused on prevention, screening, and mild to moderate health conditions and coordinates care among levels of the healthcare system
primary health care level of care focused on prevention of illness and maintenance of health, includes wellness care, sick care, immunizations, screening, and referral
private an institution that is run and funded by a group other than the government and can be either a for-profit or a not-for-profit institution
private health institutions organizations run and funded by a group other than the government, including both for-profit and not-for-profit organizations, such as doctors' offices, pharmacies, and same-day surgery centers
profits money remaining after all bills, including staff salaries, loans, and taxes, are paid
provider shortage not having enough providers for a given population
public an institution that is run and largely funded by the government and is for the good of the people it serves
public health institutions healthcare organization run and largely funded by the government for the good of the people they serve; provide direct patient care, set healthcare policy for all affiliated organizations, and are actively involved in caring for health at a population level
pulmonologist secondary provider who specializes in lung-related conditions
restricted hours limited availability of physician offices and healthcare facilities, most commonly Monday through Friday during the day only
safety-net hospital a healthcare facility that is required to provide care for an individual regardless of their ability to pay
secondary care provider physician, nurse practitioner, physician assistant, mental health professional, or allied health professional with advanced training in a specific organ or system of the body
secondary health care (acute or hospital care) when a patient's condition requires specialty care or diagnosis
single-specialty group practice a physician practice of two or more physicians in which all providers have the same specialty, such as primary care or urology
stakeholder individual with an interest in the success of an organization, such as an investor in a business or a nurse in a hospital
state and local government healthcare institutions healthcare organizations funded entirely or in part with

public money (collected taxes) and charitable donations and controlled by the state/local government in which they are built

state and local health departments critical public health institutions providing a range of services including immunizations, monitoring of communicable diseases, and provision of health education classes

taxes money paid to the local, state, or federal government for property and the purchase of goods

tertiary care provider the specialist of the specialists with advanced training in procedures, diagnostics, and treatments

tertiary health care level of care focused on treatment of critically ill patients, those with rare or complicated diseases or injuries, or patients requiring advanced tools, diagnostics, or procedures

urologist secondary provider who specializes in conditions related to the urinary tract

vital records birth, marriage, divorce, and death certificates

Assessments

Review Questions

1. A patient is being flown by helicopter to an advanced medical center for emergency surgery after a severe motor vehicle accident. What level of care is this patient going to receive?

a. primary
b. secondary
c. tertiary
d. specialized

2. A nursing student is worried about their uncle who has lost some weight and is complaining of discomfort. The student recommends the uncle see his _____.

a. primary care physician
b. family physician
c. secondary care physician
d. tertiary care physician

3. Occupational therapists, speech therapists, and physical therapists are what type of secondary care practitioners?

a. primary care physicians
b. mental health providers
c. nurse practitioners
d. allied health professionals

4. What level of healthcare provider is a patient seeing if they are going to a mental health professional for intermittent visits?

a. primary
b. secondary
c. tertiary
d. behavioral health

5. A patient is the spouse of an active-duty military service member. What type of care organization do they probably use?

a. federal
b. not-for-profit
c. public hospital
d. private hospital

6. What types of facilities *must* function as safety-net hospitals?

a. for-profit hospitals
b. not-for-profit hospitals

c. state/local government hospitals
d. community hospitals

7. State and local health departments are responsible for many functions within their geographical areas, including administering federal programs such as WIC, regional emergency preparedness activities, and _____.
a. setting healthcare policy at a national level
b. providing vital records for their community members
c. providing complete primary, secondary, and tertiary care
d. providing care for American Indian and Alaskan Native people

8. A patient's ability to understand and follow physician instructions, engage in their own healthcare decision-making, and understand their condition is related to their _____.
a. health literacy
b. health understanding
c. education level
d. income level

9. Mrs. Simpson, an 82-year-old patient with Medicare who lives on her son's farm, has missed her scheduled appointment. The nurse recognizes she may face which barrier to care?
a. lack of time
b. race
c. transportation
d. uninsured

10. What is not a goal of the ACA?
a. make insurance affordable for individuals who fall between 100 and 400 percent of the federal poverty level
b. educate enough physicians to cover all physician shortages nationwide
c. expand Medicaid to cover all adults below 138 percent of the federal poverty level
d. support overall changes to healthcare delivery that will lower costs and improve care

11. During orientation, a new nurse is told by a preceptor that on the unit, staff arrive 10 minutes early for their shift, and report is given by doing "walking rounds" (giving report at the bedside, while using plain language and engaging the patient). The preceptor is teaching the new nurse about the unit's _____.
a. sociology
b. structure
c. culture
d. reliability

12. A patient in which scenario is most likely to have a need for strong care collaboration?
a. 25-year-old with a fractured ankle, is otherwise healthy, and lives with their spouse
b. 75-year-old with a recent hip replacement and multiple other conditions who lives alone
c. 35-year-old with an uncomplicated pregnancy who lives with their partner
d. 45-year-old with pneumonia who lives alone

13. PDSA is a technique commonly used for _____ and stands for _____, _____, _____, and _____.
a. quality improvement; plan; do; study; act
b. safety initiatives; plan; do; survey; abandon
c. cultural change; plan; do; study; act
d. quality improvement; process; do; survey; act

Check Your Understanding Questions

1. Briefly compare secondary and tertiary levels of care. Include the difference between the two, and provide an example of each type of practitioner, setting, and procedure.
2. Explain the differences between individual, single-specialty group, and multispecialty group practices.
3. In your own words, explain the relationship between health literacy and lack of education regarding primary care.
4. Explain the meaning of culturally competent care.
5. Describe care coordination.
6. Discuss what a culture of safety is.

Reflection Questions

1. Consider the concept of IDSs and your own experiences with health care. What do you think the benefits of IDSs are, and how does that reflect your own experiences with the healthcare system?
2. In the introduction to this section, you were asked to consider additional barriers to health care that you have experienced or can imagine. Provide two additional barriers to healthcare access you can think of and how they might impact care.
3. Reflect on the eight main principles of culturally competent care. Which of these principles do you think will be the most difficult for you to integrate into your care and why?
4. Consider working four shifts in a row and being given a very difficult and demanding patient each of those shifts. On the fourth shift, your charge nurse offers to give you a different patient than your demanding one. Do you accept the offer? Why or why not?

What Should the Nurse Do?

1. Nurse Moa is taking care of Mr. Henley. He has diabetes, asthma, a wound on his left lower leg, a toothache that started last night, and a history of occasional chest pain. While in the hospital, he is upset that he must see so many doctors and nurses. “Why can’t one doctor take care of me? Isn’t that what a hospital is for?” he argues. What should the nurse say?

A new nurse is drawing up a patient’s insulin. The patient needs 4 units of insulin based on their blood glucose level. When their preceptor checks the insulin, they realize that the new nurse has drawn up 4 mL of insulin (400 times the proper dose) in a regular syringe. The preceptor swapped out the insulin for the correct dose, and the patient was administered the correct dose.

2. What kind of situation is this known as?
3. Should the new nurse be punished? Why or why not?
4. What else should the preceptor do with this new nurse?
5. A patient has just requested some as-needed pain medication. It is close to the end of his shift, but the nurse, Bruce, did not want to leave it for the next shift. He went and pulled the pain medication out of the Pyxis, the automated machine that dispenses controlled medications. He drew the medication into a needleless syringe and put the packaging in his pocket. However, he was in a hurry. Rather than scanning the patient’s wristband, then scanning the medication to ensure it was the correct medication, and then giving the medication, he scanned the patient’s wristband and gave the medication, then returned to the computer to scan the medication into the system. When he scanned the medication, it was the wrong dose of pain medication. Instead of giving the patient 2 mg of morphine, Bruce gave the patient 4 mg of morphine. What should the nurse do?

Competency-Based Assessments

1. You are working in a small community hospital emergency room outside of Chicago, Illinois. You have a patient come into the emergency room after a traumatic motor vehicle accident. The patient will clearly need

multiple orthopedic surgeries for broken bones as well as burn care and perhaps plastic surgery. Conduct internet research and determine which of the following hospitals you would expect to send this patient to.

- Thorek Memorial Hospital Andersonville
- John H. Stroger, Jr. Hospital of Cook County
- Kindred Hospital Chicago–North
- Holy Cross Hospital

2. Conduct internet research and develop a brief 5- to 10-minute presentation about both the positive and negative aspects of one of the three types of federal hospital systems (VHA, IHS, or Defense Health Agency).
3. Explore the Healthy People 2030's healthcare access and quality (https://openstax.org/r/77HealthyPpl) web page. Choose two Related Objectives to examine further. For your chosen objectives, answer the following questions:
   a. What is the objective?
   b. What is the current status? Is it improving? What is the percentage difference between baseline, most recent, and target?
   c. Why is this objective important for healthcare access?
4. Choose a healthcare facility in your region or a region you wish to work in. Look up the hospital's website and explore their mission and vision statement. Supply the URL and hospital name, describe their mission and vision statement, and explain how you think you would feel about being part of that agency.

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CHAPTER 4

Health, Wellness, and Community-Based Health Care

FIGURE 4.1 The nurse's role in community healthcare is to offer the tools and strategies needed for effective illness prevention. (credit: modification of "20141016-DM-LSC-0191" by USDA/Flickr, Public Domain)

CHAPTER OUTLINE

4.1 Defining Health and Wellness
4.2 Models of Health
4.3 Health Promotion and Illness Prevention
4.4 Community-Based Health Care
4.5 Community-Based Healthcare Initiatives
4.6 Population Health

INTRODUCTION Health, wellness, and community-based health care are interrelated concepts that are essential for promoting the overall well-being of individuals and communities. Health emphasizes the physical, mental, and social well-being of an individual, while wellness emphasizes the active pursuit of a healthy and balanced lifestyle. Community-based health care can play a critical role in promoting health and wellness by providing individuals access to essential healthcare services, education, and resources to encourage the adoption of healthy lifestyles. In addition, community-based healthcare providers work with local organizations and stakeholders to address broader health issues, such as improving access to healthy food options, promoting physical activity, and addressing environmental health risks. Ultimately, community-based health care can help improve the overall health and well-being of communities by fostering a sense of collective responsibility for promoting health and wellness.

4.1 Defining Health and Wellness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define the terms *health* and *wellness*
- Describe the Healthy People 2030 initiative
- Analyze the five social determinants of health

Health and wellness are important concepts related to individuals' physical, mental, and social well-being. Maintaining good health and wellness requires a **holistic approach**, which means addressing the whole patient to assess and treat all facets of the person. This includes regular exercise, a balanced diet, adequate rest, and stress management. In addition to these physical factors, mental and emotional health is also critical to overall well-being. This includes developing healthy coping mechanisms, practicing mindfulness, and seeking help when needed. Prioritizing health and wellness can lead to numerous benefits, including increased energy, improved cognitive function, reduced risk of chronic diseases, and a more optimistic attitude toward life. By adopting healthy habits and focusing on holistic well-being, individuals can improve their quality of life and increase their resilience when faced with challenges. Health and wellness should be viewed as an ongoing journey that requires a long-term commitment to self-care and personal growth.

Definitions of Health and Wellness

Health and wellness are two different concepts, but they are interrelated. While health is mainly focused on the state of the physical, mental, and social aspects of an individual's life, wellness takes a more holistic approach, which views the person as a whole, considering individual activities, choices, and lifestyle in order to achieve a balanced and fulfilling life.

Health

The term health refers to the comprehensive view of physical, mental, emotional, and social well-being. Similarly, health is not simply the absence of disease or illness but a multifaceted concept that encompasses various aspects of a person's life. These aspects should be assessed not only individually but interconnectedly as well.

Human Dimensions

The **human dimensions** of health are facets of wellness that interrelate to demonstrate a comprehensive view of health (Table 4.1). The five dimensions include **emotional health**, **physical health**, **social health**, **intellectual health**, and **spiritual health** (PDHPE.NET, 2023). All these human dimensions are interrelated and influence one another. Neglecting any aspect of them can have a negative impact on a person's health. For example, if a person's emotional health is neglected, it can impact their physical health. People with depression or anxiety commonly have decreased appetite and decreased physical activity and/or social interactions with others. With deteriorated emotional health and impacted physical/social health, the person's overall health will be affected eventually. Therefore, it is important to take a holistic approach that addresses all aspects of health to achieve overall well-being.

Term	Definition	Example Activities
Physical health	Individual's ability to perform daily activities, maintain healthy body weight, and prevent illness and disease	Exercise, healthy diet, medication compliance (e.g., running, swimming)
Emotional health	Individual's ability to manage and express their emotions, cope with stress, and experience positive emotions	Meditation, mindfulness (e.g., going to yoga class)

TABLE 4.1 **Human Dimensions of Health**

Term	Definition	Example Activities
Social health	Individual's ability to participate in social activities, interact with others, and experience a sense of belonging and connection	Social networking (e.g., going to the movies with friends)
Intellectual health	Individual's ability to acquire new skills, think critically, and engage in creative activities	Learning new activities (e.g., taking a painting class or learning a new language)
Spiritual health	Individual's ability to achieve a purposeful and meaningful life	Religious activities or activities that bring peace to the individual (e.g., going to church or a religious celebration, visiting the ocean or mountains, connecting to nature)

TABLE 4.1 Human Dimensions of Health

Wellness

The Global Wellness Institute (2023) defines wellness as "the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health" (para. 4). It includes eight mutually codependent dimensions: **physical dimension of wellness**, **emotional dimension of wellness**, **social dimension of wellness**, **occupational dimension of wellness**, **spiritual dimension of wellness**, **intellectual dimension of wellness**, **environmental dimension of wellness**, and **financial dimension of wellness** (Table 4.2) (Compass Health, 2022). The dimensions of wellness are interrelated and affect each other in various ways. If any one of these dimensions is neglected over time, it will adversely affect one's health, well-being, and quality of life (QoL). For example, if sleep is neglected, over time this will impact one's ability to navigate stress and cope with challenging situations. This demonstrates how neglect of the physical dimension can negatively impact the emotional dimension. Similarly, if a patient is unable to access clean air over time, this will negatively impact their respiratory system, thus demonstrating how the environmental dimension can impact the physical dimension. By working to improve each dimension of wellness, individuals can achieve a state of optimal health and well-being.

Term	Definition	Example Activities
Physical dimension of wellness	The actions to maintain an individual's physical health	Nutrition, exercise, sleep, and regular medical checkups
Emotional dimension of wellness	The actions to increase self-awareness and self-regulation to manage emotions in a healthy and constructive way	Activities to cope with stress and adversity and promote positive emotions
Social dimension of wellness	The actions to maintain healthy and positive relationships with others	Activities including utilization of communication skills and social support to achieve a sense of belonging
Occupational dimension of wellness	The actions to achieve job satisfaction, work–life balance, and personal growth and development	Activities to develop personal career goals

TABLE 4.2 Dimensions of Wellness

Term	Definition	Example Activities
Spiritual dimension of wellness	The actions to achieve personal values	Activities including reinforcement of beliefs and practices that promote inner peace, happiness, and fulfillment
Intellectual dimension of wellness	The actions to acquire new skills and generate new knowledge	Activities to obtain knowledge, such as pursuing certifications, courses, and self-guided learning
Environmental dimension of wellness	The actions to achieve a good relationship with the surrounding environment	Activities including access to clean air and water and a safe and healthy living and working environment
Financial dimension of wellness	The actions to achieve financial stability to meet basic needs and experience a sense of financial security	Income, expenses, debt, savings, and investments

TABLE 4.2 Dimensions of Wellness

The most well-known model for wellness is Dunn's Theory of Wellness. Dunn's Theory of Wellness, also known as the High-Level Wellness Model, defines wellness as an ongoing process of growth and development that encompasses all aspects of an individual's life. It emphasizes the importance of taking a holistic approach to health and wellness and recognizes that all dimensions of wellness are interrelated and contribute to overall well-being. According to this theory, there are four processes to achieve wellness: being, belonging, becoming, and befitting.

REAL RN STORIES

Assessing for Wellness

Nurse: Nikolas, APRN
Clinical setting: Outpatient Clinic
Years in practice: 5
Facility location: Ohio

Many years ago, when I was about 29 years old, I took care of an 18-year-old male who really made an impression on me. His name was Rishan. I was working at a clinic doing health assessments for school sports that summer. Rishan came in with his mother. He wanted to play soccer and needed the form filled out before school started. Rishan was in great shape, with no physical limitations and no history of illness. He had good grades and adored his parents. His mother was not comfortable speaking about health care in English. She preferred speaking Gujarati. I asked Rishan to tell her that he was okay and that I would fill out the form. Mrs. Patel shook my hand and left the room. Rishan then admitted that he had told her that I needed to ask him the questions on the sheet alone. I said, "Okay, what's going on? Are you feeling sick?" Rishan told me that he was completely fine, but ever since school had ended, he just didn't feel right. He went on to say that he just didn't feel like doing anything or going anywhere. Plus, there was nothing for him to do; summer camps were for little kids. I sat down and asked him to tell me more. I knew that I had a room full of other patients to see, but I had to take the time to talk to him. Rishan admitted that he just felt sad all the time and that sometimes he didn't know what day it was. He didn't want to get out of bed sometimes. I talked to him at length and even completed a suicide assessment. It turned out that Rishan desperately missed going to school. He missed his friends and the structure of school. I connected him and his mom with a counselor and some soccer camps in the area. His mom also agreed to join the local gym so he could play pick-up basketball every day. This was the first time that I realized that even my "healthy" patients might have areas in their lives that are not well. You never know when a simple conversation can really help a patient open up and talk to you.

Being

In Dunn's Theory of Wellness, **being** is defined as recognizing oneself as an individual and actively working to achieve a state of high-level wellness in all eight dimensions. This includes engaging in regular physical activity, managing stress, developing healthy relationships, pursuing intellectual interests, nurturing spirituality, and finding meaning and purpose in one's work. Individuals who are in a state of high-level wellness are thought to have a strong sense of self-awareness and can make choices that support their overall well-being.

Belonging

The word **belonging** is defined as the feeling of being accepted, valued, and supported by others, as well as the sense of being part of a larger community or group. Belonging is a key dimension of wellness in Dunn's Theory of Wellness. This dimension focuses on an individual's sense of connectedness to their communities and social networks. The dimension recognizes the importance of social relationships and the impact they can have on an individual's mental and emotional well-being. Individuals who have a strong sense of belonging tend to have higher levels of self-esteem, improved coping skills, and a greater sense of purpose and meaning in life. However, the absence of belonging or social isolation can have negative impacts on an individual's health and well-being, including increased stress, depression, and a higher risk of chronic diseases. Therefore, promoting a sense of belonging and social connection is essential to achieve a state of high-level wellness in Dunn's Theory of Wellness.

Becoming

The word **becoming** is defined as an individual's pursuit of personal growth and self-improvement, as well as their openness to new experiences and perspectives. Becoming emphasizes the importance of ongoing growth and development. It recognizes that personal growth and development are ongoing processes that require a commitment to lifelong learning and self-reflection. Individuals who prioritize the dimension of becoming are often interested in expanding their knowledge, pursuing new hobbies, and exploring new opportunities for personal and professional growth. This dimension also acknowledges that personal growth can occur through challenges and setbacks, as these experiences can provide opportunities for learning and personal development. In Dunn's Theory of Wellness, becoming is seen as an essential component of overall well-being, as it contributes to a sense of purpose, meaning, and fulfillment in life. By actively pursuing personal growth and development, such as by going back to school to enhance one's education, individuals can enhance their overall well-being and improve their quality of life (QoL).

Befitting

Taking proactive self-care strategies and personal responsibility to make personal choices to benefit one's well-being is known as **befitting**. It includes taking steps to prevent illness and promote overall health and well-being, such as adopting healthy habits, managing stress, getting regular checkups, and taking care of one's mental and emotional health. By making choices that prioritize long-term well-being, individuals can improve their quality of life and reduce the risk of chronic diseases and other health problems.

PATIENT CONVERSATIONS

What Does Your Patient Know About Health and Wellness?

Scenario: The patient was admitted to the medical-surgical floor for chest pain. In the morning, the nurse walks into the patient's room.

Nurse: Good morning, how are you feeling today?

Patient: Hi, I'm feeling much better today. I am trying to stay healthy, and I expect to be discharged soon.

Nurse: That's great to hear. Can you tell me what you are doing to try to keep healthy?

Patient: Well, I try to eat healthy and exercise regularly.

Nurse: Those are definitely important aspects of overall health and wellness. But did you know that being healthy isn't just about physical health?

Patient: Really? What else is there?

Nurse: Health and wellness encompasses much more than just physical health. It also includes psychological health, a balanced lifestyle, and social well-being. These different aspects work together to make up your overall well-being.

Patient: I see. I never really thought about it that way.

Nurse: It's a common misconception, but think about it. If you're physically healthy, but you're constantly stressed or not getting enough sleep, it can still take a toll on your overall well-being. That's why it's important to strive for balance in all aspects of your life.

Patient: That makes sense. So, how can I work on these other aspects of wellness?

Nurse: Well, for psychological health, it's important to take care of your mental and emotional well-being. This can include things like practicing mindfulness, seeking therapy or counseling if needed, and finding ways to manage stress. For a balanced lifestyle, it's important to make time for activities you enjoy, connect with others, and have a good work–life balance. And for social well-being, it's important to build and maintain healthy relationships with friends and family.

Patient: I never realized there were so many different aspects of wellness. Thank you for explaining it to me.

Nurse: You're welcome. Remember, taking care of your overall well-being can have a positive impact on all areas of your life. Let me know if you have any other questions or concerns.

Healthy People 2030

To improve people's health and well-being over the next decade, the Healthy People 2030 initiative sets a variety of data-driven national objectives. Included in the Healthy People 2030 initiative are 358 core, measurable, and developmental objectives (U.S. Department of Health and Human Services, 2023). These objectives provide a clear and concrete guide to improving the health of the nation, focusing on the most critical challenges and priorities for the public.

LINK TO LEARNING

The Healthy People 2030 website (https://Openstax.org/r/77healthy2030) is coordinated by the Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Office of the Secretary, and U.S. Department of Health and Human Services. This Five Social Determinants of Health in Healthy People 2030 video (https://Openstax.org/r/77healthy2030vd) gives additional information.

Objectives and Data

The Healthy People 2030 initiative has three types of objectives: core, developmental, and research objectives (Table 4.3). Five intuitive topics are covered in the Healthy People 2030 objectives: health conditions, health behaviors, populations, settings and systems, and social determinants (Office of Disease Prevention and Health Promotion, 2023a).

More than eighty data systems are used as part of the Healthy People 2030 initiative to track progress toward the achievement of objectives over the course of the decade. These include national censuses of events (e.g., the National Vital Statistics System), nationally representative sample surveys (e.g., the National Health Interview Survey), and other valid and reliable data sources (e.g., the State Tobacco Activities Tracking and Evaluation System).

Objective	Description
Core objectives	Address high-priority public health issues, including evidence-based interventions. The core objectives were developed using valid and reliable data obtained from the nationally representative population. The baseline data for the core objectives were from 2015.
Development objectives	Represent high-priority public health issues that can be addressed with evidence-based interventions but which do not yet have reliable baseline data.
Research objectives	Represent issues of public health with high health and economic burdens or significant disparities between groups of people, but which lack evidence-based interventions.

TABLE 4.3 Objectives of Healthy People 2030

Leading Health Indicators

The Healthy People 2030 initiative has twenty-three **leading health indicators** selected from high-priority Healthy People 2030 objectives to inspire action to improve health and well-being and provide a point of measure for success. As a set, leading health indicators encompass all aspects of health. Most leading health indicators focus on factors that contribute to the leading causes of death and disease in the United States, such as cigarette smoking, suicide, exposure to unhealthy air, and so on. These indicators help community and state organizations focus efforts and resources on improving health and well-being. The leading health indicators cover the life span and include objectives across topic areas, such as improved oral health interventions and increasing the proportion of people with health insurance.

LINK TO LEARNING

The leading health indicators (https://Openstax.org/r/77leadhelthind) provide multiple data on the high-priority objectives in the Healthy People 2023 initiative. The data provide information on the trend and progress of fulfilling the objectives, which could help policymakers, researchers, and healthcare providers initiate actions to improve the public's well-being.

Health Equity

According to the Healthy People 2030 initiative, **health equity** is the attainment of the highest level of health for every person. Achieving health equity means valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities and historical and contemporary injustices and eliminate health and healthcare disparities (Office of Disease Prevention and Health Promotion, 2023b). It aligns with the overarching goal of the Healthy People 2030 initiative to eliminate health disparities, achieve health equity, and improve health literacy for everyone. Examples of aiming to achieve health equity include providing accessible healthcare services, making medications affordable, promoting health education, addressing language and cultural barriers, expanding health insurance coverage, addressing social determinants of health, conducting research on health disparities, and engaging communities in decision-making processes.

Health Literacy

The ability to obtain, understand, and use information to make medical decisions is known as health literacy. One of the Healthy People 2030 initiative's overarching goals is to "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all," which demonstrates the importance of this concept (Office of Disease Prevention and Health Promotion, 2023c).

The Healthy People 2030 initiative addresses both personal health literacy and organizational health literacy. While **personal health literacy** focuses on the ability of a single person to comprehend and use health information, **organizational health literacy** focuses on how an organization can help individuals find and use this information for themselves to make decisions about their health and wellness. The Healthy People 2030 initiative recognizes that personal health literacy is context specific, and that health information and service providers have the responsibility to improve personal health literacy. Examples of aiming to improve individuals' health literacy include clearly

communicating, implementing health education programs, providing multimedia tools, and promoting digital literacy.

PATIENT CONVERSATIONS

Importance of Assessing Health Literacy Levels to Provide Effective Education

Scenario: The nurse is educating a newly diagnosed patient with diabetes about making healthy choices. In this scenario, the nurse, Silvia, realizes that her previous teaching efforts were completely misunderstood. Mrs. Harvey has a lower healthcare literacy level than what was assumed.

Nurse: Hello, Mrs. Harvey. How are you?

Patient: Hello there, Silvia. I am ready to go home.

Nurse: Yes ma'am, I hear you. Let's sit, and I'll go over your discharge paperwork with you.

Patient: Alright (nodding).

Nurse: So, I know you know about your diabetes and how to check your blood sugar. Today I want to talk about your feet.

Patient: My feet? What about my feet?

Nurse: Well, now that you have diabetes, you will have to have really good foot care. You will have to check your feet every day.

Patient: I can do that. I'll do it when I get home.

Nurse: Yes, make sure you wear shoes that fit well and aren't tight on your feet.

Patient: Okay. I can do that. I will definitely do like you said and check my foot for diabetes every day and see if there is diabetes in my shoes too. Do you think it's in my clothes? I don't want to have to throw my clothes out. That's expensive.

Nurse: Oh no, Mrs. Harvey. You are checking your feet for injuries and wounds. Remember, we watched the video on checking to make sure you don't have any injuries that you can't feel on your feet.

Patient: Yes, we did watch the video, but if I don't have anything wrong with my feet, why am I checking them? I thought you said to check my blood sugar. Now you want me to check my feet? Just tell the truth, is the diabetes moving down to my feet now?

Nurse: You know what, Mrs. Harvey? Why don't I start over and take this step by step with you? I will go over what diabetes is first. Then we can go over what it does to the body, and then I'll explain what we check for and why.

Patient: Okay, thank you. And can you teach my granddaughter too? She's coming to see me after lunch today. She's in that fancy college and is very smart. She's studying to be a nurse, you know.

Nurse: Yes, I can. I can get everything ready and come back to teach both of you this afternoon.

Social Determinants of Health

The conditions associated with birth, childhood, education, work, play, worship, and aging that impact health, functioning, and quality-of-life outcomes are termed **social determinants of health (SDOH)**. Social determinants of health align with one of the Healthy People 2030's five overarching goals: "Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all" (Office of Disease Prevention and Health Promotion, 2023d). Social determinants of health have a major impact on people's health, well-being, and quality of life. They include five domains: economic stability, healthcare access and quality, education access and quality, neighborhood and built environment, and social and community context. Figure 4.2 outlines the five social determinants of health identified by the HHS.

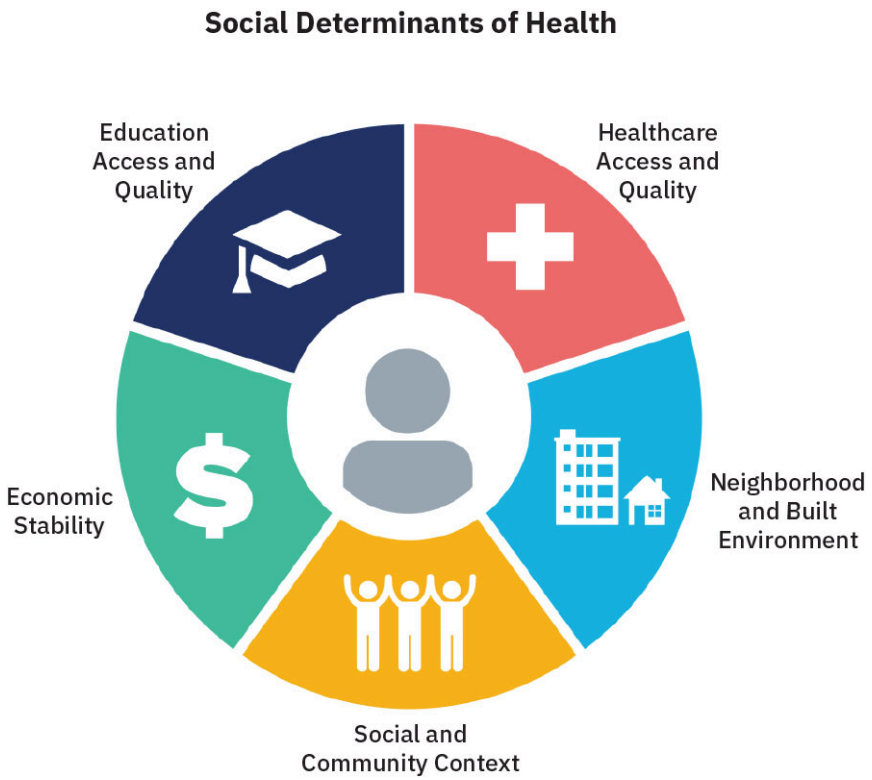

FIGURE 4.2 Social determinants of health are factors that impact the health and quality of life of all people. (credit: modification of "Healthy People 2030" by U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion/health.gov, Public Domain)

Economic Stability

In the United States, one out of ten people live in poverty, and many cannot afford basic necessities like food, health care, and housing (Semega et al., 2019). As economic stability is a large concern in the United States, one of the Healthy People 2030 goals is to help people earn steady incomes that allow them to meet their health needs. Those who have lower levels of income are less likely to comfortably afford reliable health insurance coverage, preventive care, and resources to support overall health, such as fresh produce. Further, those with lower incomes are more likely to have difficulties paying for expensive treatments or procedures that may be needed.

Steady employment, and thus steady income, can help provide families with financial support for their healthcare needs. A disability, injury, or chronic health condition may make finding or keeping a job difficult for some people, impacting their overall economic stability. To offset these challenges, a variety of employment programs, career counseling, and high-quality childcare services can assist people with finding and keeping jobs. For example, the U.S. Department of Labor supports Job Corps, which provides skills training for those looking for employment. Additionally, programs such as welfare and Head Start help children and families obtain nutrition and medical supplies. Additionally, health, well-being, and poverty can be reduced and improved by policies that help people pay for food, housing, health care, and education.

Healthcare Access and Quality

Approximately 8 percent of Americans lack health insurance coverage, and many people are unable to receive health care (HHS, 2022). One of the Healthy People 2030 goals is to increase access to comprehensive, high-quality healthcare services.

Patients without insurance may have difficulty accessing health care, and they may be unable to afford medications and healthcare services. Strategies to increase rates of insurance coverage of preventive care and treatment for chronic illnesses are important to help more people to get necessary healthcare services. Other factors, such as lacking a primary care provider and transportation to and from healthcare facilities, may hinder people from getting recommended healthcare services. Interventions to increase access to healthcare services and improve in-person or remote communication can help more people obtain the healthcare services they need. Example initiatives aiming to increase healthcare access and quality include offering universal health coverage (e.g., the Affordable

Care Act), expanding primary care services, utilizing telehealth, reducing wait times, facilitating health information exchange, fostering cultural competence, and addressing health disparities.

REAL RN STORIES

Resource Management to Facilitate Patient Care

Nurse: Patience, Community Health RN
Clinical setting: Outpatient Clinic
Years in practice: 6
Facility location: Dallas, Texas

I was working in a community health clinic for over three years when I met Mrs. Gloria Dennison. She was a retired schoolteacher who lived in an apartment in South Dallas. She was scheduled to come in every month to pick up her medication from our mobile pharmacy and to get her blood pressure checked. Sometimes she would need refills of her asthma medication too. Well, after a year I noticed a change in Mrs. Dennison: she used to come early to every appointment and would chit-chat with me about her years as a teacher. I started to notice that nowadays she was always late and seemed very stressed. She would need to sit for a minute to catch her breath before we took her blood pressure. She would come in long after her medication ran out, and when we assessed her, her blood pressure would be higher than normal. One time she came in, and I could see that she was not breathing well. We had to use a rescue inhaler supplied by the clinic to help her breathe. Finally, I asked her what was going on. Mrs. Dennison broke down and told me that David, her husband of forty years, was very sick and could no longer drive their car. She was now taking the bus everywhere because she didn't have a driver's license. I remember her telling me that they lived across the street from the school where they both worked for all these years. Now that he couldn't drive, she had to take two buses to get to the clinic. And sometimes the buses were late, or she would just miss her connection by a few minutes. Since the trip was so stressful, she waited till she felt like she needed the medications before she came in. I sat her down and told her that the clinic could help her with this. We had transportation vouchers from our community partners that could be used to pay for her transportation to and from the clinic. She was so happy and held on to my hand for a long time. I told her to please let us know if she needed anything else because even if we couldn't help her with a problem, we might have community resource partners who could. Then I told her that we could find her a ride home today. She was overjoyed. That was the day I decided to keep working in community health and to educate myself about available resources that might help my patients.

Education Access and Quality

People who have higher education levels are more likely to be healthier and live longer (Raghupathi & Raghupathi, 2020). Adult education, especially post-secondary education, is the most important factor influencing life expectancy and infant mortality (Raghupathi & Raghupathi, 2020). One of the Healthy People 2030 goals is to increase educational opportunities and help children and adolescents do well in school. This foundation for learning will then help those children and adolescents as they move into adulthood.

Numerous families are unable to finance the expense of their children's college education. Some children reside in areas with underperforming schools. The stress of living in poverty can impact children's brain development and make it hard for them to do well in school. Interventions that can help children and adolescents do well in school can have long-term health benefits.

Neighborhood and Built Environment

The neighborhoods people live in have a huge impact on their health and well-being. One of the Healthy People 2030 goals is to create neighborhoods and environments that promote health and safety. Example initiatives to create healthy neighborhoods and built environments include creating multiple green spaces (open spaces designated for grass or trees) or parks for residents, allocating food markets and fresh produce markets near residential areas, and providing accessible resources to the community. With healthy neighborhoods and environments, residents can overcome barriers such as transportation or lack of resources. The initiatives can help to promote residents' health and quality of life (QoL).

Many individuals in the United States reside in neighborhoods with elevated levels of danger, such as high rates of

violence or poor-quality air and water. Racial/ethnic minorities and people with low incomes are particularly prone to living in such areas. Moreover, certain individuals are exposed to environmental risk factors that could negatively impact their well-being, including exposure to secondhand smoke or loud noises. To address these issues and promote good health, interventions at the local, state, and national levels are crucial. For example, incorporating bike lanes and sidewalks in community designs can improve safety, promote physical activity, and boost the overall quality of life.

Social and Community Context

Individuals' relationships and interactions with family, friends, coworkers, and community members can have a major impact on their health and well-being. One of the Healthy People 2030 goals is to increase social and community support.

Individuals sometimes encounter challenges, such as discrimination, financial instability, and living in unsafe areas, which can adversely affect their health and safety. Having positive relationships within one's family, workplace, and community can help alleviate these negative impacts. However, there are certain groups, such as children with incarcerated parents and bullied adolescents, who lack such support. Bullying can lead to profound psychological distress, social isolation, and compromised physical and mental health outcomes for affected adolescents. Interventions aimed at providing social and community support are essential to improve the overall health and well-being of individuals. Targeted interventions, such as counseling services, mentorship programs, community support groups, and educational initiatives, are needed to provide support and resources for these at-risk populations. Examples of such support and resource services include the Centers for Disease Control and Prevention, the American Psychiatric Association, the Crisis Text Line, and local health departments.

4.2 Models of Health

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Discuss the different nursing models used in patient care
- Describe medical models used by nurses when providing patient care
- Identify examples of models for health and illness

The **models of health** are conceptual frameworks that guide healthcare providers to understand and promote health. They encompass various theories and approaches that aim to explain the complex relationships among individuals, environment, and health outcomes. By understanding multiple factors that contribute to health, healthcare providers can develop comprehensive care plans that address the unique needs of the patients. Models of health are continuously evolving and remain a critical aspect of healthcare practice and research (Table 4.4).

Types of Models	Description	Examples
Nursing models	Guide nursing practices that emphasize comprehensive care to patients	Health Belief Model, Health Promotion Model, Holistic Health Model, Maslow's hierarchy of needs
Medical models	Provide approaches to understanding and treating illness	Religious Model, Humanistic Model, Transpersonal Model
Models for health and illness	Used to understand and explain the complex interactions between biological, psychological, social, and environmental factors that contribute to a person's health status	Biomedical Model, Psychosomatic Model, Existential Model

TABLE 4.4 **Models of Health**

Nursing Models

The **nursing models** of health draw from various frameworks, such as the Health Belief Model, the Health Promotion Model, the Holistic Health Model, and Maslow's hierarchy of needs, to guide nursing practice and provide comprehensive care to patients. These models emphasize the importance of considering the whole person and taking a holistic approach to health and wellness. Nursing models of health recognize the importance of personal and environmental factors in shaping health behaviors and outcomes. By incorporating these models into the practice, nurses can provide patient-centered care (PCC) and promote optimal health outcomes for the patients. Patient-centered care focuses on the individual and that individual's specific healthcare needs, while encouraging the individual's active participation in their own medical plan.

Health Belief Model

The **Health Belief Model** (HBM) (Figure 4.3) is a widely recognized model of health that emphasizes the importance of an individual's beliefs and attitudes in shaping health behaviors. It includes six concepts: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action (Rural Health Information Hub, 2023). The HBM recognizes that individuals are more likely to engage in healthy behaviors when they perceive a threat to their health and believe that taking action will be beneficial in reducing that threat. An example of this behavior is when people quit smoking because they believe it will improve their health. The model also takes into account an individual's perceived barriers to taking action and their self-efficacy or confidence in their ability to make changes. The HBM is frequently used in health promotion and disease prevention programs to help individuals understand the importance of taking action to protect and promote their health. By focusing on an individual's beliefs and attitudes, the HBM can help nurses tailor interventions to meet the specific needs and concerns of each patient.

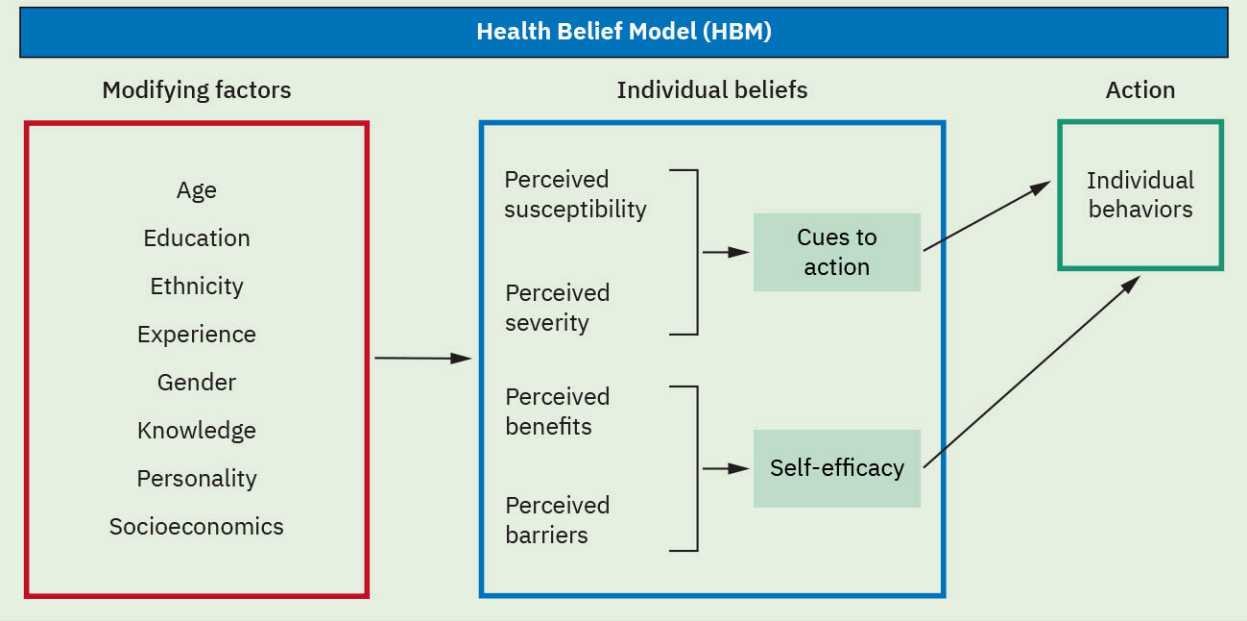

FIGURE 4.3 The Health Belief Model says that a patient's personal assumptions will influence their health interventions and their actions regarding their health plans. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

The Health Belief Model is one of the most used models. It addresses health behavior change, health promotion, and disease prevention. Some other theories and models used for health behavior change, health promotion, and disease prevention programs (https://Openstax.org/r/77healthbehav) include Ecological Models, the Stages of Change Model (Transtheoretical Model), Social Cognitive Theory, and the Theory of Reasoned Action/Planned Behavior.

Health Promotion Model

The **Health Promotion Model** (HPM) (Figure 4.4) is another widely recognized model of health that takes a holistic approach to health and wellness. It focuses on three areas: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes (Chen & Hsieh, 2021). This model emphasizes the importance of personal and environmental factors in shaping health behaviors and outcomes. The HPM recognizes that individuals are more likely to engage in healthy behaviors when they feel empowered to take control of their health and have access to supportive environments that promote health. The model also highlights the importance of ongoing education and skill building to promote long-term behavior change. The HPM is frequently used in health promotion and disease prevention programs such as lung cancer screening programs and mammogram screening programs to help individuals understand the importance of making healthy choices and to provide them with the tools and resources they need to make those choices. By taking a holistic approach to health promotion, the HPM can help individuals achieve optimal health and well-being.

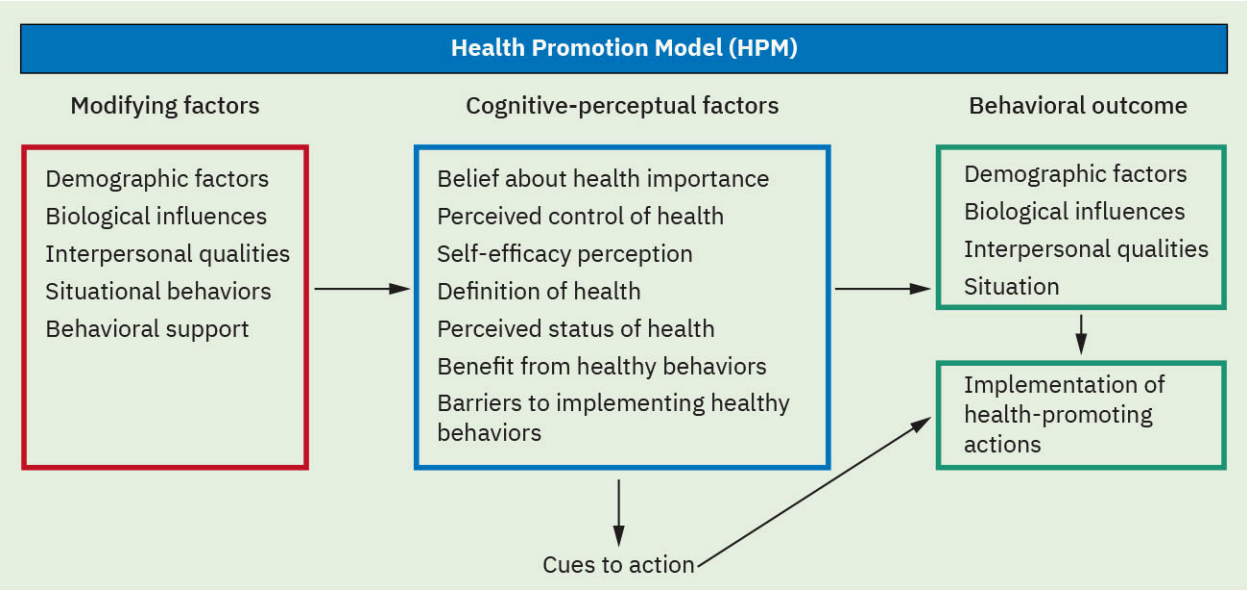

FIGURE 4.4 The Health Promotion Model states that individuals' health-promoting behaviors are impacted by their characteristics and experiences, as well as their behavior-specific cognitions and affect. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Holistic Health Model

The **Holistic Health Model** is a comprehensive model of health that takes into account the physical, emotional, social, and spiritual aspects of health and wellness (Schoon & Krumwiede, 2022). This model recognizes that health is more than just the absence of disease—it is a state of balance and harmony within the body, mind, and spirit. The Holistic Health Model emphasizes the importance of promoting health and preventing disease by addressing the root causes of imbalances in the body, such as poor nutrition, lack of exercise, stress, and environmental toxins. This model also recognizes the interconnectedness of all aspects of health and wellness and encourages individuals to take a proactive approach to their own health by making informed choices that support their overall well-being. By taking a holistic approach to health, the Holistic Health Model can help individuals achieve optimal health and well-being in all areas of their lives.

Maslow's Hierarchy of Needs

Maslow's **hierarchy of needs** (Figure 4.5) is a well-known model of health that describes human needs and motivations. It is a pyramid-shaped model that includes five levels of needs: physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs (Hayre-Kwan et al., 2021). The model suggests that individuals must satisfy their lower-level needs before they can move on to meet higher-level needs (Hayre-Kwan et al., 2021). By understanding the hierarchy of needs, nurses can identify the needs of their patients, provide care that meets those needs, and support their patients' overall well-being.

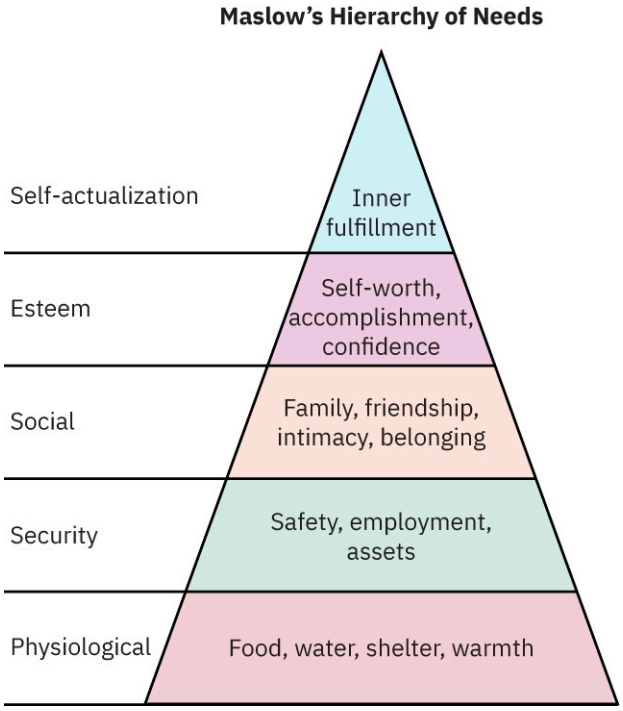

FIGURE 4.5 Maslow's hierarchy of needs suggests that individuals' physiological needs should be satisfied before their security, social, esteem, and self-actualization needs are met. (credit: modification of work from *Psychology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Medical Models

The **medical models** of health and wellness are approaches to understanding and treating illness. Medical models view health as the absence of disease or illness and focus on identifying and treating physical symptoms and underlying medical conditions through medical interventions, such as medications, surgeries, and other medical procedures. Medical models also emphasize the importance of preventive measures, such as vaccinations, regular health screenings, and lifestyle modifications, to maintain and promote optimal physical health.

Religious Model

A **religious model** refers to a framework or system of beliefs that serves as a guide for individuals or communities to understand and relate to a higher power or spiritual reality. The religious model of health views health as a state of complete physical, mental, and spiritual well-being that is attained through a relationship with a higher power or divine being. It emphasizes the importance of spirituality and religious practices in maintaining and promoting health and often incorporates prayer, meditation, fasting, and other religious practices into health care (Hvidt et al., 2020). It often includes a set of practices, rituals, and traditions that help people cultivate a sense of connection and meaning in their lives. The religious model of health can provide individuals with a sense of purpose and meaning as well as a support system through a faith community, which can contribute to overall health and well-being. However, religious models can vary widely depending on the specific traditions, doctrines, and interpretations that people follow. Some of the most well-known religions include Christianity, Islam, Hinduism, Buddhism, and Judaism, but there are countless other religious models practiced around the world.

Humanistic Model

The **humanistic model** focuses on the importance of the individual and their personal experience and emphasizes the need for PCC that recognizes the unique needs and values of each patient. The humanistic model of health views health as a holistic state of well-being that encompasses physical, emotional, social, and spiritual aspects of life. This model places emphasis on the individual's self-awareness, personal growth, and ability to make choices that lead to a fulfilling life. It recognizes that each individual has unique experiences, beliefs, and values that shape their perspective on health and well-being. The humanistic model of health promotes a patient-centered approach to health care, where the focus is on the whole person and not just their symptoms or illness. It encourages the development of a positive and supportive relationship between the patient and healthcare provider, with an emphasis on open communication, empathy, and mutual respect. The humanistic model of health places a strong

emphasis on the importance of preventive care and healthy lifestyle choices as well as the promotion of social justice and equality (Werder, 2019).

Transpersonal Model

The **transpersonal model** of health proposes that beyond the adult ego, there are developmental stages that involve experiences of connectedness with phenomena considered outside the boundaries of the ego (Watson Caring Science Institute, 2024). It views health as a state of consciousness that transcends the individual self and connects us to a larger universal reality. This model emphasizes the importance of personal growth in achieving optimal health and well-being. It recognizes that the human experience includes the spiritual and mystical dimensions of life. This model also acknowledges the role of interconnectedness and community in promoting health and well-being, as individuals are seen as part of a larger whole. The transpersonal model of health offers a holistic approach to health care that incorporates a broader range of experiences and practices beyond the traditional biomedical model, providing a framework for individuals to explore their spiritual and mystical dimensions in the pursuit of optimal health and well-being.

Models of Health and Illness

Models of health and illness are frameworks used to understand and explain the complex interactions between biological, psychological, social, and environmental factors that contribute to a person's health status. They are useful in understanding the complexities of how health is defined, maintained, and influenced by different factors and are essential for guiding research, clinical practice, and public health interventions. Some of the most commonly used models of health and illness include the biomedical model, psychosomatic model, and existential model.

The **biomedical model** is a traditional approach to health care that focuses on diagnosing and treating specific physical diseases or disorders using medical interventions such as drugs or surgery. The **psychosomatic model** stands on the idea that psychological factors, such as emotions, beliefs, and personality traits, can have a direct impact on physical health. The **existential model** is a philosophical and psychological approach that emphasizes the subjective experience of individual existence and the search for meaning in life. These models, summarized in Table 4.5, provide different lenses through which to understand and approach health and illness. Understanding their different perspectives can help individuals, nurses, and policymakers better understand the complex nature of health and illness and develop more effective strategies for promoting health and preventing disease.

Model	Description	Example
Biomedical model	• Body is viewed in individual pieces, similar to a machine that can be fixed by fixing independent parts • Strong emphasis placed on biological and physiological factors • Criticized for neglecting the psychological and social aspects of health and illness, which limits its use in chronic or complex disease states	Disease-specific causes of death: Cigarette smoking is linked to death from lung cancer.
Psychosomatic model	• According to this model, emotional or psychological distress can manifest as physical symptoms or illnesses, without a clear underlying physical cause (Meares, 1975). • Supports the interconnectedness of the mind and body, demonstrating the effect mental and emotional health has on physical health	The placebo effect: The patients in a drug trial may unknowingly be given a "fake" drug or placebo as a control group. Some of these patients will have such a strong belief that they received the real drug that they will actually have an improvement in their symptoms. Another example is of a cancer patient in severe pain who believes that a blessing they received from a religious leader has caused relief from their pain.
Existential model	• The existential model highlights the importance of personal responsibility, authenticity, and self-awareness in the search for meaning, and recognizes the potential for individuals to experience feelings of anxiety, despair, and isolation in the face of life's uncertainties (Cohn, 1984). • According to this model, individuals are confronted with the realities of existence (e.g., death, freedom, and choice).	A patient who has a terminal illness: The patient, who believes in nature and nontraditional medicines, may choose to only use herbs, exercise, and dietary changes to combat their illness. They may see their illness as a part of the cycle of life and choose to make peace with the diagnosis instead of utilizing more aggressive treatment options.

TABLE 4.5 Models of Health and Illness

4.3 Health Promotion and Illness Prevention

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define the global strategies for health promotion
- Discuss levels of prevention and application to patient care
- Compare factors influencing a patient's risk of illness
- Explain the impact illness has on health promotion

Health promotion is an essential aspect of nursing practice, and it involves the integration of global strategies, the application of prevention levels, and the consideration of factors that influence the risk of illness in patients. Health promotion aims to improve the overall well-being and health of individuals, families, and communities through a range of interventions and programs. Nurses play a vital role in health promotion, and they use a variety of strategies to prevent and manage illnesses and promote healthy behaviors. In this context, it is important to understand the levels of prevention and their application in patient care, the factors that contribute to illness, and the impact of illness on health promotion. This knowledge equips nurses to provide effective care and support to patients, enabling patients to make informed decisions about their health and well-being.

Strategies for Health Promotion

Global strategies for health promotion are comprehensive and coordinated efforts to improve health and wellness worldwide. The World Health Organization (WHO) has developed several global strategies for health promotion which focus on a variety of approaches, including improving access to healthcare services, promoting healthy lifestyles, addressing social determinants of health (SDOH), and advocating for policies and systems that support health and wellness. The goal of these strategies is to promote health equity, reduce health disparities, and empower individuals and communities to take an active role in their own health and well-being. The global strategies for health promotion include several key components, including governance for health, health literacy, and healthy cities. Overall, these global strategies for health promotion are aimed at creating supportive environments that enable individuals and communities to lead healthy and fulfilling lives. They emphasize the importance of collaboration and partnership among governments, organizations, and communities, as well as the need for a comprehensive and coordinated approach to promoting health and wellness worldwide. A recent example is the Healthy People 2030 initiative discussed earlier in this chapter.

Governance for Health

The process of developing and implementing policies, strategies, and actions that support and promote the health and well-being of individuals and communities is referred to as **governance for health**. Effective governance for health requires collaboration and coordination across various sectors and stakeholders, including government, civil society, and the private sector (WHO, 2023c). It emphasizes the importance of policies, laws, and regulations that support health and wellness. The role of governance in health promotion involves creating environments that support healthy behaviors, reducing health inequalities, and ensuring equitable access to health services. Good governance practices such as transparency, accountability, and participation are crucial to achieve these goals. Examples of actions that promote health and well-being include public service announcements and mass media campaigns, which provide communication to raise awareness. By prioritizing governance for health, policymakers and leaders can create the conditions necessary for individuals and communities to achieve optimal health and well-being.

Health Literacy

The ability of individuals to obtain, process, and understand basic health information and services needed to make informed decisions about their health is referred to as health literacy. It focuses on promoting knowledge and understanding of health and wellness among individuals and communities, which includes providing access to reliable health information, improving communication and decision-making skills, and promoting healthy behaviors and lifestyles (Centers for Disease Control and Prevention [CDC], 2023). In the context of health promotion, improving health literacy is essential to enable individuals to take an active role in their own health and well-being. People with low health literacy may have difficulty navigating the healthcare system, accessing appropriate health services, and making informed decisions about their health.

LINK TO LEARNING

Understanding health literacy is imperative for effective health promotion. The U.S. Department of Health and Human Services presents five facts to know about health literacy (https://Openstax.org/r/77healthlit) to improve health goals.

To improve health literacy, health promotion efforts should focus on providing clear, accurate, and accessible health information and services, using plain language and visual aids, breaking down information into small concrete steps, providing written information at or below sixth-grade reading level, limiting the objectives of a visit to three key points or tasks, and assessing for comprehension using the teach-back method (CDC, 2023). Community-based health education programs, health coaching, and digital health tools can also be used to support health literacy and empower individuals to take control of their health. By improving health literacy, individuals and communities can become more knowledgeable and engaged in making informed decisions about their health and well-being.

Healthy Cities

Healthy Cities is a strategy that focuses on creating environments that support the health and well-being of their residents. This includes designing cities and communities that promote physical activity, access to healthy food, clean air and water, and safe and affordable housing (WHO, 2023a). Healthy Cities recognizes that health is influenced by a range of factors, including the built environment, SDOH, and individual behavior. It prioritizes creating safe and accessible green spaces, promoting physical activity, and encouraging healthy eating habits (WHO, 2023a).

The Healthy Cities project was launched by the WHO in 1978. The goal was to promote public health and well-being as a result of the action of local government. The plan was to recognize the many determinants of health and to work collaboratively across all sectors to prioritize public health so that local governments work to improve public health. There are over seventy flagship cities that have expanded to form a national and global network. The WHO has created a resource for any city leader to utilize to improve health determinants specific to their locale or to work toward joining the Healthy City Network. By prioritizing health in their development and policies, healthy cities have the potential to improve the health and well-being of the residents and create a more sustainable future (WHO, 2023a). For example, in a healthy city, walking and biking are encouraged through the availability of pedestrian and cycling infrastructure. Residents have access to nutritious and affordable food options, and the city promotes local food production and farmers' markets. The design of buildings and public spaces is inclusive and encourages social interaction, reducing isolation and promoting mental health.

Levels of Prevention

Different stages or approaches that can be taken to prevent the occurrence of a health condition or disease are referred to as **levels of prevention**. There are three levels of prevention: primary, secondary, and tertiary (Table 4.6). Understanding the different levels of prevention is essential to implementing effective and efficient healthcare strategies that can prevent the occurrence or progression of health conditions.

Level of Prevention	Intent	Example
Primary prevention	First level of prevention that aims to prevent the onset of a disease or health condition before it occurs	Encourage exercise and healthy eating to prevent obesity
Secondary prevention	Second level of prevention that aims to detect and treat a disease or health condition in its early stages to prevent complications and progression	Check body mass index at wellness checkups to identify any changes to weight and potential for obesity
Tertiary prevention	Third level of prevention that aims to manage and treat the complications of a disease or health condition to prevent disability or death	Help patient who is obese to lose weight to prevent more severe consequences

TABLE 4.6 **Levels of Prevention**

Primary Prevention

The first level of prevention is **primary prevention**. It aims to prevent the onset of a disease or health condition before it occurs (Kisling & Das, 2023). This approach involves promoting healthy behaviors and lifestyles as well as implementing vaccination programs (Baumann & Ylinen, 2020). Examples of primary prevention include regular exercise, healthy diet, avoiding tobacco and alcohol use, and practicing safe sex to prevent sexually transmitted infections. Vaccinations are also a vital part of primary prevention, such as immunizations for infectious diseases like measles, mumps, rubella, hepatitis B, and human papillomavirus. Additionally, community-based programs that promote healthy behaviors and lifestyles, such as antismoking campaigns or nutrition education programs, are also effective primary prevention strategies. By implementing primary prevention strategies, individuals can take proactive steps to reduce their risk of developing health conditions and improve their overall health and well-being.

Secondary Prevention

The second level of prevention is **secondary prevention**. It aims to detect and treat a disease or health condition in its early stages to prevent complications and progression (Kisling & Das, 2023). This approach involves implementing screening programs and early detection initiatives to identify the disease before the symptoms appear (Baumann & Ylinen, 2020). Examples of secondary prevention include regular health checkups, cancer screenings, mammograms, colonoscopies, and Pap smears. These screenings can detect the early signs of diseases like diabetes, heart disease, and cancer. Early detection allows for prompt treatment, which can prevent the progression of the disease, reduce the severity of symptoms, and improve outcomes. By implementing secondary prevention strategies, individuals can detect diseases early, which improves their chances of successful treatment and recovery.

Tertiary Prevention

The third level of prevention is **tertiary prevention**. It aims to manage and treat the complications of a disease or health condition to prevent disability or death (Kisling & Das, 2023). This approach involves implementing rehabilitation and chronic disease management programs to help individuals manage and cope with the consequences of the disease (Baumann & Ylinen, 2020). Examples of tertiary prevention include physical therapy, occupational therapy, and speech therapy for individuals who have experienced a stroke or a traumatic injury. Chronic disease management programs, such as diabetes management programs and cardiac rehabilitation programs, can help individuals manage the complications of their chronic condition and prevent further health issues. By implementing tertiary prevention strategies, individuals can improve their quality of life (QoL), manage their symptoms, and prevent complications associated with their disease.

Factors Influencing Risk of Illness

The risk of illness can be influenced by a range of factors, including inherent factors, lifestyle factors, and environmental factors (WHO, 2023b). Factors a patient cannot change or modify are **inherent factors**, also called nonmodifiable factors, such as age, gender, race, genetics, and family history. Factors the patient can change are lifestyle factors, also called modifiable factors, such as tobacco use, alcohol consumption, diet, and activity level.

These can affect an individual's risk of developing certain health conditions. Exposure to pollution, toxins, and infectious agents in the air, water, or surrounding environment are some of the **environmental factors** that can also increase the risk of illness (Rojas-Rueda et al., 2021). Understanding the various factors that influence the risk of illness can help individuals and healthcare professionals develop effective prevention and management strategies to reduce the risk of illness and promote optimal health and well-being (Table 4.7).

Factor	Description	Examples
Inherent factors	Individual nonmodifiable characteristics that can influence the risk of illness	Genetics, age, and sex
Lifestyle factors	Individual modifiable behaviors and habits that can influence the risk of illness	Tobacco and alcohol use, diet, physical activity, and stress level
Environmental factors	Physical, chemical, biological, and social factors that affect the quality of air, water, food, and the general environment, which can eventually influence the risk of illness	Pollutants, sanitation, climate change, and access to health care

TABLE 4.7 Factors Influencing Risk of Illness

Inherent Factors

Inherent factors are the individual nonmodifiable characteristics that can influence the risk of illness, which include genetics, age, and sex. Genetic factors can make an individual more susceptible to certain health conditions, such as cancer, heart disease, and diabetes (Johansson et al., 2021). Age is also an important inherent factor, as the risk of many diseases increases with age due to physiological changes and accumulated exposure to risk factors. For example, the risk of dementia, osteoporosis, and many types of cancer increases with age. Additionally, sex can also influence the risk of illness as females and males have different biological characteristics that make them more susceptible to certain conditions. For example, females are at a higher risk of developing breast cancer and osteoporosis, while males are more likely to develop prostate cancer. Understanding inherent factors that influence the risk of illness can help individuals and healthcare professionals develop personalized prevention and management strategies that address the unique risk factors of each individual.

Lifestyle Factors

Lifestyle factors, which include tobacco and alcohol use, diet, physical activity, and stress level, are individual modifiable behaviors and habits that can influence the risk of illness (Zaman et al., 2019).

CULTURAL CONTEXT

Cultural Considerations About Health

While assessing and discussing lifestyle factors with a patient, it is important for the nurse to consider cultural norms and expectations. For example, some cultures place great value on large meals to celebrate a lifestyle milestone and/or mourn a loss. While the food options at these events may be high in sodium, fat, and/or carbohydrates, thus making them not ideal for a patient struggling with obesity or diabetes mellitus type II, it is important to consider the social and familial factors in the decision to engage in these meals. The nurse should consider mental and emotional health and work with the patient to make a plan for engaging with and enjoying cultural traditions while keeping healthy choices in mind.

Tobacco use is a major lifestyle factor that increases the risk of respiratory illnesses, heart disease, and cancer. Alcohol consumption can also increase the risk of liver disease, cancer, and mental health disorders. Diet that is high in saturated fats, sugar, and salt can increase the risk of obesity, type 2 diabetes, and heart disease. Physical inactivity can increase the risk of obesity, heart disease, and stroke. Chronic stress can also affect the immune system and increase the risk of mental health disorders such as anxiety and depression. Adopting healthy lifestyle habits, such as regular exercise, a balanced diet, avoiding tobacco and excessive alcohol consumption, and

managing stress, can help individuals reduce their risk of illness and promote optimal health and well-being (Zaman et al., 2019).

PATIENT CONVERSATIONS

Discussing Lifestyle Changes to Improve Health

Scenario: This is a conversation between Nurse Luis DeSilva and Mr. Travis Butler, a 44-year-old male who was born and raised in the South. He has obesity and has high cholesterol and high blood pressure. Read what happens when Nurse Luis discusses lifestyle changes with Mr. Butler.

Nurse: Mr. Butler, the last time you were here, we talked about the changes you needed to make to improve your health.

Patient: Luis, I know we did, but I don't know if I can do it. I was born in Texas and raised in Louisiana and Mississippi. Frying food is a part of who I am. I honestly don't know if I can give that up.

Nurse: I understand that fried food is a part of your Southern culture. I do. My culture is Mexican, and we fry a lot of foods too. I get it. But when I became a nurse and learned about health and nutrition, I started trying ways to improve my traditional foods.

Patient: What do you mean? Like what?

Nurse: Well, for one thing, I use an air fryer now. So, I can still get the crispy coating on my food, but I don't have to use all that oil.

Patient: An air fryer? I see them on TV sometimes. I've never tried it though. I always wonder if the food is actually crispy or if it's fake for TV.

Nurse: It actually is. So, this is how I recommend you do this. Make gradual changes to your diet and exercise. Take small steps like trying your regular recipes in the air fryer instead of deep frying them. Do that first. Then we can try cutting back on your salt and increasing your fresh seasoning or even low sodium sauces and marinades. The key is to make small changes that will slowly improve your health without you having to abandon your traditional meals.

Patient: Ahhh, I see what you mean. I get it now. I don't have to eat rabbit food. You know what, I think I'll ask my daughter to lend me her air fryer this weekend. It'll be cheaper without having to buy all that oil.

Environmental Factors

Environmental factors can significantly impact the risk of illness in individuals and populations. These factors can include physical, chemical, biological, and social factors that affect the quality of air, water, food, and the general environment (WHO, 2023b). Exposure to pollutants, such as particulate matter, formaldehyde, lead, and other toxic chemicals, can lead to respiratory problems, cancer, and other health problems. Poor sanitation, lack of access to clean water, and inadequate waste disposal can also increase the risk of infectious diseases. Climate change can worsen air quality, increase the frequency and intensity of extreme weather events, and lead to the spread of vector-borne diseases (WHO, 2023b). SDOH, such as poverty, education, and access to health care, can also influence the risk of illness. Understanding and addressing these environmental factors is critical in preventing and controlling illness and promoting public health.

Impact of Illness on Health Promotion

The impact of illness on health promotion can be significant, as an individual's ability to engage in healthy behaviors may be hindered by their health condition. When someone is dealing with an illness, they may experience physical limitations, pain, fatigue, and emotional distress, which can make it difficult to adopt healthy habits such as exercise, eating a balanced diet, and managing stress. In addition, some medical treatments may also have side effects, such as dizziness, nausea, and vomiting, that can further impact an individual's ability to engage in healthy behaviors. It is important for healthcare providers to take these factors into consideration and work with patients to create realistic and achievable health goals that take their illness and limitations into account. By working together to develop a personalized health plan, patients can still engage in health promotion activities that are appropriate

for their condition and improve their overall well-being.

Emotions and Behavior

Illness can have a significant impact on a person's emotions and behaviors (Levenson, 2019). Physical symptoms and limitations can lead to frustration, anxiety, and depression. Pain, fatigue, and discomfort can also make it difficult for individuals to engage in daily activities, leading to feelings of helplessness or hopelessness. These emotional states can further impact a person's behavior, potentially leading to social withdrawal, decreased motivation, and changes in eating or sleeping habits. Additionally, illness can disrupt daily routines and responsibilities, leading to feelings of guilt or inadequacy (Levenson, 2019). It is important for healthcare providers to recognize and address the emotional and behavioral impact of illness on their patients. This may include providing emotional support, counseling, or referring patients to mental health specialists who can assist with the psychological and behavioral effects of illness.

Body Image and Self-Concept

Illness can have a significant impact on body image and self-concept. Physical changes resulting from illness or its treatment, such as hair loss, weight changes, and scars, can lead to negative body image and self-esteem issues (Cleveland Clinic, 2020). In addition, illness can disrupt daily routines and activities, which can affect a person's sense of identity and purpose. This can be particularly challenging for those who have previously identified with their physical abilities or appearance. Illness can also lead to social isolation and decreased social support, which can further exacerbate feelings of low self-esteem and poor body image. Examples of how a change in body image can lead to social isolation can be found in the cases of amputees, burn patients, and patients with a colostomy bag. These patients have undergone medical procedures to save and improve their lives. When the body change is visible, as in the care of a burn victim or an amputee, the patient might retreat from social gatherings to avoid being gawked at or having to explain "what happened to me." Therefore, healthcare providers should be aware of the potential impact of illness on body image and self-concept and provide support and resources to help patients cope and adjust to changes in their physical and emotional well-being.

Impact on the Family

The health of one family member can have a significant impact on the rest of the family. For example, if a family member is dealing with a chronic illness, it can be emotionally and physically taxing on everyone involved. Caregiving responsibilities can fall on other family members, which can add stress and strain to their lives. Additionally, if the ill family member requires frequent medical appointments or hospital stays, it can disrupt daily routines and create financial burdens. Furthermore, if the illness is genetic, other family members may be at a higher risk of developing the same condition, which can create anxiety and uncertainty. Overall, the health of one family member can have a ripple effect on the entire family unit.

4.4 Community-Based Health Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the nurse's role in community-based health care
- Identify different competencies used by the nurse in community-based health care
- Recognize different at-risk populations within community-based health care

The nurse's role in community-based health care involves being an educator, caregiver, change agent, collaborator, counselor, and patient advocate. To promote health, prevent disease, and manage chronic conditions, nurses work in collaboration with other healthcare professionals and community members to provide care to individuals, families, and communities in a variety of settings, including clinics, schools, and homes. Some of the key competencies used by nurses in community-based health care include promoting healthy lifestyles, preventing disease and health problems, educating the community, and evaluating the community. Nurses must have strong skills to effectively engage with diverse populations and communicate health information in a way that is easy to understand. There are several at-risk populations within community-based health care, including patients with disabilities, pediatric patients, older adults, individuals from underrepresented groups, people who are under- or uninsured, and patients with low socioeconomic status. Nurses play a critical role in addressing the unique health needs of these populations, such as providing access to healthcare services, education on self-management of chronic conditions, and support for social determinants of health (SDOH). Nurses also work to address health

disparities within these populations and promote health equity.

Nurse's Role in Community-Based Health Care

Nurses play a vital role in community-based health care. They provide a wide range of services to individuals and families in the communities as the first point of contact for patients. Nurses in community-based healthcare settings educate individuals and communities on healthy behaviors, provide disease prevention and screening services, and connect patients with appropriate resources and services. They also work closely with other healthcare professionals to coordinate care and ensure patients receive the support they need to achieve optimal health outcomes. Overall, nurses in community-based healthcare settings are critical members of the healthcare team, working tirelessly to improve the health and well-being of individuals and communities.

Community-based healthcare settings may include outpatient clinics, mobile clinics, home health, and healthcare centers. They can be located in a free-standing building, in a multipurpose room, or even in the basement of a building. The National Association of Community Health Centers provides information on how a community clinic can provide primary health care to patient populations who might otherwise have limited access to care. These patients may not have insurance, may not be able to afford the service, or may have barriers because of distance and language.

Types of Nursing Roles

Nursing roles can be diverse and multifaceted. Nurses serve as educators, teaching patients and families about disease prevention, medication management, and healthy lifestyle choices. Caregiving is also a fundamental nursing role, involving providing direct patient care, monitoring vital signs, administering medications, and supporting patients and families emotionally. As change agents, nurses are responsible for identifying areas of improvement in patient care and developing and implementing strategies to improve patient outcomes (Ten Ham-Baloyi, 2022). Collaboration is also essential for nurses, as they often work as part of a team with physicians, other healthcare professionals, and community organizations to ensure that patients receive coordinated and comprehensive care. Nurses serve as counselors, providing emotional support and guidance to patients and families facing health challenges. Finally, nurses act as patient advocates, ensuring that patients' needs and preferences are prioritized, and advocating for their rights to receive appropriate care. All the nursing roles are interconnected and critical to ensuring that patients receive the best possible care and that their health needs are met holistically. For example, nursing as a counselor also involves providing education and resources to patients and families (educator) to help them better understand their health conditions and make informed decisions about their care. Nurses as counselors also work with other healthcare professionals (collaborator), such as social workers and psychologists, to provide comprehensive support to patients and families (Table 4.8).

Role	Description	Example
Educator	Educating patients and their families about disease prevention, treatment options, medication management, and healthy lifestyle choices; providing education to their colleagues, sharing their expertise and knowledge to improve the quality of patient care; providing health education to schools, churches, and community organizations	A nurse leading a health education workshop about healthy lifestyles for patients
Caregiver	Providing direct patient care, monitoring patients' vital signs, administering medications, and performing various medical procedures; providing emotional support and comfort to patients and their families	A nurse providing the postsurgical care for a patient who has just had a gastrectomy

TABLE 4.8 Types of Nursing Roles

Role	Description	Example
Change agent	Identifying areas for improvement in patient care, developing strategies and implementing actions to bring positive change	A nurse leading a quality improvement project about preventing falls
Collaborator	Working as part of a team with other healthcare professionals to provide coordinated and comprehensive care to patients	A nurse working with the physician to implement a care plan for a patient with multiple organ failure
Counselor	Providing emotional support and guidance to patients and their families who are experiencing health challenges	A nurse providing diabetic foot care consultant service to a patient with diabetes
Patient advocate	Ensuring that patients' needs and preferences are prioritized and that they receive appropriate care	A nurse suggesting that the physician should talk to a patient who has some questions about his treatment

TABLE 4.8 **Types of Nursing Roles**

Educator

One of the key nursing roles is that of an educator, which refers to their critical role in educating patients and their families about disease prevention, treatment options, medication management, and healthy lifestyle choices. This education helps patients better understand their health conditions and empowers them to make informed decisions about their care (National League for Nursing, 2022). Nurses also provide education to their colleagues, sharing their expertise and knowledge to improve the quality of patient care. Additionally, nurses may serve as educators in community settings, providing health education to schools, churches, and community organizations. Nursing as an educator is essential to ensure that patients and their families have the information needed to manage their health and make informed decisions about their care.

Caregiver

The nursing role as caregiver is fundamental to patient care, where nurses provide direct patient care, monitoring patients' vital signs, administering medications, and performing various medical procedures. Caregiving also involves providing emotional support and comfort to patients and their families. Nurses spend a significant amount of time with their patients, developing a rapport and building trust. They play a crucial role in assessing patients' needs and ensuring that they receive individualized care that meets their physical, emotional, and spiritual needs. In addition to caring for their patients, nurses work to prevent complications and promote healing. They monitor patients' progress and collaborate with other healthcare professionals to develop and implement treatment plans. Nursing as a caregiver is essential to provide high-quality patient care and promote positive health outcomes.

Change Agent

The nursing role as **change agent** involves identifying areas for improvement in patient care, developing strategies and implementing actions to bring positive change. Nurses are often at the forefront of healthcare delivery and have a unique perspective on the challenges and opportunities for improvement in the healthcare system (Swanson et al., 2020). They play a critical role in implementing evidence-based practice and innovative solutions to improve patient outcomes (Ten Ham-Baloyi, 2022). As change agents, nurses collaborate with other healthcare professionals,

patients, and families to identify opportunities for improvement, develop goals and objectives, implement actions, and evaluate interventions (Ten Ham-Baloyi, 2022). They are also responsible for advocating for policy changes that promote high-quality patient care and patient safety. Nursing as a change agent is essential to improving patient outcomes and transforming the healthcare system to meet the evolving needs of patients and families.

Collaborator

The nursing role as a **collaborator** involves working as part of a team with other healthcare professionals to provide coordinated and comprehensive care to patients (Swanson et al., 2020). Nurses collaborate with physicians, social workers, physical therapists, and other healthcare professionals to develop and implement patient care plans (Swanson et al., 2020). They work together to ensure that patients receive the most appropriate and effective treatments and care that is delivered in a timely and efficient manner (Ten Ham-Baloyi, 2022). Collaboration also involves sharing knowledge and expertise, working together to identify areas for improvement, developing strategies and implementing actions to improve patient outcomes (Ten Ham-Baloyi, 2022). Nurses as collaborators also work with community organizations and other stakeholders to address the SDOH and promote health equity (Swanson et al., 2020). For example, nurses may work as collaborators to identify grants used to provide transportation to health services. To achieve this, nurses may partner with city governments, and public, private, and religious organizations to fund back-to-school initiatives (e.g., dental and vision clinics). They may collaborate with local branches of organizations like Mothers Against Drunk Driving, Alcoholics Anonymous, or the Department of Housing and Urban Development to raise funding or create community outreach programs. Overall, nursing as a collaboration is essential to providing high-quality patient care and promoting positive health outcomes for individuals and communities.

Counselor

The nursing role as a **counselor** involves providing emotional support and guidance to patients and their families who are experiencing health challenges. Nurses serve as trusted advisors and advocates, providing a listening ear, offering practical advice, and helping patients and families cope with the stress and anxiety that can accompany illness and treatment (Swanson et al., 2020). Overall, nursing as a counselor is essential to promoting patients' emotional well-being and supporting their overall health and recovery.

Patient Advocate

The nursing role as a **patient advocate** involves ensuring that patients' needs and preferences are prioritized and that they receive appropriate care. Nurses serve as the primary liaison between patients and the healthcare system, advocating for patients' rights to receive high-quality care that meets their individual needs (Abbasinia et al., 2020). Patient advocacy involves supporting patients in decision-making, providing information and resources, and helping patients and families navigate complex healthcare systems (Abbasinia et al., 2020). Nurses as patient advocates also work to identify and address barriers to care, such as financial, cultural, or linguistic barriers (Nsiah et al., 2019). They work collaboratively with other healthcare professionals and community organizations to promote health equity and ensure that all patients receive the care they need to achieve optimal health outcomes (Nsiah et al., 2019). Overall, nursing as a patient advocate is essential to promoting PCC and ensuring that patients' voices are heard and that their needs are met.

LINK TO LEARNING

Review the story of Florence Nightingale (https://Openstax.org/r/77flnighingale) who is a role model for nurses today. In her life, she worked as an educator, caregiver, change agent, collaborator, counselor, and patient advocate.

Competencies Utilized in Community-Based Health Care

Nurses who work in diverse community-based healthcare settings must possess a unique set of competencies to effectively care for patients. These competencies include the competencies for promoting healthy lifestyles, preventing diseases and health problems, educating the community, and evaluating the community. Nurses who possess these competencies are essential to providing high-quality care in community-based healthcare settings.

LINK TO LEARNING

This article describes critical thinking skills (https://Openstax.org/r/77critcthink) that are necessary for community-based nursing.

Promoting Healthy Lifestyles

Nurses play a vital role in promoting healthy lifestyles and preventing disease. To effectively promote healthy lifestyles, nurses must possess a range of competencies, including knowledge of health promotion and disease prevention, communication skills, assessment skills, and counseling skills. Nurses must be knowledgeable about healthy lifestyle practices, such as proper nutrition, exercise, and stress management, and be able to communicate this knowledge effectively to patients and communities (Kris-Etherton et al., 2021). Assessment skills allow nurses to identify patients' health needs and develop individualized plans of care that promote healthy behaviors (Kris-Etherton et al., 2021). Counseling skills enable nurses to effectively motivate and support patients to make positive health choices and change unhealthy behaviors. Nurses must also possess skills in behavior change theories and motivational interviewing techniques to effectively support patients in making lasting behavior changes. Overall, nurses who possess competencies in promoting healthy lifestyles are essential to improving the overall health and wellness of individuals and communities.

Preventing Disease and Health Problems

Nurses play a crucial role in preventing disease and health problems. To effectively prevent disease, nurses must possess competencies in health promotion and disease prevention, assessment, communication, and education (Frenn & Whitehead, 2021). Nurses must have a strong understanding of the risk factors for various diseases and the strategies to reduce those risks. They must also be able to assess patients' needs and develop tailored plans to prevent or manage diseases (Frenn & Whitehead, 2021). Communication and education are essential competencies for nurses to teach patients about healthy lifestyles, provide information on screening tests and vaccinations, and explain the importance of medication adherence (Greiner & Knebel, 2003). Nurses must also have knowledge of infection control and be able to identify and respond to outbreaks or other public health emergencies.

Educating the Community

Nurses play a vital role in educating the community on a range of health-related topics. To effectively educate the community, nurses must possess communication, cultural, and community outreach competencies. Nurses must be able to communicate health information in a clear and understandable manner and use appropriate teaching methods to reach diverse audiences. The ability to respect and understand one's own beliefs and values as well as how these values and beliefs may differ between cultures is cultural competence. This is essential in health care, as nurses must understand the unique cultural beliefs and values of the community to effectively communicate health information to best provide care and educate accordingly (Nair & Adetayo, 2019). Community outreach is another essential competency, as nurses must be able to establish and maintain relationships with community organizations, government agencies, and other healthcare providers to effectively reach and educate the community. Overall, health education competencies or skills enable nurses to develop and implement community health programs that promote healthy lifestyles and disease prevention. Nurses who possess competencies in community health education are essential to improving the overall health and well-being of communities.

Evaluating the Community

Nurses play a crucial role in evaluating the health status and needs of communities. To effectively evaluate communities, nurses must possess competencies in data collection, analysis, assessment, and program evaluation. Nurses must be able to collect and analyze data on the health status and needs of the community to identify health disparities and areas for improvement. Assessment skills allow nurses to identify the specific health needs of the community, and program evaluation skills enable nurses to assess the effectiveness of community health programs and interventions. Nurses must also possess knowledge of health policy and be able to advocate for policies that address the health needs of the community. Effective collaboration and communication skills are also essential, as nurses must work with community members, healthcare providers, and other stakeholders to develop, implement, and evaluate community health programs. Overall, nurses who possess competencies in community health assessment and program evaluation are essential to improving the health and well-being of communities.

At-Risk Populations Within Community-Based Health Care

Nurses play a critical role in caring for at-risk populations within community-based healthcare. An at-risk population includes individuals who face barriers to accessing healthcare services, have limited access to health care, or are marginalized. These populations include patients with disabilities, pediatric patients, older adults, individuals from underrepresented groups, people who are under- or uninsured, individuals with low incomes, immigrants, people experiencing housing insecurity, sexual and gender minority groups, and those with mental health or substance use disorders. Nurses must be able to identify and address SDOH, such as poverty and housing instability, which contribute to poor health outcomes among at-risk populations. Overall, nurses who possess competencies in caring for at-risk populations are essential to improving the health and well-being of marginalized communities.

PATIENT CONVERSATIONS

Identification of Patient Needs

Scenario: Nurse Barbara Rosencrantz works at a homeless shelter and has a patient named Delroy Barnes. Mr. Barnes is 29-years-old and has recently immigrated from Jamaica and is staying with his older brother. He is Rastafarian and wears a cloth wrap over his hair.

Nurse: Hello, Mr. Barnes. How are you?

Patient: Hello, Nurse. Please call me Delroy.

Nurse: Okay, Delroy. I was told that you wanted to speak to me. Are you looking for a bed for the night?

Patient: No, ma'am. The pastor at my sisters' church sent me here.

Nurse: Okay (nodding gently).

Patient: I'm not homeless, but I need information about work and other things.

Nurse: I see. I can definitely help you with that, but I need more information about exactly what your needs are.

Patient: Well, it's like this. I want to work, but every time I look for work, I have to do some paperwork. And I can't do the paperwork.

Nurse: I see. Delroy, in order to help you, I need to ask you some questions. I'm not trying to be intrusive, but I need some detailed information about you. Are you okay with that?

Patient: Go ahead, ma'am.

Nurse: Can you read and write, Delroy?

Patient: Oh yes, I can read and write. That's not the problem (laughing and nodding). The problem is that it's a lot of paperwork with fine print. Back home when I looked for work, I didn't have to do all this paperwork. Now I have to fill out these packets (raises his hands to show two packets of paper), and I can't read them.

Nurse: But Delroy, you just told me that you can read. Can you try to read one page for me?

Patient: That's the problem. I can read, but I can't read these papers because I can't see the words. It's too small, and my glasses don't work on these.

Nurse: Oh, I see. You need an eye exam from our eye clinic. So, Delroy, at this shelter we have a vision clinic every Tuesday and a dental clinic on Wednesdays. The service is free, and we provide glasses too.

Patient: Okay, I need to come on Tuesdays and Wednesdays then. Because I need glasses, and I need my teeth looked at. Can you tell me what else you have here? I don't have insurance, and I don't want to be a problem to my brother, you know.

Nurse: Definitely. I understand. So let me tell you about our schedule. We are a homeless shelter at night, but during the day we do the vision and dental clinics. We also do regular doctor visits like checkups. Dr. Martin will prescribe medications too if needed. Most of the medications are free or at a reduced price because the city and the

department of health help support this program financially. We have job fairs twice a month to support employment opportunities.

Patient: Thank you so much, Ms. Barbara. I will come back tomorrow for the eye clinic then. Thank you!

Patients With Disabilities

Nurses play an important role in caring for patients with disabilities, ensuring that they receive the highest quality care possible. According to the Americans with Disabilities Act (ADA), an individual with a disability is defined as "a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment" (ADA, 2020, para. 3). Caring for patients with disabilities requires nurses to possess competencies in PCC (Bezyak et al., 2020). Patient-centered care involves recognizing and respecting the unique needs and preferences of each patient and ensuring that their care is tailored to those needs. Nurses must be knowledgeable about the various types of disabilities and their impact on a patient's physical and mental health, as well as any accommodation that may be needed to provide optimal care (Bezyak et al., 2020). Some disabilities are invisible, meaning they are not immediately apparent or visible. Nurses must be aware of such disabilities and create an environment where patients can share about these disabilities. Nurses must respect visible and invisible disabilities and should work to support these patients in their healthcare and lifestyle needs. Nurses must also be able to educate patients with disabilities and their families on self-care management and promote the patient's independence and autonomy. Overall, nurses who possess competencies in caring for patients with disabilities are essential to ensuring that patients receive the highest quality care possible and achieve the best possible health outcomes.

PATIENT CONVERSATIONS

Discharging a Patient With a Disability

Scenario: Mr. Smith, a 38-year-old, has just had an amputation after a car accident. He is going to be discharged later today. The morning shift nurse walks into his room and begins their conversation.

Nurse: Good morning, Mr. Smith. How are you feeling today?

Patient: Hi, I'm feeling okay. I'm just a bit frustrated with my amputated leg.

Nurse: I understand that it can be frustrating at times. As your nurse, I want to make sure that I'm supporting you in the best way possible. How can I assist you today?

Patient: Well, since I am going to discharge today, I have some concerns that I want to discuss with you. I have been having some trouble with my mobility since the surgery, and I'm not sure what I can do to improve it. I feel like I'm not getting the same level of care as someone without a disability.

Nurse: I hear your concerns, and you're right that people with disabilities can face unique challenges. However, as your nurse, I'm here to make sure that you receive the best possible care regardless of your disability. I can work with you to come up with a care plan that takes into account your specific needs and limitations.

Patient: That sounds good. What can we do to start?

Nurse: Well, first, let's talk about your mobility concerns. Are there any particular activities that you're having trouble with?

Patient: Yeah, I'm having trouble with walking longer distances, and I'm worried that I won't be able to get the exercise I need to stay healthy.

Nurse: I understand. One thing we can do is to work with a physical therapist to develop an exercise plan that is tailored to your specific needs and abilities. We can also explore assistive devices like wheelchairs to help you move around more easily.

Patient: That sounds like it could help. But what about when I come to the clinic for appointments? I feel like I

struggle to get around the clinic, and it can be challenging for me to get into the exam room.

Nurse: I can help with that too. We can make sure that your appointments are scheduled in an accessible exam room that is easy for you to get into. We can also work with you to make any necessary accommodations, such as providing a wheelchair or a helper.

Patient: Thank you. That would be really helpful. I appreciate that you're taking my disability into consideration.

Nurse: Of course. It's my job to make sure that you receive the best possible care. If you have any other concerns or questions, please don't hesitate to ask. I'm here to support you.

Pediatric Patients

Nurses play a vital role in caring for pediatric patients, from newborns to adolescents. Caring for pediatric patients requires nurses to possess competencies in PCC, family-centered care, communication, and developmental assessment. As noted earlier in this chapter, patient-centered care involves recognizing and respecting the unique needs and preferences of each pediatric patient. This remains true in the pediatric population, where developmental stage and current needs underscore each decision made for the patient. Furthermore, in the pediatric population, family-centered care is most effective to meet the needs of the patient and family. This **family-centered care** involves recognizing and respecting the role of the family in the pediatric patient's care, including their preferences and priorities for their health decisions (Cincinnati Children's Hospital Medical Center, 2023). Effective communication skills are essential for nurses to communicate with pediatric patients and their families effectively, especially when providing education or discussing complex medical information. Developmental assessment skills allow nurses to evaluate and monitor the physical, cognitive, and emotional development of pediatric patients and intervene appropriately when necessary.

LIFE-STAGE CONTEXT

Considering Developmental Age in Pediatric Patients

While considering developmental level for all patients is important, it is foundational for success in pediatric nursing. Age often does not link directly to the developmental level of the patient, so the nurse must be able to assess each patient individually and cater care accordingly. For example, pain assessment will look different for each patient and may vary for the patient at different moments in time. While the numeric pain scale of 0 to 10 is generally approved for anyone over six years old, there are many patients over six years old who would benefit from an alternative pain assessment. Children who are nonverbal or are not able to understand the numeric system may utilize a visual scale system (such as the Wong-Baker FACES Pain Scale) instead. Additionally, the nurse can assess pain via vital signs and physiological changes in the patient.

Nurses must also be knowledgeable about pediatric illnesses and their management, including medication administration, pain management, and psychosocial support. Overall, nurses who possess competencies in caring for pediatric patients are essential to providing high-quality care and achieving positive health outcomes for children and their families.

Older Adults

Nurses play a critical role in caring for older patients, who require specialized care to address the unique physical, cognitive, and social needs that come with aging (Kim & Oh, 2020). Caring for older patients requires nurses to possess competencies in geriatric assessment. Geriatric assessment skills allow nurses to evaluate and monitor the physical, cognitive, and social function of older patients and intervene appropriately when necessary, such as addressing fall risk or managing chronic diseases like dementia or diabetes. Nurses must be knowledgeable about age-related changes in health and medication metabolism, as well as common geriatric syndromes such as delirium and frailty. Nurses must also communicate effectively with older patients and their families, especially when providing education or discussing complex medical information (Kim & Oh, 2020). Overall, nurses who possess competencies in caring for older patients are essential to ensuring that older patients receive high-quality care and achieve the best possible health outcomes in their later years.

Individuals From Underrepresented Groups

Nurses play a crucial role in caring for individuals from underrepresented groups, who may experience disparities in health outcomes due to SDOH, including racism, poverty, and inadequate access to health care. Nurses who work with individuals from underrepresented groups must engage with the community to understand the community's health needs and work collaboratively with other healthcare providers to promote health equity. They must provide patient education that is culturally appropriate and address any barriers to accessing care, such as language or transportation barriers (Joo & Liu, 2020). Nurses must also advocate for policies and programs that address health disparities and ensure access to high-quality care for all patients, regardless of their race or ethnicity (Joo & Liu, 2020). Overall, nurses who possess competencies in caring for individuals from underrepresented groups are essential to reducing health disparities and promoting health equity for all patients.

Underinsured/Uninsured

Nurses play a critical role in caring for people who are under- or uninsured, who may lack access to adequate health care due to financial barriers. Caring for these groups requires nurses to possess competencies in PCC, resource management, and advocacy. Patient-centered care involves working with persons who are under- or uninsured to develop affordable care plans that meet their needs. Resource management skills are essential for nurses to help patients access resources, such as medication assistance programs, community health clinics, and financial assistance programs. Nurses must also advocate for policies and programs that address healthcare access and affordability for all patients, regardless of their insurance status. Nurses can refer patients to appropriate and cost-effective resources for their care, focusing on preventive care. They must work collaboratively with other healthcare providers, social workers, and community organizations to ensure that patients receive comprehensive care that addresses their physical, emotional, and social needs. Nurses must also provide patient education that is tailored to the patient's insurance status and address any barriers to accessing care (e.g., a transportation barrier). Overall, nurses who possess competencies in caring for patients who are under- or uninsured are essential to promoting access to high-quality care and improving health outcomes for at-risk patients.

Socioeconomic Status

Nurses play a crucial role in caring for people with lower incomes, who may experience health disparities due to SDOH, such as poverty, lack of education, and inadequate access to health care. Nurses must consider the financial situation of people with lower incomes and help them access affordable resources, such as financial assistance programs, community health clinics, and social services, to promote health equity. They must work collaboratively with other healthcare providers, social workers, and community organizations to ensure that patients receive comprehensive care that addresses their needs. Nurses must also provide culturally appropriate patient education that is tailored to the patient's socioeconomic status. For example, nurses should never assume patients can safely afford prescribed medication or treatment tools. Instead, they should outline what will be needed, help assess any barriers for the patient to obtain or maintain access to these items, and work with the interdisciplinary team to develop solutions. Overall, nurses who possess competencies in caring for people with lower incomes are essential to promoting health equity and improving health outcomes for at-risk patients.

4.5 Community-Based Healthcare Initiatives

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the guidelines for implementation of community-based health initiatives
- Discuss the process for conducting a community health needs assessment
- Describe the nurse's role in education for community-based health care

Community-based health initiatives are important for improving the health and well-being of individuals and populations. Guidelines for implementation of such initiatives typically include a comprehensive community health needs assessment, stakeholder engagement, goal setting, and an action plan. Knowing the characteristics of community-based programs is an essential step before conducting the community-based health initiative. The elements of quality, respect, and empowerment related to the characteristics of community-based programs need to be considered to ensure the community-based health initiatives are effective and sustainable. Conducting a community health needs assessment is a crucial first step in identifying the health issues and priorities of the community and informing the development of relevant initiatives. Evidence-based tools, such as the Vulnerable

Populations Footprint (Center for Applied Research and Engagement Systems, University of Missouri Extension), can be used for the community health needs assessment. Nurses play a vital role in resource management, advocating for the implementation of evidence-based practices that address the identified health needs and educating the community about health care and promoting healthy behaviors. The steps for nurses planning education in the community-based health initiatives include prioritizing identified problems, setting goals and objectives, developing strategies, implementation, and evaluation. By working collaboratively with other healthcare professionals, community organizations, and local leaders, nurses can help to ensure the success of community-based health initiatives and contribute to the overall health of the community.

Guidelines for Implementation of Community-Based Health Initiatives

The implementation of community-based health initiatives requires a well-thought-out plan that takes into consideration the unique needs and characteristics of the community. Guidelines for implementation of such initiatives typically include a comprehensive needs assessment, stakeholder engagement, goal setting, and an action plan. A community health needs assessment should involve the identification of health priorities, existing health resources, and gaps in the provision of health services. Stakeholder engagement is important in identifying potential collaborators, understanding community values and beliefs, and building trust. Goal setting should be based on the identified needs and should be specific, measurable, achievable, relevant, and time bound. An action plan should outline the steps needed to achieve the goals, including timelines, resource allocation, and monitoring and evaluation strategies. Ongoing community involvement and partnerships are key to the successful implementation of community-based health initiatives.

LINK TO LEARNING

This link provides resources about planning strategies for accelerating health equity (https://Openstax.org/r/77healthequity) and information on different perspectives on the guidelines.

Characteristics of Community-Based Programs

Community-based programs are characterized by their focus on addressing the specific needs and challenges of a particular community. They are typically developed and implemented by local organizations or stakeholders who have a deep understanding of the community's culture, values, and resources. Community-based programs are characterized by several important elements, including quality, respect, and empowerment. By embodying these characteristics, community-based programs can create a culture of trust, engagement, and empowerment that leads to more effective and sustainable interventions (Table 4.9).

Characteristic	Description	Example
Quality	Providing evidence-based interventions and services that are effective, efficient, and responsive to the needs of the community	Use trained professionals who can deliver interventions with fidelity; use regular monitoring and evaluation to ensure that interventions are meeting intended outcomes
Respect	Acknowledging and valuing the perspectives, needs, and experiences of the community members who are being served	Create a culture of trust and engagement that values the contributions of community members
Empowerment	Giving community members a voice and agency in the program's decision-making processes	Involve community members in leadership roles, provide education and training opportunities, and create opportunities for community members to advocate for themselves and their needs

TABLE 4.9 **Characteristics of Community-Based Programs**

Quality

The term **quality** refers to the provision of evidence-based interventions and services that are effective, efficient, and responsive to the needs of the community. This involves ensuring that the program is staffed by trained professionals, that the interventions are based on best practices, and that there is a continuous cycle of monitoring and evaluation to ensure quality improvement. To achieve high-quality community-based programs, it is essential to prioritize evidence-based interventions that are grounded in best practices and have been demonstrated to be effective in similar contexts. This requires the use of trained professionals who can deliver interventions with fidelity, as well as regular monitoring and evaluation to ensure that interventions are meeting their intended outcomes. Quality can also be ensured using culturally appropriate interventions that are sensitive to the community's culture, values, and beliefs. Community involvement in program design and implementation is also key to ensuring quality, as it provides valuable feedback on the relevance and effectiveness of interventions. Ultimately, the quality of community-based programs is a function of ongoing collaboration, monitoring, and evaluation, as well as a commitment to providing effective, efficient, and culturally appropriate services to the community.

Respect

An important aspect of community-based programs is **respect**, acknowledging and valuing the perspectives, needs, and experiences of the community members who are being served. This involves creating a culture of respect within the program, actively listening to feedback from community members, incorporating their input into program design and implementation, and involving them in leadership roles and decision-making processes. Respect is a fundamental principle of community-based programs. To ensure that community-based programs are respectful, it is essential to create a culture of trust and engagement that values the contributions of community members. Respect can also be demonstrated by ensuring that interventions are culturally appropriate and sensitive to the community's values and beliefs. By prioritizing respect, community-based programs can establish strong relationships with the community and create a safe and supportive environment that promotes positive health outcomes.

Empowerment

Another key element of community-based programs is **empowerment**, giving community members a voice and agency in the program's decision-making processes. This includes involving community members in leadership roles, providing education and training opportunities, and creating opportunities for community members to advocate for themselves and their needs. Empowerment also involves creating a culture of trust and collaboration, where community members feel valued and supported in their efforts to improve their health and well-being. By prioritizing empowerment, community-based programs can promote a sense of ownership and investment in the program among community members, leading to more sustainable and effective interventions. Additionally, empowering community members can help to build individual and collective capacity within the community, allowing them to better address health disparities and other social determinants of health (SDOH).

Community Health Needs Assessment

The **Community Health Needs Assessment (CHNA)** is a systematic process of identifying the health needs and priorities of a specific community (Figure 4.6). This process involves the collection and analysis of various data sources such as demographic data, health outcomes, and health behaviors (CDC, 2022).

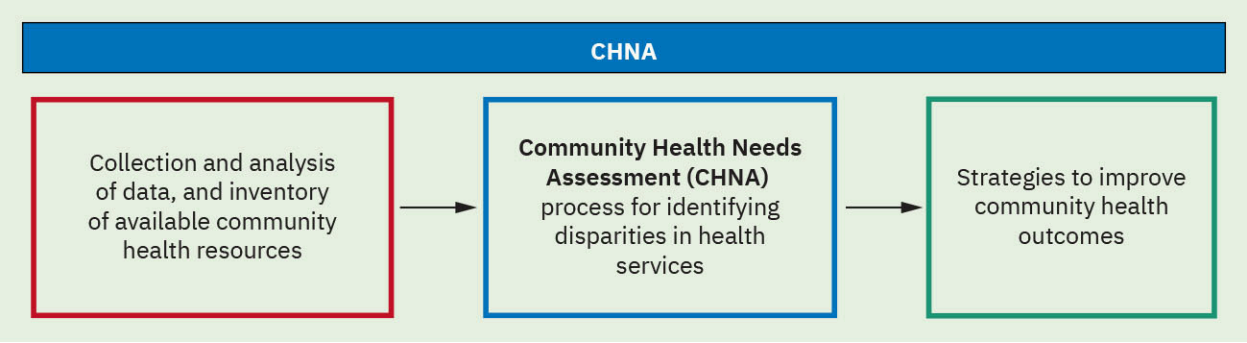

FIGURE 4.6 The CHNA process is a stepped approach that can help nurses identify the needs of a community and prioritize those needs to develop interventions. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The CHNA helps to identify health disparities and gaps in health services in the community. Community engagement is a critical component of the CHNA process, as it ensures that community members' perspectives and needs are incorporated into the assessment. This involvement can take many forms, including community forums, focus groups, and surveys. The results of the CHNA are then used to develop strategies and interventions to address the identified health needs and improve health outcomes in the community (Rayan-Gharra et al., 2022). The CHNA is an essential process for promoting community-based interventions that are tailored to the specific needs and characteristics of the community.

LINK TO LEARNING

The Community Health Assessment and Group Evaluation (CHANGE) tool includes five steps: commitment, assessment, planning, implementation, and evaluation. More information about the Community Health Assessment (https://Openstax.org/r/77commhealth) can be found on the CDC website.

Evidence-Based Tools Used for Needs Assessment

There are several evidence-based tools used for CHNA, which can be tailored to the specific needs and characteristics of the community being served (Table 4.10). One such tool is the Community Assessment for Public Health Emergency Response (CASPER), which is designed to rapidly assess the health needs of a community following a disaster or emergency (CDC, 2020). The Mobilizing for Action through Planning and Partnerships (MAPP) framework is another evidence-based planning tool that involves a comprehensive and collaborative approach to CHNA. By using evidence-based tools for CHNA, stakeholders can gain more comprehensive understandings of the health needs and priorities of the community that can inform the development of tailored interventions and strategies to address these needs (Ravaghi et al., 2023).

Tool or Technique	Description
Community Health Assessment and Group Evaluation (CHANGE) tool	The CHANGE tool (https://Openstax.org/r/77changetool) is a data-collection tool and planning resource to help make communities healthier.
Community Assessment for Public Health Emergency Response (CASPER)	The Community Assessment for Public Health Emergency Response (CASPER) (https://Openstax.org/r/77CASPER) is an epidemiological technique designed to provide public health leaders and emergency managers with household-based information about a community.

TABLE 4.10 **Community Health Assessment Tools**

LINK TO LEARNING

Information about the Mobilizing for Action through Planning and Partnership (MAPP) tool (https://Openstax.org/r/77mobforaction) and some other models to guide collaborative planning for communities (e.g., the Planned Approach to Community Health, the Community Health Improvement Process) can be found in the article "Models for Collaborative Planning in Communities."

Vulnerable Populations Footprint

The **Vulnerable Populations Footprint (VPF)** is a tool that can be used for CHNA, specifically to identify the most at-risk populations within a community. This tool uses data from the U.S. Census Bureau and other sources to assess factors that contribute to vulnerability, such as poverty, housing insecurity, limited English proficiency, and lack of transportation. The VPF provides a visual representation of vulnerability within a community by creating a map that highlights areas with high concentrations of at-risk populations. This tool can be used to target

interventions to the areas of greatest need and to ensure that at-risk populations receive equitable access to health services and resources. By using the VPF for CHNA, stakeholders can better understand the SDOH that impact at-risk populations and develop interventions that address the root causes of health disparities (Ravaghi et al., 2023).

LINK TO LEARNING

The Vulnerable Populations Footprint (https://Openstax.org/r/77vulnerablepop) is a mapping and report tool identifying locations with overlaps in high concentrations of populations living in poverty and populations living without a high school diploma.

Nurse's Role in Education for Community-Based Health Care

Nurses play a critical role in education for community-based health care. As frontline healthcare providers, nurses are uniquely positioned to educate and empower individuals, families, and communities to take an active role in their health and well-being. Nurses can provide education on a range of topics, including disease prevention, health promotion, medication management, and self-care. In community-based health care, nurses may work in a variety of settings, including clinics, schools, and community centers, and they may provide education through individual counseling, group sessions, or community outreach programs. Additionally, nurses can collaborate with other healthcare providers and community stakeholders to develop and implement educational programs that are tailored to the specific needs and characteristics of the community. By providing education and promoting health literacy, nurses can help to improve health outcomes, reduce health disparities, and promote community engagement and empowerment.

Verification of Identified Problems

In community-based health care, nurses play a crucial role in verifying identified problems and developing solutions to address these issues (Mathieson et al., 2019). Nurses can use a range of assessment tools and techniques to identify health problems and risk factors within a community, such as community health needs assessments, health screenings, and environmental assessments. Once these problems have been identified, nurses can collaborate with other healthcare providers and community stakeholders to develop and implement evidence-based interventions that address the root causes of these issues (Mathieson et al., 2019). Nurses can also monitor the effectiveness of these interventions and adjust as needed to ensure that they are achieving their desired outcomes. Additionally, nurses can provide ongoing education and support to individuals and communities to help them maintain their health and prevent future health problems. By playing an active role in verifying identified problems and implementing solutions, nurses can help to improve health outcomes and promote community empowerment and resilience.

Resource Management

Nurses play an important role in resource management for community-based health care. Resource management involves the allocation and optimization of resources, including personnel, equipment, and funding, to achieve the best possible health outcomes for individuals and communities. Nurses can play a key role in managing resources by ensuring that resources are allocated equitably, efficiently, and effectively to meet the needs of the community. They can also work with other healthcare providers and community stakeholders to identify and secure additional resources, such as grants or donations, to support community-based healthcare initiatives. Nurses can also use their expertise in clinical decision-making and evidence-based practice to make informed resource allocation decisions and ensure that resources are being used to support interventions and programs that have been shown to be effective in improving health outcomes. By playing an active role in resource management, nurses can help to ensure that limited resources are being used in the most effective and efficient manner to improve the health and well-being of individuals and communities.

Steps of Planning Education

The planning of education for community-based health care involves several important steps. The first step is to identify the target audience, assess their educational needs and preferences, and prioritize identified problems (Cutilli, 2020). This can be done through community needs assessments, surveys, and focus groups. The next step is to set clear goals and objectives that are measurable and achievable. These objectives should be based on the

identified educational needs and should be specific, measurable, attainable, relevant, and time bound. Once learning objectives have been established, the next step is to develop appropriate educational strategies and resources that are tailored to the needs and characteristics of the target audience. This may include written materials, audiovisual resources, interactive workshops, and community outreach programs. After implementing the interventions, the final step is to evaluate the effectiveness of the educational program through feedback from participants, pre- and posttests, and other evaluation methods (Cutilli, 2020). By following these steps, nurses and other healthcare providers can develop and implement educational programs that are tailored to the specific needs of the community and that promote health literacy and community engagement (Table 4.11) (Cutilli, 2020).

Step	Description
1) Prioritizing identified problems	• Review identified community needs and/or problems to determine how to best help at this time. • Prioritize problems, and choose a focus point.
2) Setting goals and objectives	• Set goals by determining the ideal outcome for the intervention. • Set objectives by identifying measurable actions to achieve the overall goal.
3) Developing strategies	• Based on the community, select education strategies. • Brainstorm multiple strategies, and select the best strategies for the current problem and population.
4) Implementation	• Implement outlined strategies based on the designed plan.
5) Evaluation	• Review the education process from start to finish. This includes each step of the planning and implementation process. During this step, goals and objectives will be measured for success. • After reviewing, determine if the intervention was effective and/or how things may need to change moving forward.

TABLE 4.11 **Steps for Nurses Planning Education in Community-Based Health Initiatives**

Prioritize Identified Problems

Prioritizing identified problems is a crucial step in the planning of education for community-based health care. Not all health problems identified through community needs assessments or other assessment tools can be addressed at once, and resources are often limited. Therefore, it is essential to prioritize the identified problems based on their severity, impact on the community, and feasibility of intervention, to make sure that limited resources are being used in the most effective and efficient manner. The prioritization process should involve input from community members, healthcare providers, and other stakeholders to ensure that the identified priorities are relevant and appropriate to the needs and characteristics of the community. Once priorities have been established, goals and objectives can be set up, and educational strategies and resources can be developed and implemented to address these issues.

Set Goals and Objectives

Setting goals and objectives is a critical step in planning education for community-based health care. Goals provide a broad and overarching vision for what the educational program aims to achieve, while objectives are specific, measurable, attainable, relevant, and timely steps that will lead to the attainment of these goals (Figure 4.7) (Bailey, 2019). When setting goals and objectives, it is essential to consider the identified health needs and characteristics of the community as well as the resources available for education and intervention. Goals and objectives should be

relevant, attainable, and aligned with evidence-based practices to ensure that they are achievable and effective in improving health outcomes. The process of setting goals and objectives should involve input from stakeholders to ensure that they are relevant and appropriate to the needs and characteristics of the community. By setting clear and measurable goals and objectives, healthcare providers can develop and implement educational programs that are focused and effective in addressing the identified health needs of the community.

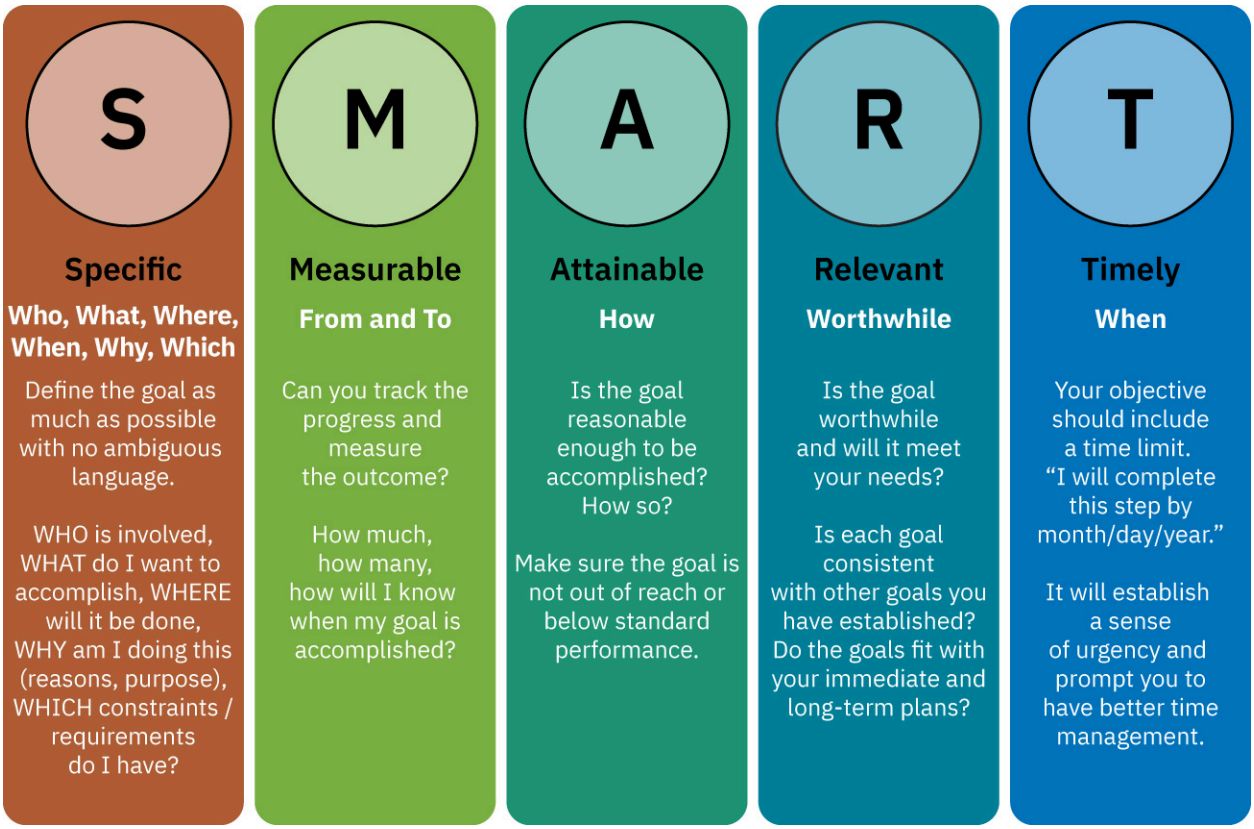

FIGURE 4.7 The acronym SMART can be used for setting goals when planning education for community-based health care. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Develop Strategies

Developing strategies is a crucial step in planning education for community-based health care. Once the goals and objectives have been established, healthcare providers must identify and develop appropriate educational strategies that are tailored to the needs and characteristics of the target audience (National Collaborating Centre for Methods and Tools, 2023). This may include a range of strategies, such as workshops, community outreach programs, written materials, and audiovisual resources. When selecting strategies, it is essential to consider the health literacy, cultural and linguistic diversity, and other characteristics of the target audience to ensure that the strategies are effective in engaging and educating them. The strategies should also be evidence based, feasible, and aligned with the goals and objectives of the educational program, and they should involve input from stakeholders. Additionally, behavioral change theories and models, such as the Health Belief Model, the Transtheoretical Model/ Stages of Change, and the Theory of Planned Behavior, could be utilized to develop appropriate educational materials. By developing and implementing tailored strategies, healthcare providers can promote health literacy and community engagement, and improve health outcomes in the community.

LIFE-STAGE CONTEXT

Developing Strategies Based on Age for Community-Based Health Initiatives

When planning education for community-based health initiatives, nurses must consider age-related matters to ensure the effectiveness of their interventions. Age-related factors, such as developmental stages, cognitive abilities, and health literacy levels, can affect how individuals perceive and respond to health information. Nurses

must adapt their teaching strategies and materials to meet the needs of different age groups, from children to older adults. For example, when nurses plan a community-based health initiative for older adults, they should consider the changing functions and needs of older people. Using a larger font in visual materials, giving brief and concise instructions, and repeating key information can help older people better obtain, understand, and remember information. By prioritizing these age-related matters in their planning, nurses can ensure that their education efforts are relevant, accessible, and meaningful to the community they serve.

Implementation

Implementation is a critical step in the planning of education for community-based health care. Implementation involves putting the plan into action, which may include scheduling and conducting workshops, developing and distributing written materials, conducting outreach programs, and delivering other educational resources (Cutilli, 2020). Healthcare providers must ensure that the educational program is implemented with fidelity to the strategies and objectives developed in the planning phase. This may involve monitoring and evaluating the implementation process to identify any barriers or challenges that may need to be addressed to ensure the program's success. The implementation process should involve stakeholders to ensure that the educational program is culturally appropriate and relevant to the needs of the community. By effectively implementing the educational program, healthcare providers can promote health literacy and community engagement and improve health outcomes in the community.

Evaluation

Evaluation is a crucial step in the planning of education for community-based health care. After implementing the educational program, healthcare providers must evaluate its effectiveness to determine whether the program's goals and objectives have been achieved. Evaluation involves measuring and analyzing the outcomes of the program and assessing whether the strategies used were effective in achieving the desired outcomes (Cutilli, 2020). Healthcare providers should use quantitative and qualitative data to evaluate the program's impact on the community's health outcomes, health behaviors, and health literacy. The evaluation process should involve stakeholders to ensure that their input is included in the assessment. This feedback can help healthcare providers make any necessary adjustments to the educational program, improve its effectiveness, and promote sustainability. By evaluating the educational program, healthcare providers ensure that they are providing quality education and resources that address the community's health needs and lead to improved health outcomes.

4.6 Population Health

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define the divisions of population health
- Recognize the goals of population health management
- Discuss the nurse's role in population health management

The health outcomes of a group of individuals including the distribution of those outcomes within the group is called **population health** (Silberberg et al., 2019). It takes into account the social determinants of health (SDOH) and the environmental factors that affect the health of the population. Population health is different from community health. The concept of population health is broader, compared to the concept of community health. Population health includes data representing the health condition of a specific group, while community health includes data representing the health condition of the residents in a community. The goals of population health management are to improve clinical care outcomes, integrate care across the delivery system, and address chronic and complex issues. To achieve these goals, nurses play an important role in population health management. As a primary care partner, nurses provide care for individuals and families while also working to improve population health outcomes. As a care coordinator, nurses help coordinate care for patients with complex medical needs. As a community-based facilitator, nurses work to improve health outcomes by engaging with community organizations and stakeholders. Finally, as an informatics specialist, nurses use technology and data to manage population health and improve patient outcomes.

Divisions of Population Health

Population health is a broad approach to health care that focuses on improving the health of entire populations,

rather than just treating individual patients. The four main divisions of population health are population involvement, improved health outcomes, patterns of health determinants, and policy revision (Silberberg et al., 2019). Each division plays a crucial role in ensuring the health and well-being of populations, and together, they form a comprehensive approach to population health. Population involvement means engaging with populations to understand the health needs and priorities of the population. Improved health outcomes focus on developing interventions and strategies to improve the health of the population (Silberberg et al., 2019). Patterns of health determinants involve understanding the factors that contribute to health outcomes, such as social, economic, and environmental factors (Silberberg et al., 2019). Policy revision focuses on advocating for policies that support population health.

Population Involvement

A critical component of population health is **population involvement**, which refers to the active engagement of populations in the design, implementation, and evaluation of programs and policies that affect their health and well-being. Population involvement can take many forms, such as population-based participatory research, patient engagement in healthcare decision-making, and involvement in public health campaigns. By involving populations in the process of addressing their health needs, the resulting solutions are more likely to be culturally appropriate, effective, and sustainable. Additionally, population involvement can promote health equity by addressing underlying SDOH and empowering populations to advocate for their own health and well-being. Overall, population involvement is essential for creating a truly comprehensive and effective approach to population health.

Improved Health Outcomes

Improved health outcomes are the ultimate goal of population health. Measurable improvements in the health status of individuals and populations are referred to as health outcomes. Population health seeks to improve health outcomes by addressing underlying determinants of health and promoting evidence-based interventions (Silberberg et al., 2019). By improving access to healthcare services, promoting healthy behaviors, addressing SDOH, and implementing policies that promote health equity, population health initiatives can lead to improved health outcomes, such as increased life expectancy, reduced rates of chronic diseases, and improved quality of life (QoL). Improving health outcomes is not only beneficial for populations but also has significant economic and social benefits. Overall, improving health outcomes is a critical component of population health and requires a collaborative effort among individuals, healthcare providers, policymakers, and communities.

Patterns of Health Determinants

Patterns of health determinants are the underlying factors that influence health outcomes of populations (Silberberg et al., 2019). Health determinants can be broadly categorized into social, economic, and environmental factors. Social determinants of health include factors such as education, income, and social support networks. Economic determinants of health include factors such as employment, income, and access to affordable housing. Environmental determinants of health include factors such as air and water quality, housing conditions, and access to green spaces. These determinants interact with each other to influence health outcomes, with some populations experiencing greater exposure to negative health determinants and fewer resources to address them. Understanding the patterns of health determinants is critical for developing effective population health strategies that address the underlying factors that contribute to health disparities. By identifying and addressing the root causes of poor health outcomes, population health initiatives can work to improve the health and well-being of all populations.

Policy Revision

Policy revision is a crucial component of population health as policies play a significant role in shaping the social, economic, and environmental factors that influence health outcomes. Policy revision involves reevaluating existing policies and developing new policies that better address the needs and priorities of populations (Centers for Disease Control and Prevention, 2021). This can include changes to healthcare policies, social welfare policies, environmental policies, and other policies that impact the health and well-being of populations. Policy revision requires a collaborative effort among policymakers, healthcare providers, community organizations, and other stakeholders to identify areas for improvement, gather input from affected populations, and implement evidence-based interventions. By revising policies to better reflect the needs and priorities of populations, population health initiatives can help to address health disparities and promote health equity. Overall, policy revision is an essential component of population health, as it can help to create supportive environments that enable populations to lead

healthy lives.

Goals of Population Health Management

The goals of population health management are to improve clinical care outcomes, integrate care across the delivery system, and address chronic and complex issues. Population health management is a proactive approach to health care that focuses on the health of entire populations rather than just individuals. The goals of population health management are achieved through a combination of strategies, including risk stratification, care coordination, patient engagement, and population health analytics. Risk stratification categorizes patients by health risk level to help determine allocation of resources. This process works seamlessly with care coordination, population health analytics, and patient engagement. By identifying and addressing the underlying determinants of poor health outcomes, population health management initiatives can help to prevent chronic diseases, reduce hospital readmissions and healthcare costs, and improve overall health outcomes and quality of care (World Health Organization, 2023).

Improving Clinical Care Outcomes

Improving clinical care outcomes is an important goal of population health management. This involves implementing evidence-based practices and strategies to improve the quality of clinical care delivered to patients (National Collaboration Centre for Methods and Tools, 2023). This can include implementing care coordination strategies, enhancing patient engagement, promoting preventive care, and optimizing the use of healthcare technologies. By improving clinical care outcomes, population health management initiatives can help to prevent the progression of chronic diseases, reduce hospital readmissions, and improve overall health outcomes. Additionally, improving clinical care outcomes can lead to increased patient satisfaction, which is an important component of quality care.

Integrating Care Across the Delivery System

Integrating care across the delivery system is a crucial goal of population health management. This approach involves connecting different components of healthcare services, including primary care, specialty care, behavioral health, and social services, to ensure that patients receive comprehensive and coordinated care (Farmanova et al., 2019). By integrating care, healthcare providers can more effectively manage patients' health needs, prevent duplicate services, and minimize unnecessary costs (Farmanova et al., 2019). This approach also enables healthcare providers to work collaboratively with patients and their families to develop personalized care plans that address their unique needs and preferences (Farmanova et al., 2019). Ultimately, integrating care across the delivery system is essential for improving the overall health outcomes of populations and reducing healthcare disparities.

Addressing Chronic and Complex Issues

Addressing chronic and complex issues is a significant goal of population health management. Chronic conditions, such as diabetes, heart disease, and obesity, are among the leading causes of morbidity and mortality worldwide. These conditions require long-term management and support, making them a significant challenge for healthcare providers and patients. Complex issues, such as mental health disorders and substance use, also require comprehensive approaches to improve outcomes. Population health management addresses these challenges by promoting proactive and preventive measures, promoting patient engagement and education, and providing coordinated and integrated care. The goal is to improve health outcomes, enhance patient experiences, and reduce costs by addressing the root causes of chronic and complex issues through a population health lens.

Nurse's Role in Population Management

Nurses play a crucial role in population health management. As the primary care partner, care coordinator, community-based facilitator, and informatics implementor, nurses have extensive interactions with patients and their families, making them well-positioned to identify health concerns and provide patient education and support. Nurses' involvement in population health management can help improve health outcomes, enhance patient experiences, and reduce healthcare costs by promoting preventive measures and proactive management of chronic conditions (Table 4.12).

Role	Responsibilities	Examples
Primary care partner	Collaborate with physicians, nurse practitioners, and other healthcare providers to provide comprehensive, patient-centered care to individuals and populations	Perform assessments, manage chronic conditions, provide patient education, and coordinate care with specialists and other healthcare providers
Care coordinator	Work with healthcare providers, patients, and their families to coordinate and manage patient care across multiple settings and providers	Assess patient needs, develop care plans, and communicate with providers to ensure that patients receive appropriate and timely care
Community-based facilitator	Work with community organizations and other healthcare providers to address social determinants of health that impact patient outcomes	Collaborate with community members and leaders to identify health concerns and develop strategies to promote health and prevent disease
Informatics implementor	Use electronic health records and other health information technology tools to manage patient data, monitor patient outcomes, and identify opportunities to improve care	Analyze population health data to identify trends

TABLE 4.12 Nurse's Role in Population Management

Primary Care Partner

Nurses can serve as primary care partners in population health management. As a primary care partner, nurses collaborate with physicians, nurse practitioners, and other healthcare providers to provide comprehensive, patient-centered care to individuals and populations. Nurses can take on a variety of roles in primary care, including performing assessments, managing chronic conditions, providing patient education, and coordinating care with specialists and other healthcare providers. They can also facilitate access to community resources and social services that address SDOH.

Care Coordinator

Nurses can also serve as care coordinators in population health management (Swanson et al., 2020). As care coordinators, nurses work with healthcare providers, patients, and their families to coordinate and manage patient care across multiple settings and providers (Duncan, 2019). They assess patient needs, develop care plans, and communicate with providers to ensure that patients receive appropriate and timely care (Duncan, 2019). Nurses also promote patient engagement and education, providing resources and support to help patients manage their health conditions effectively (Duncan, 2019).

PATIENT CONVERSATIONS

Nurses as Care Coordinators

Scenario: A conversation between Nurse Mita Kapoor and her patient Mrs. Rhonda White Feather.

Patient: Hello again, Mita.

Nurse: Good afternoon, Mrs. White Feather. How are you today?

Patient: Mita, I'm afraid that I'm not doing so good (sits down at the desk).

Nurse: Oh, no. I'm so sorry to hear that. Well, you are in the right place. How can I help you?

Patient: Well (pauses and dabs away a tear), I want you to cancel my doctor appointments for next month (wipes another tear). With Ron, my husband, working so much and teaching so many classes, it's too much for me.

Nurse: Okay (nodding). I am hearing that you are feeling overwhelmed. Is that how you feel?

Patient: It's just too much. I can't keep these doctors straight . . . who wants me to do what and go where . . . it's just too much for an old lady like me.

Nurse: Well, Mrs. White Feather, I can tell that you are overwhelmed and very stressed. I don't want you to feel like that at all. It is a lot of appointments and information. Ron and I worked together to keep it all straight. Now that he is helping more at the school, he cannot help as much. However, I am still here, and now that I know about this, I can help you to keep it all straight.

Patient: Oh, Mita, that would be wonderful.

Nurse: Awesome. I already spoke with your cardiologist, your nephrologist, and your neurologist. But now that I know what's going on, I can work more closely with you.

Patient: Mita, I forget who is who and what I'm supposed to tell them.

Nurse: That is a lot to remember. I want to help you with this. I always speak to them every Monday. We go over your weekly lab values and then make adjustments to your plan of care. Now I will call you after I speak with them and go over any changes we need to make. I will also tell you if you have to come in for labs in that week.

Patient: That would be great, Mita. Last week I came in when I didn't have to. I felt like such a fool (shakes her head).

Nurse: Oh, no! You made that trip for nothing. I don't want that to happen again.

Patient: Ron was annoyed, but he loves me too much to be upset with me.

Nurse: Well, we are going to work together to make sure that it never happens again. I'm going to make sure you know when to come in and where to go. I will also make sure that all your medications are safe to be taken together.

Patient: (laughing) I remember when you had the pharmacy change my night medicine to liquid because it was easier for me to take. Ron said I was a baby. But that big pill made me throw up.

Nurse: Mrs. White Feather, that is what I am here for. I am here to make sure all your doctors are kept up to date and know what is going on with you. And I'm here to make sure you understand what is happening, when, and why.

Patient: Ron and I joke that you are the best gossiper we know (laughing)!

Nurse: (laughing) I am kind of a busybody. But that's okay as long as you are safe and everybody knows what's going on with your health.

Community-Based Facilitator

Nurses can also serve as community-based facilitator in population health management. In this role, nurses work with community organizations and other healthcare providers to address SDOH that impact patient outcomes. They collaborate with community members and leaders to identify health concerns and develop strategies to promote health and prevent disease (Swanson et al., 2020). Nurses can also provide health education, screening, and counseling services to community members and facilitate access to community resources that address SDOH, such as food insecurity, housing instability, and access to transportation (Swanson et al., 2020). For example, nurses can connect their patients with food banks, local charities, or facilities where they can receive free or discounted care. Nurses can work with other team members, such as social workers, to link patients with resources that can help them and their family.

Informatics Implementor

Nurses can also serve as **informatics implementor** on population health management. In this role, nurses use electronic health records (EHRs) and other health information technology (HIT) tools to manage patient data, monitor patient outcomes, and identify opportunities to improve care. Nurses also work with healthcare providers to develop and implement clinical decision support systems that provide real-time alerts and recommendations to clinicians based on patient data (Swanson et al., 2020). Nurses in this role can also analyze population health data to identify trends, track outcomes, and develop strategies to improve health and prevent disease (Swanson et al.,

2020).

Summary

4.1 Defining Health and Wellness

Health and wellness are vital components of overall well-being. Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Wellness is the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health. Human dimensions of health include five aspects, encompassing physical, emotional, social, intellectual, and spiritual health. Wellness includes eight mutually codependent dimensions: physical, emotional, social, occupational, spiritual, intellectual, environmental, and financial wellness. The most used model for wellness is Dunn's Theory of Wellness, including four processes: being, belonging, becoming, and befitting. The Healthy People 2030 initiative is a nationwide endeavor in the United States that aims to improve public health and prevent diseases by setting core, developmental, and research objectives concerning different health areas. The SDOH, including economic stability, healthcare access and quality, education access and quality, neighborhood and built environment, and social and community context, are significant factors that influence health outcomes and inequalities. By analyzing these determinants, the root causes of health disparities can be identified, and policies can be formulated to promote health equity. To achieve optimal health outcomes for individuals and communities, it is crucial to comprehend the interdependence of health, wellness, and community-based health care. The Healthy People 2030 initiative highlights the most critical needs of the nation and outlines concrete objectives on how to achieve health goals.

4.2 Models of Health

Models of health are conceptual frameworks that guide healthcare providers to understand and promote health. Various nursing models used in patient care include the HBM, HPM, Holistic Health Model, and Maslow's hierarchy of needs model. These models assist in assessing patient needs, developing care plans, and evaluating patient outcomes. These models guide nursing practices that emphasize providing comprehensive care to patients. Medical models used by nurses when providing patient care include the religious model, humanistic model, and transpersonal model. These models provide approaches to understanding and treating illness. Models for health and illness, such as the biomedical model, psychosomatic model, and existential model, explain the factors that influence health behaviors and can guide interventions to improve health outcomes. Models help healthcare providers understand and explain the complex interactions between the biological, psychological, social, and environmental factors that contribute to a person's health status. Understanding these various models can help nurses provide holistic care to patients, addressing the physical, psychological, and social aspects of health.

4.3 Health Promotion and Illness Prevention

Global strategies for health promotion include implementing policies and programs that promote healthy lifestyles, creating supportive environments for healthy behaviors, strengthening community action for health, and developing personal skills for health. These strategies involve effective governance for health, improving health literacy, and building or creating healthy cities, which improve health and prevent illness at the population level. The levels of prevention include primary, secondary, and tertiary prevention. Primary prevention aims to prevent the onset of disease through interventions that target risk factors and promote healthy behaviors. Secondary prevention focuses on early detection and treatment of disease to prevent complications and further progression. Tertiary prevention aims to reduce the impact of disease and disability through rehabilitation and management. The application of these strategies and levels of prevention to patient care involves identifying individual risk factors and addressing them through targeted interventions. This may include lifestyle modifications, such as increasing physical activity and improving diet, as well as screening for early signs of disease and medication management. Factors influencing a patient's risk of illness include inherent factors, lifestyle factors, and environmental factors. Understanding these factors can help healthcare providers develop personalized prevention and treatment plans for each patient. The impact illness has on health promotion can vary depending on the stage and severity of the disease. Illness can have a negative impact on a patient's emotion and behaviors, lead to further body image and self-concept problems, and add stress and strain to the family members. However, effective management and treatment of illness can be a key component of health promotion, improving overall health and preventing further complications.

4.4 Community-Based Health Care

Nurses play a crucial role in community-based health care as educator, caregiver, change agent, collaborator,

counselor, and patient advocate. They must have a variety of competencies to provide high-quality care, including promoting healthy lifestyles, preventing disease and health problems, educating the community, and evaluating the community. Nurses also work with diverse populations, including at-risk populations such as patients with disabilities, pediatric patients, older adults, individuals from underrepresented groups, people who are under- or uninsured, and patients with low socioeconomic status. Nurses in community-based healthcare settings are essential in improving health outcomes and addressing health disparities among at-risk populations.

4.5 Community-Based Healthcare Initiatives

Community-based health initiatives are essential for improving the health and well-being of communities, and their implementation requires adherence to guidelines that include community involvement, stakeholder engagement, and sustainability planning. Successful community-based programs are characterized by quality, respect, and empowerment, with a focus on addressing the specific health needs and priorities of the community. Conducting a CHNA is a critical step in identifying these health issues and informing the development of relevant initiatives. Tools such as evidence-based tools, the CDC CHSI, and the VPF can be used to assess community health needs. Nurses play a vital role in educating the community about health care and promoting healthy behaviors as well as managing resources and advocating for the implementation of evidence-based practices that address the identified health needs. To effectively plan education for community-based health initiatives, nurses must prioritize identified problems, set goals and objectives, develop strategies, implement interventions, and evaluate outcomes. By following these guidelines and steps, nurses can ensure that their education efforts are relevant, accessible, and meaningful to the community they serve.

4.6 Population Health

Population health is divided into four divisions, including population involvement, improved health outcomes, patterns of health determinants, and policy revision. The goals of population health management include improving clinical care outcomes, integrating care across the delivery system, and addressing chronic and complex issues. Nurses play an essential role in population health management, taking on different roles such as a primary care partner, care coordinator, community-based facilitator, and informatics specialist. These roles involve working with patients, families, healthcare providers, and community organizations to improve health outcomes and address the SDOH. Nurses can use their skills and knowledge to promote health equity, facilitate access to care, and provide support for populations to manage chronic and complex health issues.

Key Terms

at-risk population includes individuals who face barriers to accessing healthcare services, have limited access to health care, or are marginalized (e.g., patients with disabilities, pediatric patients, older adults, individuals from underrepresented groups, people who are under- or uninsured, individuals with low incomes, immigrants, people experiencing housing insecurity, and those with mental health or substance use disorders)

becoming an individual's pursuit of personal growth and self-improvement, as well as their openness to new experiences and perspectives

befitting taking proactive self-care strategies and personal responsibility to make personal choices to benefit one's well-being

being recognizing oneself as an individual and actively working to achieve a state of high-level wellness in all eight dimensions

belonging the feeling of being accepted, valued, and supported by others, as well as the sense of belonging to a larger community or group

biomedical model model of health that focuses on diagnosing and treating specific physical diseases or disorders using medical interventions such as drugs or surgery

change agent nursing role that involves identifying areas for improvement in patient care and developing and implementing strategies to bring about positive change

collaborator nursing role that involves working as part of a team with other healthcare professionals to provide coordinated and comprehensive care to patients

Community Health Needs Assessment (CHNA) a systematic process of identifying the health needs and priorities of a specific community

counselor nursing role that involves providing emotional support and guidance to patients and their families who

are experiencing health challenges

Dunn's Theory of Wellness also known as High-Level Wellness Model, defines wellness as an ongoing process of growth and development that encompasses all aspects of an individual's life

emotional dimension of wellness actions to increase self-awareness and self-regulation to manage emotions in a healthy and constructive way, including strategies to cope with stress and adversity and promote positive emotions

emotional health an individual's ability to manage and express their emotions, cope with stress, and experience positive emotions

empowerment giving community members a voice and agency in a program's decision-making processes

environmental dimension of wellness actions to achieve a good relationship with the surrounding environment, including access to clean air and water and a safe and healthy living and working environment

environmental factors physical, chemical, biological, and social factors that affect the quality of air, water, food, and the general environment

existential model model of health that emphasizes the subjective experience of individual existence and the search for meaning in life

family-centered care recognizing and respecting the role of the family in the pediatric patient's care, including their preferences and priorities for their health decisions

financial dimension of wellness actions to achieve financial stability to meet basic needs and experience a sense of financial security

governance for health the process of developing and implementing policies, strategies, and actions that support and promote the health and well-being of individuals and communities

Health Belief Model model of health that emphasizes the importance of an individual's beliefs and attitudes in shaping health behaviors

health equity when everyone has a fair opportunity to obtain optimal health

health outcomes the measurable improvements in the health status of individuals and populations

Health Promotion Model model of health that takes a holistic approach to health and wellness

Healthy Cities a strategy that focuses on creating environments that support the health and well-being of their residents

hierarchy of needs created by Abraham Maslow, a pyramid-shaped model that includes five levels of needs: physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs

holistic approach addressing the whole patient to assess and treat all facets of the person

Holistic Health Model comprehensive model of health that takes into account the physical, emotional, social, and spiritual aspects of health and wellness

human dimensions facets of wellness that interrelate to demonstrate a comprehensive view of health; include emotional, physical, social, intellectual, and spiritual aspects of illness and wellness

humanistic model model of health that focuses on the importance of the individual and their personal experience and emphasizes the need for patient-centered care that recognizes the unique needs and values of each patient

informatics implementor a nurse who uses electronic health records (EHRs) and other health information technology (HIT) tools to manage patient data, monitor patient outcomes, and identify opportunities to improve care

inherent factors the individual, nonmodifiable characteristics that can influence the risk of illness, which include genetics, age, and sex

intellectual dimension of wellness actions to acquire new skills and generate new knowledge

intellectual health individuals' ability to acquire new skills, think critically, and engage in creative activities

leading health indicators cohesive set of indicators of health and well-being across the life span, encompassing all aspects of health

levels of prevention different stages or approaches that can be taken to prevent the occurrence of a health condition or disease

lifestyle factors individual behaviors and habits that can influence the risk of illness, which include tobacco and alcohol use, poor diet, physical inactivity, and stress

medical models approaches to understand and treat illness; view health as the absence of disease or illness and focus on identifying and treating physical symptoms and underlying medical conditions through medical interventions, such as medications, surgeries, and other medical procedures

models of health conceptual frameworks that guide healthcare providers to understand and promote health
nursing models conceptual frameworks that draw from other frameworks to guide nursing practice and provide comprehensive care to patients, emphasizing the importance of considering the whole person and taking a holistic approach to health and wellness
occupational dimension of wellness actions to achieve job satisfaction, work–life balance, and personal growth and development
organizational health literacy focuses on how an organization can help individuals find and use health information for themselves to make decisions about their health and wellness
patient advocate nursing role that involves ensuring that patients' needs and preferences are prioritized and that they receive appropriate care
personal health literacy focuses on the ability of a single person to comprehend and use health information
physical dimension of wellness actions to maintain individual's physical health, including nutrition, exercise, sleep, and regular medical checkups
physical health individual's ability to perform daily activities, maintain healthy body weight, and prevent illness and disease
population health the health outcomes of a group of individuals, including the distribution of those outcomes within the group
population involvement the active engagement of communities and individuals in the design, implementation, and evaluation of programs and policies that affect their health and well-being
primary prevention the first level of prevention that aims to avert the onset of a disease or health condition before it occurs
psychosomatic model model of health that stands on the idea that psychological factors, such as emotions, beliefs, and personality traits, can have a direct impact on physical health
quality the provision of evidence-based interventions and services that are effective, efficient, and responsive to the needs of the community
religious model framework or system of beliefs that serves as a guide for individuals or communities to understand and relate to a higher power or spiritual reality
respect acknowledging and valuing the perspectives, needs, and experiences of the community members who are being served
secondary prevention the second level of prevention that aims to detect and treat a disease or health condition in its early stages to prevent complications and progression
social determinants of health (SDOH) conditions associated with birth, childhood, education, work, play, worship, and aging that impact health, functioning, and quality-of-life outcomes
social dimension of wellness actions to maintain healthy and positive relationships with others, including utilization of communication skills and social support to achieve a sense of belonging
social health individuals' ability to participate in social activities, interact with others, and experience a sense of belonging and connection
spiritual dimension of wellness actions to achieve personal values, including reinforcement of beliefs and practices that promote inner peace, happiness, and fulfillment
spiritual health individuals' ability to achieve personal values
tertiary prevention the third level of prevention that aims to manage and treat the complications of a disease or health condition to prevent disability or death
transpersonal model model of health that proposes that beyond the adult ego, there are developmental stages that involve experiences of connectedness with phenomena considered outside the boundaries of the ego
Vulnerable Populations Footprint (VPF) a tool that can be used for community health needs assessment, specifically to identify the most at-risk populations within a community

Assessments

Review Questions

1. John is a public health professional who is passionate about promoting health and preventing disease. He is interested in learning about the Healthy People 2030 initiative. What is the goal of this initiative?
    a. to increase the prevalence of chronic diseases in the population

b. to decrease the number of people with access to health care
c. to improve the health and well-being of all individuals and communities
d. to decrease the use of evidence-based practices in health care

2. Sarah is a community health worker who is working with a family struggling with poverty. Which SDOH is likely to have the greatest impact on the family's health outcomes?
a. healthcare access and quality
b. education access and quality
c. neighborhood and built environment
d. economic stability

3. The nurse is discussing foundational concepts of community-based nursing care. Which concept is the nurse describing when stating, "this concept refers to the comprehensive view of physical, mental, emotional, and social well-being and not simply the absence of disease or illness"?
a. wellness
b. health
c. cultural competence
d. befitting

4. What is an example of an intervention that a nurse can use to address the perceived barriers to a patient's health behavior, as outlined in the HBM?
a. providing educational resources on the relationship between healthy behaviors and diseases
b. offering financial incentives for behavior change
c. helping the patient identify available social support networks
d. scheduling follow-up appointments to monitor progress

5. Mr. Brown, a 68-year-old male, is diagnosed with type 2 diabetes. He is currently taking medication to manage his blood glucose levels. He asks the nurse, "What more can I do to manage my diabetes?" If a nurse were responding to this question in a way that reflected the limitations of the biomedical model of care, what might she say?
a. "It's important to keep taking your medication and incorporating some exercise to manage your diabetes."
b. "There's not much more you can do beyond taking your medication. Your compliance to the medication is the only way you can manage your diabetes."
c. "We can focus on managing your symptoms and preventing complications of diabetes, such heart and kidney diseases."
d. "Let's explore some lifestyle changes you can make, such as improving your diet, to better manage your diabetes.

6. A nurse would like to use a medical model of health when planning a care plan. The nurse selects a model that emphasizes the importance of personal growth in achieving optimal health and well-being, involving development beyond the adult ego. Which model has the nurse selected?
a. transpersonal model
b. religious model
c. humanistic model
d. Holistic Health Model

7. A 55-year-old male patient visits the clinic for his annual checkup. He reports having a family history of cardiovascular disease and is concerned about his risk of developing heart disease. Which level of disease prevention would be most appropriate for this patient?
a. primary prevention
b. secondary prevention
c. tertiary prevention

d. quaternary prevention

8. A patient with chronic obstructive pulmonary disease (COPD) expresses concern about the impact the illness has on his ability to engage in health-promoting activities. What would be the best response from the nurse?
   a. "It's understandable that you're feeling discouraged, but you should still try to engage in some form of exercise."
   b. "It's important to listen to your body and not push yourself too hard, but there are still ways you can promote your health."
   c. "With COPD, there's not much you can do to promote your health. You just have to focus on managing your symptoms."
   d. "You should avoid any physical activity that makes you short of breath. Just take it easy and rest."

9. What is the nurse's role as a patient advocate?
   a. to make medical decisions for the patient
   b. to ensure the patient's wishes are respected and their rights are upheld
   c. to prioritize the needs of the healthcare facility over the patient's needs
   d. withhold information from the patient in the interest of their well-being

10. What strategy can nurses use to provide culturally sensitive care to patients from underrepresented groups?
   a. engage in self-reflection and education to become aware of their own biases
   b. avoid discussing cultural beliefs or practices with patients to avoid causing offense
   c. use standardized treatment protocols that are not tailored to individual patient needs
   d. focus on evidence-based practice and ignore the patients' cultural beliefs

11. What is a characteristic of successful community-based programs?
   a. quality
   b. cost-effectiveness
   c. efficiency
   d. effectiveness

12. Which tool is commonly used for conducting a community health needs assessment?
   a. CASPER
   b. Health Impact Assessment (HIA)
   c. Rapid Assessment and Response (RAR)
   d. Participatory Action Research (PAR)

13. The nurse is developing an educational plan regarding community-based initiatives. Problems within the community have been identified, and one specific program has been prioritized for this education plan. What is the next step in the planning process?
   a. developing strategies
   b. setting goals
   c. implementing interventions
   d. evaluating

14. Which is not a division of population health that nurses should be familiar with?
   a. population involvement
   b. patterns of health determinants and risk factors
   c. policy revision
   d. access to healthcare services

15. Which statement shows the nurse has a wrong understanding about the goals of population health management?
   a. "Improving patient care outcomes is very important in population health management."

b. "We should enhance patient engagement in their own care, which is one of our population health management goals."
c. "Chronic and complex health issues are something we need to work on in population health management."
d. "Integrating care across the delivery system should always be considered."

Check Your Understanding Questions

1. Describe how you can incorporate the five SDOH into your daily clinical setting.
2. Compare and contrast the different models for health and illness.
3. Describe how you can incorporate the three levels of prevention into your daily clinical settings when you take care of your patients.
4. Outline global health strategies for health promotion. Identify one example of a global health strategy you have witnessed or experienced.
5. Describe the concept of family-centered care. How can it be used in your future nursing practice?
6. Based on your understanding and experience, describe the nurse's role in education for community-based health care.
7. How would the nurse's role in addressing chronic and complex patient concerns differ in a community-based setting versus providing individualized patient care?

Reflection Questions

1. What nursing model might you consider incorporating into your daily nursing care activities? How do you incorporate it into your daily nursing care activities?
2. Consider yourself as a patient, and write three inherent factors, three lifestyle factors, and three environmental factors that are either influencing your health currently or have impacted your health in the past. Are there any changes you wish to make currently or changes you made in the past regarding these factors to improve health?
3. Reflect on what competencies you may lack or want to improve when you engage in community-based health care. Describe how you could improve these competencies.
4. Review the types of nursing roles in community-based health care. Which roles do you feel you would enjoy, and which do you feel may take more practice to refine? Explain.
5. How can you incorporate the goals of population health management into your daily practice to better serve the health needs of your patients and your community?

What Should the Nurse Do?

Sofia is a 48-year-old Latina who lives in a neighborhood with people with low incomes. She has recently been diagnosed with type 2 diabetes and has struggled to manage her blood sugar levels due to a lack of access to healthy food options and limited physical activity opportunities. She has also experienced discrimination and language barriers when seeking healthcare services. Based on the case, please answer the following questions.

1. How do economic stability, healthcare access and quality, neighborhood and built environment, and social and community context impact Sofia's ability to manage her diabetes effectively?
2. What are some potential strategies to improve Sofia's access to healthy food options and increase her opportunities for physical activity?
3. How might Sofia's experiences with discrimination and language barriers affect her willingness to seek healthcare services and adhere to her treatment plan?
4. How can healthcare providers work to address the SDOH that impact Sofia's health outcomes and disparities?
5. How might Sofia's experiences with discrimination and language barriers impact her mental health and well-being, and what interventions could healthcare providers implement to address these factors?
6. What should the nurse do if a patient expresses a desire to improve their physical health but is resistant to

making any lifestyle changes or following through with the nurse's recommendations?

7. What should the nurse do if a patient expresses worry about the impact of their illness on their emotions and behaviors, body image and self-concept, and family members' lives?
8. What should the nurse do if they encounter at-risk populations within community-based health care?

Competency-Based Assessments

1. Form a group of peers (recommended: two to five people) and develop a patient's case, write the plan of care focusing on one of the five SDOH each, and discuss the topic further.
2. Based on a medical model described in this chapter, develop a nursing care plan to promote the health of a patient.
3. Based on the steps of planning education, develop and deliver a ten-minute PowerPoint presentation about your plan for providing a health education workshop for a community.
4. Form a group of peers (recommended: two to five people), and discuss how you would demonstrate your competency as a nurse in fulfilling the role of a care coordinator in population health management.

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CHAPTER 5
Cultural Competence

FIGURE 5.1 A culturally diverse community finds its strengths in its differences. (credit: "School diversity many hands held together," by "Wonder woman0731"/Flickr, CC BY 2.0)

CHAPTER OUTLINE

5.1 Understanding Cultural Differences
5.2 Ethical Practice in Culture and Diversity
5.3 Cultural Practice in Nursing
5.4 Diversity, Equity, and Inclusion

INTRODUCTION Every person in the world belongs to a culture. Culture shapes one's personal identity, influences social relationships, and contributes to the overall richness of human societies. Basic elements of culture include language, symbols, societal norms and customs, beliefs, values, and cognitive elements (such as learning to cope, managing difficult situations, and qualities taught to children). Culture plays a significant role in health and wellness, as it can affect what types of medicines and treatments to use, who is allowed to provide care, and beliefs about what causes illness and injury.

The United States has long had a reputation as a multicultural nation, and according to the United States Census Bureau (2020), it continues to grow even more racially and ethnically diverse every year (Jensen, 2022) (Figure 5.2). Nurses will interact with patients who belong to diverse cultures, both distinct from each other and distinct from the nurses' own cultural background. It is crucial for nurses to understand and accommodate cultural differences, ensuring the delivery of the best possible care to all patients, regardless of their cultural background. This chapter discusses how to gain a better understanding of cultural differences among the patients who nurses serve as well as ethical and cultural practices in nursing and how to incorporate diversity and inclusion as best practice standards.

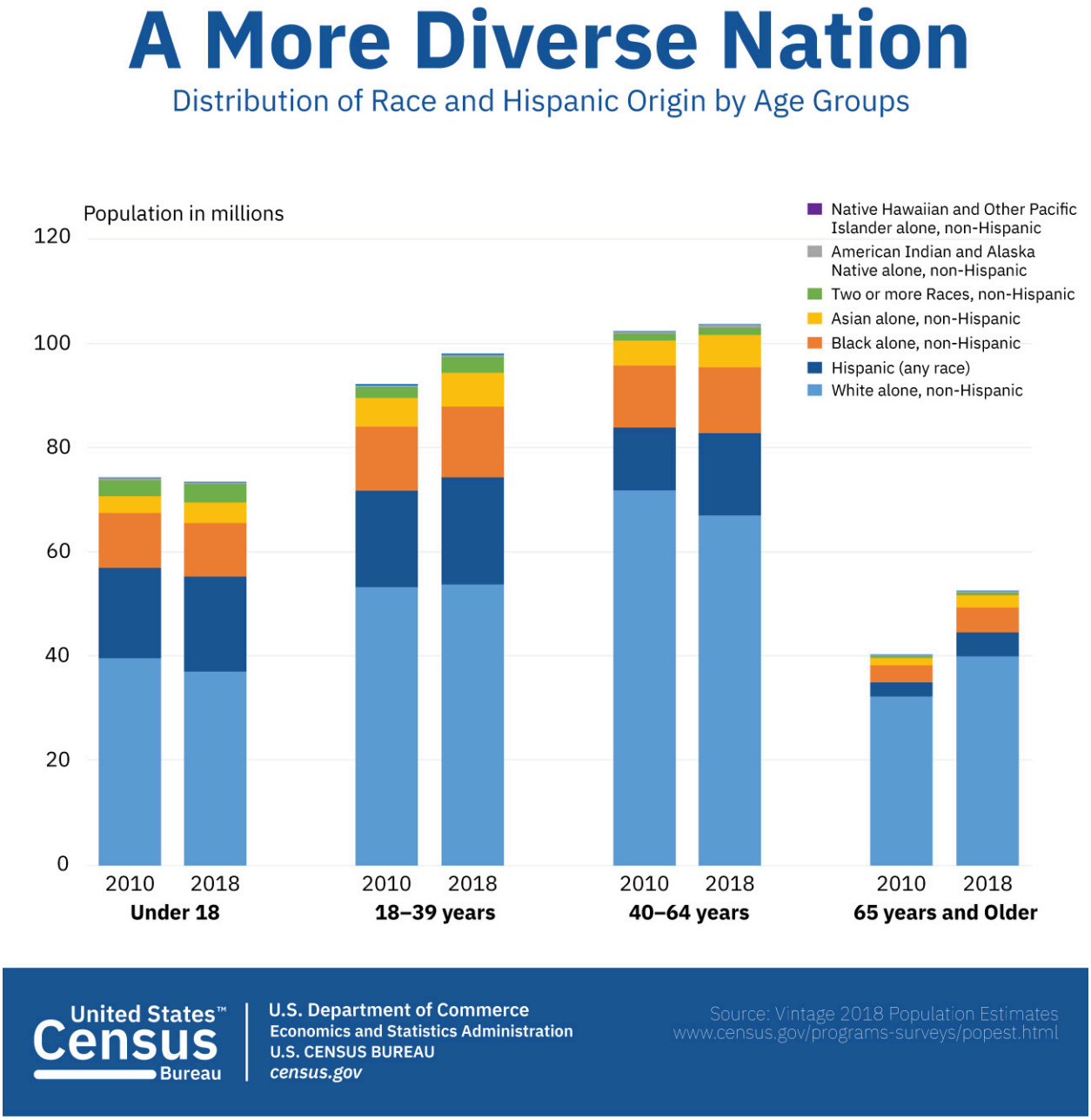

FIGURE 5.2 Census.gov tracks demographic data from year to year in the United States. This chart illustrates the increasing diversity of the nation across various age groups over time. (credit: "A More Diverse Nation" by US Census Bureau, Public Domain)

5.1 Understanding Cultural Differences

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify cultural influences on beliefs of health and illness
- Recognize health disparities among different cultures
- Describe different healers among cultural variations
- Explain how to counteract unconscious bias

Nurses encounter patients from a variety of backgrounds; therefore, it is essential they are able to provide culturally competent care. A lifelong process of applying evidence-based nursing in agreement with the cultural values, beliefs, worldview, and practices of patients to produce improved patient outcomes is known as **cultural competence**. It is a way of providing patient-centered, holistic nursing care.

A nurse who provides holistic care to patients will focus on healing the person as a whole rather than on one specific problem. In holistic nursing care, the interconnected aspects of a person's life, including their physical, cognitive, social, emotional, and spiritual health, are taken into account. In **culturally competent care**, an individual's cultural beliefs are integrated into their health care. Culturally competent care is required for a trusting, effective relationship with the patient.

Cultural Influences on Health and Illness

The United States is a nation characterized by a multitude of ethnic and cultural groups, with its diversity steadily increasing each day. A set of beliefs, attitudes, and practices shared by a group of people or community which is accepted, followed, and passed down to other members of the group is known as **culture**. Some groups of people have cultural beliefs that explain what causes illness, how illnesses are treated or cured, and who should be involved in the healing process. Culture also affects how people communicate with healthcare team members in terms of language or eye contact, or what can be discussed in terms of the person's body, health, or illness. A person's culture affects everything from how they think and feel about health and illness, to how receptive they are to treatment recommendations, to how, when, and from whom they receive care.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety and Procedure: Patient-Centered Care

Definition: Recognize the patient as a full partner in control of all decisions when providing compassionate and coordinated care based on respect for the patient's preferences, values, and needs.

Knowledge: Describe how diverse cultural, ethnic, and social backgrounds function as sources of patient, family, and community values.

Skill: Communicate patient values, preferences, and expressed needs to other members of the healthcare team.

Attitude: Respect and encourage individual expression of patient values, preferences, and expressed needs.

Best practice standards include the nurse providing competent, effective care with each patient interaction. Conducting a cultural assessment is one way to ensure the patient's preferences and cultural needs are met.

Physiological Differences

Some ethnic and cultural groups have a higher likelihood of experiencing specific diseases, particularly those with genetic conditions associated with their ancestry. Individuals belonging to these ancestral ethnicities are more prone to carrying recessive genes responsible for these illnesses. See Table 5.1 for a list of various ethnic groups along with some of the prevalent genetic diseases associated with each. For instance, there is potential susceptibility to certain cancers and rapid disease progression due to certain physiological diversity such as body structure, skin color, hair type, and metabolism (Perreira et al., 2019).

Ethnic Group(s)	Associated Hereditary Conditions
African	Sickle cell anemia, cystic fibrosis, thalassemia
Ashkenazi Jewish	Tay-Sachs disease, cystic fibrosis, Gaucher disease
Asian	Thalassemia
French Canadian, Cajun	Tay-Sachs disease
Mediterranean	Sickle cell anemia, thalassemia

TABLE 5.1 Ethnicities and Associated Hereditary Conditions

Psychological Differences

One main psychological distinction between cultures that affects how people think and make decisions is **individualism** versus **collectivism**. People from individualistic cultures focus on the individual. They are encouraged to make choices for their own benefit with an emphasis on independence and self-reliance, and health care tends to be viewed as a personal responsibility. Most Western countries, such as the United States, United Kingdom, and other parts of Western Europe are considered to have individualistic cultures (Fatehi et al., 2020).

In contrast, people from collectivistic cultures place an emphasis on community and cooperation. Decisions are made for the benefit of the collective. These cultures believe that it is best for society when everyone works together as a group, and the needs of the individual come secondary to the needs of the greater good. A patient from a collectivistic culture might entrust decisions about their treatment to their family, for example, reflecting the communal approach to decision-making and the importance of considering the broader impact on the group. Some countries that practice cultural collectivism include China, Japan, Indonesia, and some other Eastern countries.

Cultural Influences on Pain

Pain management can be a challenging task and can be made more complex by the cultural considerations particular to each patient (IASP, n.d.). Pain is perceived differently across diverse cultures, including how to express it, how to treat it, and what it means. While pain is a universal physical sensation, its emotional and behavioral aspects are influenced by the cultural perspective of the individual (Givler & Bhatt, 2022). While each patient is an individual, and their response to pain should not be assumed based on their background, there are some broad tendencies in pain perception based on ethnicity. For instance, some research has shown that Black, Japanese, Hispanic, and East Asian cultures tend to be stoic about pain and may keep an unresponsive facial expression or believe that requesting pain medication is a sign of weakness (Hollingshead et al., 2016; Pieper, 2020). Others, such as those part of Muslim or Christian communities, can view pain as part of God's plan. Chinese patients may view pain as an imbalance between yin and yang (Perreira et al., 2019). This does not mean that that these groups do not experience pain. Avoiding misunderstandings related to cultural differences in perceptions of pain is crucial in preventing either overtreating or undertreating the patient's pain.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Culturally Sensitive Nursing Interventions for Pain

Even though the ways in which patients experience and express pain are influenced by their cultural background, pain is an individual experience. It is important for the nurse to be aware of cultural differences so they can treat the individual in a way that best suits their pain. Culturally sensitive nursing interventions for pain include the following (Givler & Bhatt, 2022):

- Providing an interpreter for patients with limited verbal or written English skills.
- Asking the patient about their ideas and understanding of the concept of pain. Their beliefs may be representative of their cultural background, or they may not—be careful not to generalize without listening to the patient.
- Providing thorough education to the patient on pain assessment and the importance of reporting pain. Self-reported assessments allow for a more accurate understanding of the patient's pain, taking into account their personal perception and experience.
- Assessing both observable behaviors and self-reported assessments to formulate a comprehensive approach to pain management. While observable behaviors can provide valuable insights into a patient's condition, they may not capture the full range of pain experiences. Some individuals may not express pain through observable behaviors, while others may exaggerate their discomfort.
- Being sensitive to traditional healing remedies, such as prayer or use of certain foods. Allow the patient to incorporate traditional remedies whenever possible. Make sure to gather a thorough history of all medicines, herbs, plants, and foods to avoid any possible interactions.
- Assuring the patient that the healthcare team is there to help treat their pain in a way that is the most appropriate and suitable for them.
- Adjusting the patient's care plan to reflect their cultural needs.

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 4

Refer back to Chapter 2 Communication for Unfolding Case Study Parts 1-3 to review the patient data. The medical-surgical nurse is providing care to a 28-year-old female patient who arrived to the hospital one hour ago from a walk-in medical clinic. The patient speaks Spanish and is accompanied by her bilingual 10-year-old son.

Past Medical History	Patient is a mother of one, who cares for her child and older mother in a small apartment. The patient's mother is not able to leave home and is not present at the hospital. Patient engages in house cleaning to financially support her family; however, the income is inconsistent. Patient has an eighth-grade education, is a native Spanish speaker, and does not speak English. Medical history includes seasonal allergies, sinusitis, and two episodes of COVID-19 in the past two years. **Family history:** Patient's father is deceased, and patient's mother has stage 2 Alzheimer disease. Patient's son is in good health, talkative, and attentive to his mother. **Social history:** Patient is primary caregiver for mother and adolescent. No other support systems available. Patient has difficulty shopping and making doctor's appointments due to lack of care for her mother. Patient has difficulty communicating in English, so the son translates for his mother. **No current medications and no known allergies.**
Nursing Notes	**2310: Assessment** History and assessment is difficult to obtain because patient does not speak English. Son reports that patient was seen at the clinic for a cough and was diagnosed with pneumonia and started on medication to treat it. Patient remains on 2 L oxygen via nasal cannula, breathing pattern appears normal without distress.
Flow Chart	**2310: Assessment** Blood pressure: 135/75 mm Hg Heart rate: 97 beats/minute Respiratory rate: 22 breaths/minute Temperature: 100.1°F (37.8°C) Oxygen saturation: 97 percent on 2 L nasal cannula Pain: 9/10 (ear)
Lab Results	None
Diagnostic Tests/ Imaging Results	Chest x-ray: Bilateral infiltrates indicative of pneumonia. Sputum culture pending.
Provider's Orders	**2330: New orders** Close observation. Continue antibiotics. Wean off oxygen as tolerated.

1. Recognize cues: Which finding from the information provided is the highest priority at this time?
    a. patient does not speak English
    b. oxygen saturation 97 percent

c. heart rate 97 beats/minute
d. sputum culture results

2. Analyze cues: The patient is reporting a 9/10 pain in the ear but does not show any other signs of being in pain such as grimacing or holding the ear. Which is the most likely rationale for this?
   a. The patient is lying about their pain level.
   b. The patient's pain has improved since getting to the hospital.
   c. The patient's culture may dictate how they show and process pain.
   d. The son stated the patient's pain was a 9/10 so she would get pain medicine more quickly.

Health Disparities Related to Cultural Differences

The **social determinants of health (SDOH)** are the economic, social, and environmental factors that influence an individual's health and well-being. The term **health disparity** describes the differences in health outcomes that result from SDOH. Various factors contribute to health disparities among various cultural groups. Socioeconomic status, race, educational level, and physical proximity to healthcare facilities are all factors related to health disparities. Black and American Indian populations have higher rates of obesity, diabetes, hypertension, and heart disease when compared to White populations (Perreira et al., 2019; National Academies of Sciences, Engineering, and Medicine, 2017a). Distrust of mainstream Western medicine in Black and American Indian communities due to a long history of systemic discrimination can further health disparities by preventing community members from seeking preventative care. This is another example of why it is important for the nurse to provide culturally sensitive care to all groups and foster a trusting relationship with the patient.

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 5

Refer back to Unfolding Case Study #1: Part 4 to review the patient data.

Nursing Notes	**0100: Assessment** Patient given one dose of acetaminophen and reports that ear pain is now 4/10. Interpreter has arrived and plans to stay on the unit until morning rounds so they can translate when the provider comes in. Patient resting comfortably, son sleeping on couch at the bedside.

3. Prioritize hypotheses: Based on the information provided in the patient's social history, the nurse is concerned that the patient may be experiencing health disparities. How are the social determinants of health linked to an increased risk of health disparities?
4. Generate solutions: What actions can the nurse take to address the social determinants of health that are contributing to the health disparities being experienced by the patient?

Healer Variations Among Different Cultures

Every culture develops its own ways of dealing with health and illness. The various medicines and healing practices around the world that differ from the modern, Western healthcare system are referred to as **traditional healing** (World Health Organization, n.d.) (Table 5.2). The term encompasses a vast range of traditions and practices that differ across diverse regions and cultures.

Traditional healing has long been used to promote health and fight disease and is still used today by many people around the world because traditional healers tend to be accessible, affordable, and knowledgeable of the language and culture. Some people rely on traditional healers instead of Western medicine, while others may choose to incorporate traditional healing practices into Western medical care.

Healing Tradition	Chief Characteristics
Traditional Chinese Medicine (TCM)	Belief in the idea of balance as the root of health; based in concepts of Qi and yin and yang; practices include acupuncture, cupping, herbs, tai chi
Ayurveda	Hindu form of medicine from India, based on idea that disease is caused by imbalance; seeks to cure imbalances using Ayurvedic medicine including diet, herbal medicines, yoga, and meditation
African Traditional Healing	Extremely diverse and varies by tribe; some many believe that ancestral spirits are closely involved in the lives of the living; offer spiritual education and care, and function as counselors and social workers
American Indian Traditions	Belief in spiritual and physical health as intertwined; the healer's role is to help the individual as they help themselves; ritual and ceremony have key roles in healing
Hispanic Traditions	Curanderismo is a holistic practice rooted in beliefs that health is achieved through the right balance of mind, body, and spirit; healers focus not only on the individual's physical health but also on their mental health, diet, personal relationships, and more; use various healing methods including prayer, oils, herbs, special diets, and other spiritual rituals
Western European Traditions	Role of patient at the center of the patient-healer relationship is crucial; strong foundation in using medicines created from natural elements, including herbs, plants, minerals, and animals

TABLE 5.2 **Healing Traditions**

Asian Traditions

Asian healing traditions are rooted in the concept of balance. Two of the more well-known traditions are Traditional Chinese Medicine and Ayurveda. Both Traditional Chinese Medicine and Ayurveda have become increasingly popular in recent years as complementary therapies to Western medicine.

Traditional Chinese Medicine (TCM) is an ancient practice based on the ideas of Qi and yin and yang. Qi is the life force that runs through one's body; yin and yang are the qualities of Qi that must be in balance for optimal health (Johns Hopkins Medicine, 2019b). TCM consists of such practices as acupuncture, acupressure, cupping, herbs, tai chi, and others (Figure 5.3). The Accreditation Commission for Acupuncture and Oriental Medicine is a federally recognized organization that accredits schools in the United States that teach acupuncture and TCM.

FIGURE 5.3 Various herbs shown here are used in Traditional Chinese Medicine. (credit: "Chinese prescription," by Tim Wilson/Flickr, CC BY 2.0)

Ayurveda is a traditional Hindu form of medicine from India that is based on the idea that disease is caused by an imbalance in the body. Ayurvedic medicine seeks to cure this imbalance through a combination of diet, herbal medicines, yoga, and meditation. In India, Ayurvedic medicine is considered equivalent to conventional Western medicine, and providers receive formal training; however, there is no licensing process for Ayurvedic practitioners in the United States (Johns Hopkins Medicine, 2019a). Ayurvedic medicine consists of herbs, spices, minerals, and other substances that can interfere with conventional drugs (medications that are widely accepted and commonly used in mainstream medical practice); a thorough list of all medicines and supplements is an important part of the nursing assessment for this reason.

African Traditions

African healing traditions have their foundations in practices dating back thousands of years. Although specific religious traditions vary by tribe, traditional African healing is rooted in the idea that ancestral spirits are closely involved in the lives of the living and act as "mediators" between the living and God (Mokgobi, 2014). As Christianity and Islam began to spread across the continent, many people converted from traditional religions. However, they often retained traditional practices alongside embracing Westernized health care.

Healers vary among tribes; for example, the Bapedi tribe has diviners (*Ngaka ya ditaola*), Sanusi (or *Sedupe*), traditional surgeons, and traditional birth attendants. Diviners and Sanusi can diagnose and prescribe treatment for mental, physical, and spiritual afflictions (Zuma et al., 2016). Surgeons have been trained to perform circumcisions, along with the duties of diviners and Sanusi. Older women who have experience assisting with births over many years become traditional birth attendants. However, African traditional healers do more than help with physical illness and injury. They also offer spiritual education and care and have special knowledge of traditional culture, which allows them to function as counselors and social workers (Zuma et al., 2016).

American Indian Traditions

In American Indian and Alaska Native cultures, physical and spiritual health are interconnected. The belief is that in order for the body to heal, the soul must heal as well. American Indian healers believe the individual is the source of most of the healing and is responsible for their own health, wellness, and behavior. The healer's role is to help the individual as they heal themselves, although the individual's family and community play an important part as well (National Institutes of Health [NIH], n.d.).

Ritual and ceremony hold a key role in traditional American Indian healing. Purifying and cleansing the body, whether through sweating or purging, is an important practice in some American Indian healing rituals. Smudging is another practice that involves cleansing a place or person with the smoke of certain sacred plants. Some healing ceremonies can involve whole communities. These ceremonies can include music, painting bodies, dancing, exorcisms, sand paintings, stories, and use of mind-altering substances. These ceremonies are a way to seek spiritual assistance and physical healing (NIH, n.d.).

Members of the Native American Church are legally allowed to use peyote, a hallucinogen, during religious ceremonies. It can cause hallucinations and alterations in perceptions of space, time, and self. Physical symptoms include nausea, vomiting, dilated pupils, increased heart rate, elevated blood pressure, perspiration, headaches, muscle weakness, and impaired motor coordination. In rare cases, large doses have been reported to cause bradycardia, hypotension, and respiratory depression (Department of Justice, 2020). Peyote has been used for centuries by American Indians and is considered a sacred plant.

LINK TO LEARNING

This video from the Harvard Divinity School features a discussion with Native American Church leaders about the Sacrament of Peyote (https://openstax.org/r/77peyote) and its history in the Indigenous medicine world.

Hispanic Traditions

Traditional Hispanic medicine is known as curanderismo, with the healers called *curandera* (women) or *curandero* (men). The holistic practice of **curanderismo** is rooted in beliefs that health is achieved through the right balance of mind, body, and spirit. A curandero focuses not only on the individual's physical health but also on their mental health, diet, personal relationships, and more. Curanderos use various healing methods including prayer, oils, herbs, special diets, and other spiritual rituals. They also act as counselors and social workers, listening to individuals talk about their problems and helping them build an emotional support network (Cruz et al., 2022).

Western European Traditions

The central role of the patient in the healer/patient relationship is foundational to modern Western European healing culture. There is also a strong emphasis on technology and scientific evidence of healing practices.

Traditional European medicine has a strong foundation in using medicines created from natural elements, including herbs, plants, minerals, and animals (Firenzuoli & Gori, 2007; Hosseinzadeh et al., 2015). Homeopathy (an alternative medicine system based on the principle of "like cures like," utilizing highly diluted substances to treat similar symptoms) and naturopathy (focusing on the body's self-healing abilities through holistic approaches like dietary changes, herbal medicine, and lifestyle counseling) both have roots in European tradition. Individuals who rely on herbal and plant-based remedies tend to either use them in conjunction with conventional Western medicine or view them as alternatives to harsher methods of treatment. Examples of these remedies are discussed later in this chapter, in 5.3 Cultural Practice in Nursing. Nurses should provide quality education to their patients about clinical evidence of the effectiveness of these complementary and alternative therapies (Leonti & Verpoorte, 2017).

Counteracting Implicit Bias

Everyone holds biases that reflect their own personal belief systems. An **explicit bias** is a consciously held set of beliefs about a person, situation, or group based on certain characteristics (Sabin, 2022). Explicit bias is what we typically think of when we see or hear the word *bias*. A person might be openly biased against someone due to their age, gender, race, sexuality, or another reason. An overtly racist comment is an example of explicit bias (Sabin, 2022).

In comparison, **implicit bias** refers to all our unconscious biases. Implicit bias is an automatic reaction toward a person, situation, or group involving subconscious feelings, perceptions, attitudes, and stereotypes. You may hold conscious beliefs about equality and fairness while still having unconscious, implicit biases that contradict these beliefs.

Bias negatively affects the patient-provider relationship, leading to poorer quality care and worse outcomes for certain groups. For example, research studies have shown that implicit bias regularly leads to the undertreatment of pain in Black patients (Sabin, 2022). Implicit bias can be difficult to change because it operates at an unconscious level, making individuals often unaware of these biases. The first step in overcoming implicit biases is to become aware of them; training in diversity and inclusiveness can also help identify problematic feelings, thoughts, and behaviors.

LINK TO LEARNING

Learn more about your own implicit biases (https://openstax.org/r/77implbiases) by taking this available test.

5.2 Ethical Practice in Culture and Diversity

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify ways to accommodate different cultural practices
- Explain ethical ways to engage in cultural diversity practices
- Define how nurses can be responsive to diversity and inclusion

As discussed in 5.1 Understanding Cultural Differences, the concept of culturally competent care, which involves integrating an individual's cultural beliefs into their health care, is an important foundation of cultural competence. Providing culturally competent care requires attention to diversity and inclusion and a willingness to understand and accommodate the cultural differences of others. According to the American Psychological Association (APA) (n.d.), cultural diversity is "the existence of societies, communities, or subcultures that differ substantially from one another." And, **inclusion** is "the practice of creating an environment in which individuals of all backgrounds feel respected, valued, and supported."

According to the Centers for Disease Control and Prevention (CDC) (2021), there are eight principles of cultural competence:

1. Define culture broadly.
2. Value patients' cultural beliefs.
3. Recognize complexity in language interpretation.
4. Facilitate learning between providers and communities.
5. Involve the community in defining and addressing service needs.
6. Collaborate with other agencies.
7. Professionalize staff hiring and training.
8. Institutionalize cultural competence.

Note that it is the responsibility of the healthcare professional to seek out, understand, and integrate the patient's beliefs into their care. Ultimately, the goal is to build cultural competence into the permanent framework of health care.

Accommodating Cultural Practices

According to the American Nurses Association (ANA) Code of Ethics (2015), nurses must practice with cultural humility and inclusiveness. Culture is constantly evolving, so true cultural competence requires a lifetime of learning with these changes. The ANA defines **cultural humility** as "a humble and respectful attitude toward individuals of other cultures that pushes one to challenge their own cultural biases, realize they cannot know everything about other cultures, and approach learning about other cultures as a life-long goal and process."

There are both intrapersonal and interpersonal components to cultural humility (Table 5.3) (Hughes et al., 2020).

The **intrapersonal** component consists of a personal awareness of one's own limited knowledge of the patient's culture. The **interpersonal** component involves respect for the patient's culture and openness to their beliefs and experiences. By focusing on developing partnerships with patients, the nurse can create a space that encourages learning and appreciation for diverse cultures. It is a patient-centered way of providing culturally sensitive care.

Interpersonal Skills	Intrapersonal Skills
Involves relations between people	Occurs within the individual mind or self
Two or more parties involved	No external parties involved
Feedback comes from the parties involved	Feedback comes in the form of self-analysis
Important to building and maintaining relationships; must develop self-awareness	Continuous flow of thought; ones' own thoughts, views, opinions, and attitudes are developed

TABLE 5.3 Interpersonal versus Intrapersonal Skills

Avoid Forcing Change

Cultural humility involves inclusion. Inclusion means considering the patient's own cultural preferences and involving the patient and caregivers in the process as much as possible. Forcing a patient to accept a treatment plan that conflicts with their cultural practices and beliefs is rarely effective and can damage the relationship of trust between the nurse and the patient. A **cultural negotiation** is a process by which the patient and nurse seek a mutually acceptable way to deal with competing interests of nursing care, prescribed medical care, and the patient's cultural needs. Cultural negotiation is reciprocal and collaborative. When the patient's cultural needs do not significantly or adversely affect their treatment plan, the cultural needs can and should be accommodated.

Seek Cultural Assistance

Having respectful, curious, in-depth conversations with patients is the best way to learn about their individual cultural practices. When seeking ways to accommodate diverse cultural practices, approach patients with cultural humility to learn how best to care for the patient. Cultural guides from various local communities may also be available for cultural dialogue (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Collaboration between patients from diverse cultures and nurses is an excellent way to produce culturally sensitive, patient-centered care plans (Hughes et al., 2020). Examples of seeking cultural assistance include exploring programs and initiatives that may be offered by various organizations, discovering available resources, or developing initiatives for unit-based councils.

Engagement in Cultural Diversity

As a nurse, it is necessary to actively engage with the patient and their culture to foster cultural competence, build trust, and tailor healthcare services to individual needs. This approach ensures a patient-centered, inclusive, and holistic approach to health care. Cultural negotiation is mutual; the nurse and the patient must gain an understanding of each other's perspective. There are many ways a nurse can actively participate in learning about various cultures to best serve diverse patient populations. Some examples include encouraging the patient to bring food from home and involving the family in medical decision-making.

Active Learning

One of the first steps in engaging in cultural diversity is to get to know your community—what ethnic groups are most prevalent, what languages are most widely spoken, what religions are most popular? Use sources such as newspapers, journal or book articles, and cultural training seminars or courses to research cultural issues that are relevant to your area. However, it is important to remember not to stereotype or generalize patients. Make sure to ask each patient about their personal preferences when it comes to their cultural background and beliefs (Stubbe, 2020).

Learning about cultural diversity also includes becoming aware of your own practices and implicit biases. There are various implicit bias tests available to help you identify unconsciously held beliefs. Journaling is another way to help

identify and reflect on personal thoughts and feelings toward working with diverse groups.

Awareness of your own practices can help identify and address issues with practices observed in the workplace. For example, your area may have a large Arabic-speaking population, but your clinic does not have consent forms in Arabic. You decide to advocate for your patients and ask the clinic to provide consent forms in Arabic. Another example would be your clinic hosts educational workshops so employees can actively learn about the populations they serve. Learning about the culture of your patient population leads to better patient outcomes and often greater job satisfaction.

Exploring

Immersing yourself in diverse cultural communities can be an engaging and fun way to learn more about cultural diversity. Attending local cultural events such as festivals and dances, exploring art and music scenes, and even joining religious ceremonies (special permission may be needed) are all ways to experience cultural practices firsthand (Figure 5.4).

FIGURE 5.4 Attending cultural festivals, like the annual Carnival celebration of Mardi Gras in Louisiana, is an excellent way to gain firsthand exposure to diverse cultural practices. (credit: "Fat Tuesday_Mardi Gras Indians_4," by Derek Bridges/Flickr, CC BY 2.0)

Responsiveness to Cultural Diversity

Learning about diverse cultures is only one step toward providing culturally competent care. How one responds to cultural diversity is what directly affects the nurse-patient relationship and outcomes. According to the U.S. Department of Health and Human Services (HHS, n.d.), "being culturally responsive requires having the ability to understand cultural differences, recognize potential biases, and look beyond differences to work productively with children, families, and communities whose cultural contexts are different from one's own." Being responsive to cultural diversity involves taking what you have learned about other cultures from conversations, experiences, and research and integrating the knowledge into your practice. It also involves advocating for diversity and inclusion at a structural and institutional level.

Willingness to Change

Approach the process of learning about diverse cultures with cultural humility. To understand various cultures, one must engage in self-reflection and remain open to new ideas, beliefs, and behaviors. It is normal to encounter beliefs and practices that are different from your own. They may be in direct conflict with your own cultural background and may even make you uncomfortable, sad, angry, or confused. It is not expected that you will completely change all your thoughts and feelings, but a *willingness* to change is key to accepting others and putting cultural competence into action.

REAL RN STORIES

Recognition of Cultural Biases

Nurse: Jenny, RN
Clinical setting: Medical-surgical unit
Years in practice: 2
Facility location: Southern California

At 28 years old, I relocated from Florida to southern California. I am White, and until this point, I had spent my entire life living in Florida. I had been practicing nursing for two years and had just started a new job on a medical-surgical floor at a local hospital. The hospital was located in a community that was known for its large Vietnamese population. Most of the nurses, providers, and patients at the hospital were either Vietnamese immigrants or of Vietnamese descent.

One day I took report on a new patient, a 53-year-old Vietnamese female with a diagnosis of terminal brain cancer. The patient was not expected to survive; however she remained a full code, and the family was refusing hospice (end-of-life care focused on increasing comfort and managing pain). I wondered why the patient and family would refuse hospice care.

As I went to assess the patient, I found her lying in bed and moaning while clutching her head in her hands. She was nonverbal and nonresponsive to my stimuli. I noticed she had an order for pain medication, so I administered it as ordered.

Upon reassessing her, I noticed the medication did not seem to make much difference in the observable behaviors. The patient was still clutching her head in her hands and moaning. The doctor refused to increase the dose at my suggestion and seemed to brush me off when I recommended talking to the family again about comfort measures. I found myself growing increasingly frustrated on behalf of my patient, and I felt she might be suffering unnecessarily at the end of her life.

At lunch, I called the patient's daughter, Viv, and requested she come to the hospital to visit her mother. Upon the daughter's arrival, I had just given the patient some IV pain medication, but the patient was not responding or showing signs of relief. Viv stated, "The pain medication does not seem to be making much of a difference the last couple of days." I asked her if she had considered hospice for her mother and explained that I had found hospice very helpful when my own grandmother was at the end of her life. Viv told me that she had discussed hospice with the physicians but decided against it. "Hospice is not an option for us. In our culture, we believe in fighting with everything we have down to the last minute," she stated. She explained that she and her family viewed the use of medication at end-of-life in hospice care as hastening death.

After having this conversation with Viv, I had a new understanding of why the family was refusing hospice and comfort measures. I now understood how important it was to the patient and the patient's family that their own views on end-of-life care be respected. This conversation allowed me to reexamine my own cultural biases and be more culturally respectful of the patients I was now serving.

5.3 Cultural Practice in Nursing

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the guidelines for nursing care of different cultural practices
- Explain the importance of cultural competency in nursing
- Recognize factors that can affect diversity and inclusion in nursing

The importance of cultural competence cannot be understated. Cultural competence enables a nurse to deliver the highest quality, safest, and most patient-centered care possible. Establishing a culturally sensitive environment is the first step in providing culturally competent care to patients. An accurate and thorough cultural assessment allows for the gathering of patient-specific cultural information. The pursuit of culturally competent care also requires recognizing the various factors that can affect diversity and inclusion in nursing.

Guidelines for Nursing Care

Providing culturally competent care integrates an individual's cultural beliefs into their health care. Begin by conveying cultural sensitivity to patients and their family members with these suggestions:

- Set the stage by introducing yourself by name and role when meeting the patient and their family for the first time. Until you know differently, address the patient formally by using their title and last name. Ask the patient how they wish to be addressed and record this in the patient's chart. Respectfully acknowledge any family members and visitors at the patient's bedside.
- Begin by standing or sitting at least arm's length from the patient.
- Observe the patient and family members in regard to eye contact, space orientation, touch, and other nonverbal communication behaviors and follow their lead.
- Make note of the language the patient prefers to use and record this in the patient's chart. If English is not the patient's primary language, determine if a medical interpreter is required before proceeding with interview questions.
- Use inclusive language that is culturally sensitive and appropriate. For example, do not refer to someone as "wheelchair bound"; instead say "a person who uses a wheelchair."
- Be open and honest about the extent of your knowledge of their culture. It is acceptable to politely ask questions about their beliefs and seek clarification to avoid misunderstandings.
- Adopt a nonjudgmental approach and show respect for the patient's cultural beliefs, values, and practices. It is possible that you may not agree with a patient's cultural expressions, but it is imperative that the patient's rights are upheld. As long as the expressions are not unsafe for the patient or others, the nurse should attempt to integrate them into their care.
- Assure the patient that their cultural considerations are a priority of their care.

Cultural Assessment

After establishing a culturally sensitive environment, nurses should incorporate a cultural assessment when caring for all patients. There are many assessment guides used for patient interviews that are adaptable to a variety of healthcare settings and are designed to facilitate understanding and communication.

The Four Cs of Culture model is an example of a quick cultural assessment tool that asks questions about what the patient **C**onsiders to be a problem, the **C**ause of the problem, how they are **C**oping with the problem, and how **C**oncerned they are about the problem. Use these questions based on the Four Cs model in nurse-patient conversations to conduct a cultural assessment:

1. What do you think is wrong? What is worrying you? (In other words, discover what the patient **C**onsiders to be the problem and what they call it.)
    - Example: A patient with a diagnosis of a sinus infection believes their body is "unbalanced."
2. What do you think **C**aused this problem? How did this happen?
    - Example: The patient believes this illness is a punishment for a misdeed.
3. What are you doing to **C**ope with this problem? How are you taking care of yourself?
    - Example: The patient avoids eating certain foods to treat the illness while also using home remedies such as herbal tea.
4. How serious is this problem for you? How **C**oncerned are you?
    - Example: A patient views the illness as being "God's will" and states, "It's in God's hands."

PATIENT CONVERSATIONS

How Do You Perform a Brief Cultural Assessment?

Scenario: The nurse enters the patient's room to perform a cultural assessment. The patient is a woman from China who is visiting family in the area and prefers to speak Mandarin. The nurse sets up the video translator to begin the conversation and introduces the translator to the patient.

Nurse: Hi, I'm Travis, and I'm going to be your nurse today. Can you please tell me your name and date of birth?

Patient: Mei Wang, January 2, 1947.

Nurse: What would like for me to call you?

Patient: Mrs. Wang is fine.

Nurse: Mrs. Wang, I'm here to do a cultural assessment, which involves asking you a few questions. It should take less than 15 minutes. Is that okay?

Patient: Yes, that is fine.

Nurse: What do you think is wrong? What is worrying you?

Patient: The doctors are telling me that I have an infection in my lungs. I haven't been feeling well, and I believe it is because my body is not in balance.

Nurse: What do you think caused this problem? How did this happen?

Patient: My husband died four months ago, and I left China to live with my son and his family here in the United States. I miss my husband, and everything here is so different compared to what I'm used to.

Nurse: Have you been trying things at home to make yourself feel better? How have you been coping?

Patient: I've been making some special food. A lot of soup, and other foods with ginger, onion, garlic to help with the phlegm.

Nurse: How serious is this problem for you? How concerned are you?

Patient: I've never been in the hospital before, so I'm worried, but I think the doctors are good here and will get me home. I want to make sure that my family can bring me food from home, though. I don't like the hospital food, my food from home is much better for me.

Nurse: I'll check with your doctor to see if your family can bring your food from home; I'll tell them how much better you like it, okay? My assessment is done for now, do you have any other questions for me?

Patient: Not right now, thank you for talking to me.

Another, more comprehensive cultural assessment tool, inspired by R. E. Spector's Heritage Assessment Interview, is called the Sample Cultural Assessment Interview and includes these additional questions:

- Where were you born? Where were your parents born?
- What pronoun do you use (he, she, they)?
- In what language are you most comfortable speaking and reading?
- Did you grow up in a city or a town or a rural setting?

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 6

Refer back to Unfolding Case Study #1: Part 4 to review the patient data.

Nursing Notes	**0700: Assessment** Patient is awake and alert and reports feeling "much better." Patient reports anxiety about finances and is worried about being able to feed her family. She states that she makes enough each month to get by, but her mother is getting older and beginning to require more care and medications.
Flow Chart	**0700: Assessment** Blood pressure: 128/72 mm Hg Heart rate: 87 beats/minute Respiratory rate: 18 breaths/minute Temperature: 99.1°F (37.3°C) Oxygen saturation: 97 percent on room air
Provider's Orders	**0745: New orders** Discharge after meeting with social worker.

5. Take action: As part of the assessment, the nurse also conducts a cultural assessment. How would the nurse use the Four Cs of Culture model to conduct the assessment on this patient?
6. Evaluate outcomes: How would you determine that the patient's social needs have been addressed sufficiently before discharge home?

Cultural Knowledge

Acquiring cultural knowledge is another important step toward becoming a culturally competent nurse. The term cultural knowledge refers to seeking information about cultural health beliefs, history, customs, and values to understand patients' worldviews. To acquire cultural knowledge, the nurse actively seeks information about other cultures, including common practices, beliefs, values, and customs, particularly for those cultures that are prevalent within the communities they serve. Cultural knowledge also includes understanding the historical backgrounds of culturally diverse groups in society, as well as physiological variations and the incidence of certain health conditions in culturally diverse groups. Cultural knowledge is best obtained through cultural encounters with patients from diverse backgrounds to learn about individual variations that occur within cultural groups and to prevent stereotyping.

Standards of Practice

The Transcultural Nursing Society has developed Standards of Practice for Culturally Competent Nursing Care (Douglas et al., 2011). These twelve standards are intended to serve as a universally applicable guide for nurses in all aspects of culturally competent nursing care:

1. Social justice: Nurses must promote and advocate for social justice for all.
2. Critical reflection: Nurses must engage in ongoing, personal, critical reflection of how their cultural beliefs and practices affect their nursing care.
3. Knowledge of cultures: Nurses must understand diverse cultures and factors that affect health and well-being.
4. Culturally competent practice: Nurses must use cross-cultural knowledge and skills in implementing culturally competent nursing care.
5. Cultural competence in healthcare systems and organizations: Healthcare institutions must provide the structure and resources necessary to meet the needs of their culturally diverse patients.
6. Patient advocacy and empowerment: Nurses must empower their patients to navigate the healthcare system and advocate for inclusion of the patient's cultural beliefs in their health care.
7. Multicultural workforce: Nurses must actively work toward having a multicultural workforce in healthcare settings.
8. Education and training in culturally competent care: Nurses must be educationally prepared to promote and provide culturally congruent health care through formal education, clinical training, and continuing education for practicing nurses.

9. Cross-cultural communication: Nurses must use culturally competent communication skills when providing patient care.
10. Cross-cultural leadership: Nurses must strive to influence others to achieve culturally competent care for diverse groups.
11. Policy development: Nurses must work to establish policies and standards for culturally competent care.
12. Evidence-based practice and research: Nurses must base their practice on interventions that have been shown to be effective through evidence-based practice.

Complementary and Alternative Therapies

Nonmainstream approaches to health that are used alongside conventional Western medical care are called **complementary therapies**. When nonmainstream approaches are used in place of conventional Western medical care, they are called **alternative therapies** (U.S. Department of Health and Human Services [HHS], n.d.a). Conventional therapies are more common than alternative therapies in the United States. Examples of therapies that may be used for complementary or alternative purposes include the use of melatonin for insomnia or acupuncture for muscle pain. It is important for the nurse to perform a thorough medication reconciliation so that complementary or alternative therapies are not missed. Patients may not consider these supplements as "medicines" or "drugs."

Nutritional/Supplemental Therapies

Nutritional and supplemental therapies involve the use of dietary approaches and supplements to enhance well-being and address health issues. Dietary supplements, such as vitamins and minerals, are taken to supplement the diet and ensure adequate nutrient intake. Herbal supplements, derived from plants, are believed to have medicinal properties. Probiotics, which are beneficial bacteria that promote gut health, are commonly used as supplements. Fish oil supplements, rich in omega-3 fatty acids, are believed to have cardiovascular benefits. It is crucial for individuals considering these approaches to consult with healthcare professionals to ensure they align with their specific health needs and do not interfere with any existing medical treatments. As these products can interact with drugs, it is important to get a comprehensive list from the patient of all supplements they are taking. For example, St. John's Wort, a common supplement, is known to interact with numerous different common medications including selective serotonin reuptake inhibitors, certain contraceptives, and digoxin (Mayo Foundation, 2021).

Physical and Psychological Therapies

Physical and psychological therapies include a wide range of modalities, such as acupuncture, massage therapy, meditation, reiki (a Japanese healing technique that involves the transfer of energy through the practitioner's hands to promote physical and emotional healing), and qigong (a Chinese practice that combines breath control, gentle movement, and meditation to cultivate and balance the body's vital energy). Cupping, coining (a traditional East Asian healing technique that involves scraping the skin with a smooth-edged tool, such as a coin or spoon, to promote blood flow and release tension), yoga, art, music, and dance also fall into this category. Acupuncture and cupping are two of the more popular alternative and complementary physical therapy modalities. Acupuncture is used to treat pain and multiple other conditions; it is performed by inserting needles at special points in the body. Acupuncture is intended to restore balance and is thought to work by releasing endorphins, the body's natural painkillers. Cupping is another traditional therapy where cups are placed on the skin to increase blood flow with the aim of helping with stress or muscle aches and pains (see Figure 5.5).

FIGURE 5.5 Blood marks such as these are a normal finding on someone after a cupping session. (credit: "Cupping," by Renato Ganoza/ Flickr, CC BY 2.0)

Other Complementary Therapies

There are other complementary therapies that do not fit in either category. These include traditional healers, Ayurvedic medicine, TCM, naturopathy, and homeopathy. Derived from eighteenth- and nineteenth-century European natural healing systems, naturopathy involves a combination of therapies including herbal medicine, diet, acupuncture, and psychotherapy (HHS, 2017). In homeopathy, natural products are used in highly diluted doses to treat illness. Examples include *Arnica montana*, often used for muscle soreness and injuries, or chamomilla, often used for colic, teething, and childhood irritability. Homeopathic products can still include ingredients that can cause significant drug interactions, so they must be noted on the patient's chart (HHS, n.d.b).

Cultural Competency

The freedom to express one's cultural beliefs is a fundamental right of all people. Nurses realize that people speak, behave, and act in many different ways due to the influential role that culture plays in their lives and their view of the world. Cultural competence is a lifelong process of applying evidence-based nursing in agreement with the cultural values, beliefs, worldview, and practices of patients to produce improved patient outcomes.

Culturally competent care requires nurses to combine their knowledge and skills with awareness, curiosity, and sensitivity about their patients' cultural beliefs. It takes motivation, time, and practice to develop cultural competence, and it will evolve throughout your nursing career. Culturally competent nurses have the power to improve the quality of care leading to better health outcomes for culturally diverse patients. Nurses who accept and uphold the cultural values and beliefs of their patients are more likely to develop supportive and trusting relationships with their patients. In turn, this opens the way for optimal disease and injury prevention and leads toward positive health outcomes for all patients.

LINK TO LEARNING

A unique and inspiring discussion about becoming a culturally competent nurse (https://openstax.org/r/77cultcomp) is presented in this video.

Transcultural Nursing

The roots of providing culturally competent care are based on the original transcultural nursing concept developed by nurse and anthropologist, Madeleine Leininger. In **transcultural nursing**, care incorporates the cultural beliefs and practices of individuals to help them maintain and regain health or face death in a meaningful way. It forms the basis of all culturally competent care.

Theory of Cultural Care Diversity

Leininger's Theory of Culture Care: Diversity and Universality is also known as the **Culture Care Theory (CCT)**. It

provides the framework for transcultural nursing and the development and practice of culturally competent nursing care (McFarland & Wehbe-Alamah, 2019). Leininger states that health care cannot be effectively provided without considering the patient's cultural background. The theory emphasizes the importance of understanding the cultural values, beliefs, and practices of patients in order to provide appropriate care. According to Leininger, culture is a fundamental component of human life and influences an individual's perception of health, illness, and health care (McFarland & Wehbe-Alamah, 2019). Therefore, healthcare providers must approach each patient with cultural sensitivity and strive to deliver care that is respectful and tailored to the patient's cultural needs. The CCT is an important framework for promoting culturally competent care and achieving health equity for all individuals. Using the CCT as a framework, nurses can guide research of discovery and translational research projects for evidenced-based nursing practice. Educational programs can develop nursing courses and curricula to prepare culturally competent nurses. Hospitals and medical facilities can use the framework to guide future culturally competent administrative and leadership policies and procedures.

Factors Affecting Diversity and Inclusion in Nursing

The ANA recognizes specific factors that negatively affect diversity and inclusion in nursing. Explicit bias in the form of discrimination due to gender identity, race, ethnicity, sexual orientation, or socioeconomic status negatively impacts the health status of various populations. Implicit bias affects the relationship between healthcare providers and patients, as well as outcomes, even though it is unintentional (Jolley & Peck, 2022). Awareness of one's biases is always the first step in combating them.

Cultural Self-Awareness

A person's understanding of their own culture and its impact on self is referred to as **cultural self-awareness**. Understanding self is a crucial step in forming a broader understanding and acceptance of other cultures (Lu & Wan, 2018). To develop cultural awareness, people can educate themselves about diverse cultures, learn to recognize and avoid stereotypes, and engage in cross-cultural communication and interaction. It is important to note that cultural awareness is not a one-time achievement but an ongoing process that requires continuous learning and adaptation. Cultural self-awareness can help us understand what shapes our own values and beliefs and recognize our place in a larger multicultural society.

Ethnocentrism

The belief that one's culture (or race, ethnicity, or country) is better than and preferable to another's culture is termed **ethnocentrism**. An example would be a nurse telling a patient that conventional Western medical treatments are better than traditional healing remedies. Appropriate cultural self-awareness can help the nurse avoid ethnocentrism. Designing interventions that are relevant to and respectful of the patient's culture is one way to avoid ethnocentrism. Other ways to avoid ethnocentrism include avoiding generalizations or stereotypes about diverse cultures. Approach cultural differences with an open mind, a readiness to learn and understand, and a willingness to consistently engage in each patient interaction with cultural humility and active-listening.

Six Cultural Phenomena

There are other cultural considerations that can affect efforts to increase diversity and inclusion in nursing, which Giger and Davidhizar identify in their Transcultural Assessment Model (2002). The Transcultural Assessment Model was developed as a way for nurses to assess and provide care for culturally diverse patients. This model states that each individual is unique and should be assessed according to six cultural phenomena:

- Communication: This includes the language, tone, and nonverbal cues used by the individual and the healthcare provider. Communication styles can vary across cultures and can impact the effectiveness of healthcare interactions.
- Personal space: All communication occurs in the context of space. There are four distinct zones of interpersonal space intimate, personal, social/consultative, and public (Figure 5.6) (Hall, 1966). This includes the physical and emotional distance between the individual and the healthcare provider. Cultural norms around personal space and touch can vary across cultures.

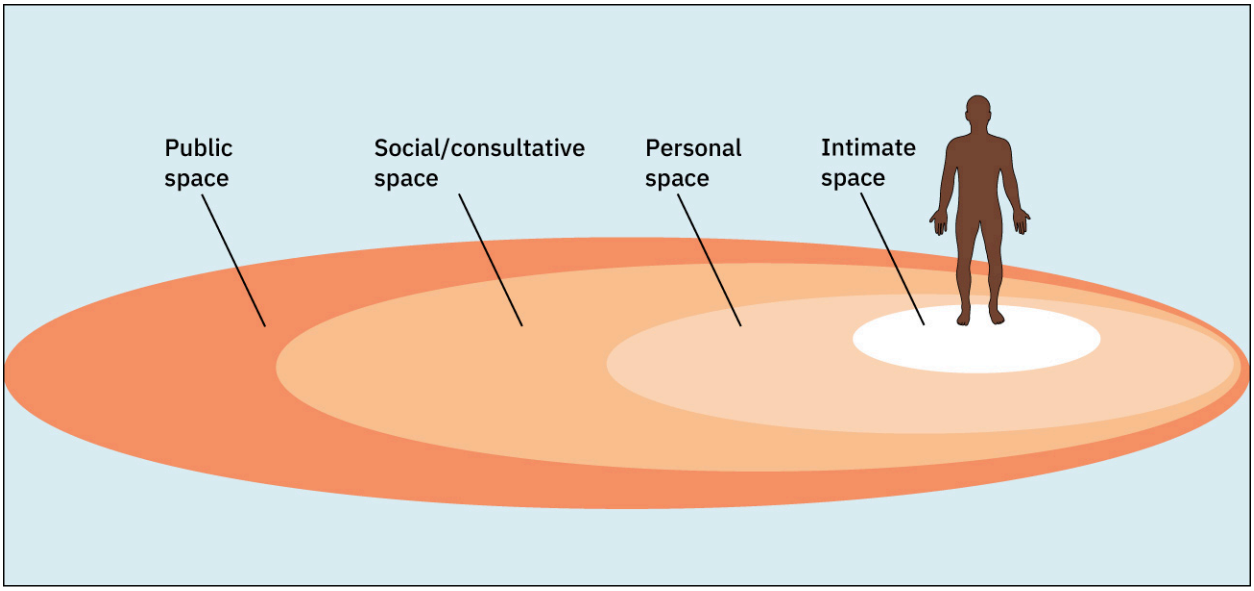

FIGURE 5.6 There are four zones of interpersonal space that vary depending on cultural norms. How much space is acceptable varies across cultures. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

- Social organization: This includes the individual's cultural values and beliefs related to family, community, and social roles. Cultural expectations around family involvement in healthcare decisions, for example, can vary across cultures. Another example is local, state, or government agencies that all share the same values, beliefs, and interests.
- Time orientation: Time is an important aspect of interpersonal communication. This includes the individual's cultural beliefs and practices related to time, such as punctuality and the perception of time as linear or cyclical. For example, the past, present, and future have different meanings and value to different cultures.
- Environmental control: This includes the individual's cultural beliefs and practices related to controlling their environment, such as beliefs around the causes of illness and how it is directly impacted by one's environment.
- Biologic variations: This includes the individual's cultural beliefs and practices related to biology, such as beliefs around the causes of illness and the use of alternative therapies. Cultural beliefs around pain management and the use of medication can also vary across cultures.

CULTURAL CONTEXT

Patients and Personal Space

The amount of space that a person surrounds themself with to feel comfortable is influenced by culture. For example, for some people, it would feel awkward to stand four inches away from another person while holding a social conversation, but for others a small personal space is expected when conversing with another. There are times when a nurse must enter a patient's personal space, which can cause emotional distress for some patients. The nurse should always ask for permission before entering a patient's personal space and explain why and what is about to happen.

Patients may also be concerned about their modesty or being exposed. A patient may deal with the violation of their space by removing themselves from the situation, pulling away, or closing their eyes. The nurse should recognize these cues for what they are, an expression of cultural preference, and allow the patient to assume a position or distance that is comfortable for them.

Similar to cultural influences on personal space, touch is also culturally determined. This has implications for nurses because it may be inappropriate for a male nurse to provide care for a female patient and vice versa. In some cultures, it is also considered rude to touch a person's head without permission.

5.4 Diversity, Equity, and Inclusion

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define important considerations related to providing equal, diverse, and inclusive nursing care
- Identify factors that can prevent diversity and inclusion
- Explain how barriers to communication affect diversity and inclusion

Diversity and inclusion create an environment that encourages different ideas, cultures, backgrounds, and experiences. This type of environment allows nurses to provide more comprehensive and effective care to their patients. Diversity, equality, and inclusion foster a culture of mutual respect, understanding, and support which can lead to improved patient outcomes. Additionally, diversity and inclusion can help to reduce health disparities which can improve healthcare access and quality for communities that are traditionally underserved. Ultimately, diversity and inclusion are critical components of successful nursing practice that can help to ensure that all patients receive the best possible care.

Equality

The principle of ensuring that all individuals, regardless of their background or socioeconomic status, have equal access to healthcare resources and opportunities is called **health equality** (CDC, 2022b). When everyone has a fair opportunity to obtain optimal health, **health equity** is achieved (CDC, 2022a). Both equity and equality are important considerations when providing inclusive nursing care (Figure 5.7).

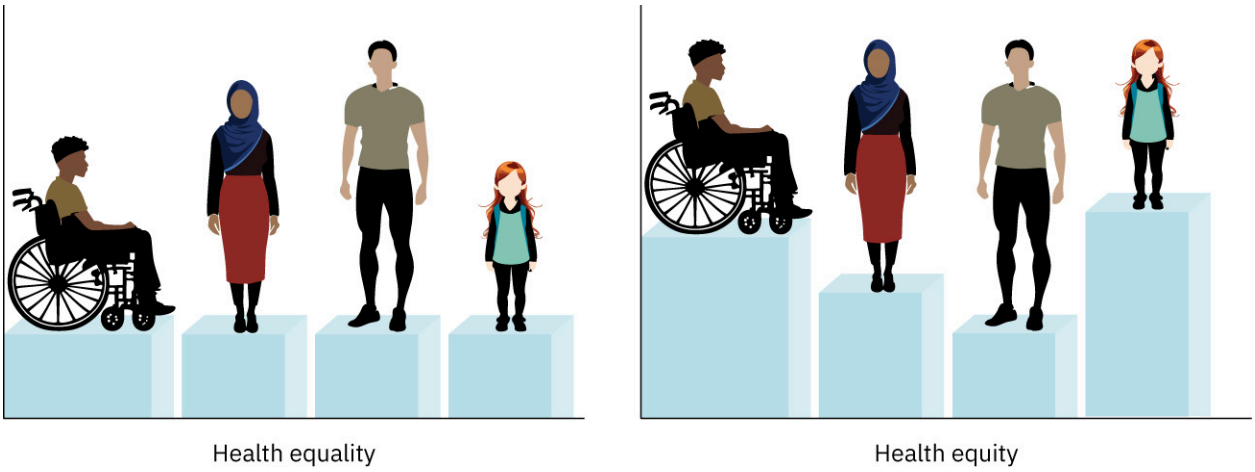

FIGURE 5.7 Health equality is providing the same resources and opportunities to all individuals, while health equity is ensuring that everyone has access to the resources they need to attain the same level of health, addressing systemic disparities and promoting fairness. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

A standard linked to fairness for all in society is **justice**, a principle and moral obligation to act on the basis of equality and equity. The ANA states this obligation guarantees not only basic rights (respect, human dignity, autonomy, security, and safety) but also fairness in all operations of societal structures. This includes care being delivered with fairness, rightness, correctness, unbiasedness, and inclusiveness while being based on well-founded reason and evidence.

The CDC (2022a) discusses diversity and inclusion as important factors in health equity considerations. Diversity refers to the existence of societies, communities, or subcultures that differ substantially from one another. Cultural competence means respecting and appreciating these similarities and differences. Inclusion is the practice of creating an environment in which individuals of all backgrounds feel respected, valued, and supported (CDC, 2022b). There are numerous factors that can prevent diversity, inclusion, and justice. These can in turn create health disparities that limit access to care and decrease outcomes for certain groups.

Race/Ethnic Heritage

Race is a socially constructed idea because there are no true scientifically or biologically distinct races. Humans are not biologically different from each other. However, race and ethnicity have an undeniable effect on healthcare access and outcomes. In **racism**, it is presumed that races are distinct from one another and that there is a

hierarchy to race, implying that races are unequal. As healthcare providers, nurses have an obligation to recognize the impact of racism on their patients and the communities they serve. In the United States, race and ethnic background have long played a role in health disparities among different populations.

Most underrepresented populations experience higher rates of chronic disease and premature death compared to the rates among White populations; however, some individuals from underrepresented groups, such as Asian and Hispanic immigrants, experience lower rates (National Academies of Sciences, Engineering, and Medicine, 2017a). American Indian, Alaska Native, and Black populations experience the highest infant mortality rates, while Asian and Pacific Islander populations experience the lowest (Figure 5.8). Black people are more likely than White people to die prematurely from heart disease, and Black men are twice as likely as White men to die prematurely from stroke.

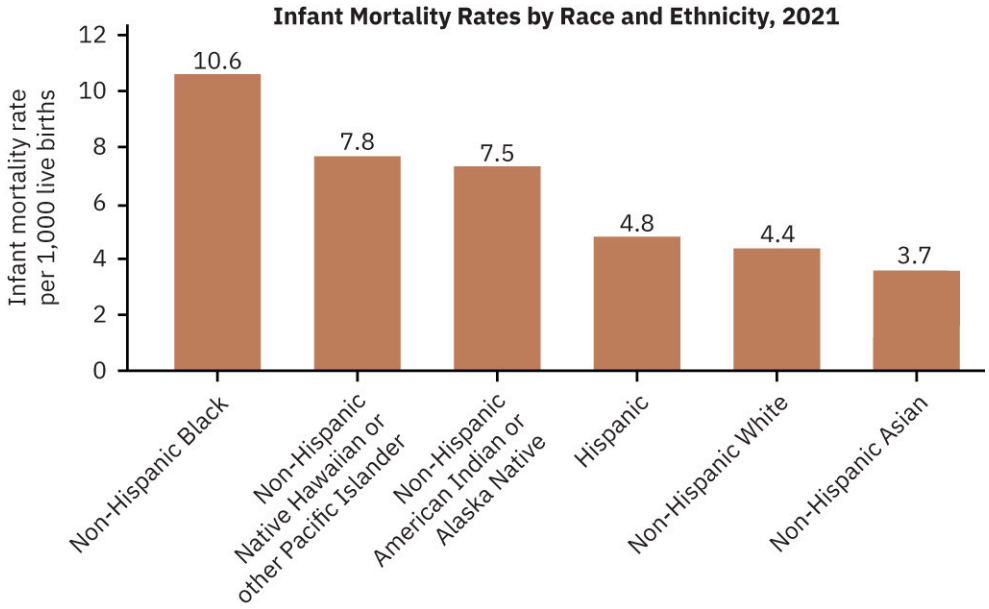

FIGURE 5.8 Infant mortality rates by race and ethnicity for the United States illustrate discrepancies between groups. (data source: Center for Disease Control and Prevention; attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Implicit bias related to race and ethnicity has been repeatedly shown in research to negatively affect patient care and outcomes. Nurses should also be sensitive to the fact that individuals from certain ethnicities may be distrusting of healthcare professionals due to cultural history and other factors.

Religion

Throughout human history, spirituality and health have often gone hand-in-hand. In many healing traditions, healers also serve as religious leaders (Figure 5.9). Many people consult and rely on their religious and spiritual beliefs when making medical decisions. For instance, Jehovah's Witnesses do not accept whole blood, plasma, and platelets because they believe that this might interfere with eternal salvation; they believe it is against God's will to accept blood products and will therefore not allow blood transfusions. A person's religious beliefs can affect their diet, what medications they will take, and approaches to death and dying. Healthcare providers must be prepared to take patients' religious and spiritual preferences into account as an important part of the treatment plan (Swihart et al., 2022). A thorough cultural assessment should include information on a patient's religious or spiritual beliefs that might affect their care.

FIGURE 5.9 Religion and health are closely intertwined for many people. (credit: "Guatemalan Clergymen Lead Sunday Mass Aboard USNS Comfort" by Navy Medicine/Flickr, Public Domain)

Age

Older adults struggle with some limitations in their care related to their age. Studies have shown that healthcare providers are more likely to assume that older patients' conditions, such as cognitive decline, are due to their age and to deny them certain treatments as compared to younger patients (Hughes et al., 2020). Older patients also tend to be undertreated for pain and depression. Older adults are more likely to live in poverty and have limited access to transportation, which can make it difficult to get to medical appointments.

Gender Identity and Sexual Orientation

A person's inner sensibility that they are a man, a woman, or perhaps neither is **gender identity**. The term **cisgender** is used to describe a person whose identity matches their sex assigned at birth. To the extent that a person's gender identity does not conform with the sex assigned to them at birth, they may identify as transgender or as gender nonbinary. The term transgender refers to someone whose gender identity or expression differs from traditional cultural gender roles for one's sex assigned at birth. Transgender people, like cisgender people, may be sexually oriented toward men, women, both sexes, or neither sex. Gender expression refers to a person's outward demonstration of gender in relation to societal norms, such as in style of dress, hairstyle, or other mannerisms. Sharing pronouns as part of a basic introduction to a patient can assist a transgender patient to feel secure sharing their pronouns in a healthcare setting. Asking a patient for their pronoun (he, she, they, ze) is considered part of a nursing assessment.

There is a strong body of research showing a history of gender bias in health care (Hughes et al., 2020). Providers are more likely to believe that the health complaints of women result from emotional instead of physical causes compared to men. There is also a demonstrated history of underdiagnosis and undertreatment of cardiovascular disease in women when compared to men.

A person's physical and emotional interest or desire for others is their sexual orientation. Sexual orientation is on a continuum and is manifested in one's self-identity and behaviors. The acronym LGBTQIA+ stands for lesbian, gay, bisexual, transgender, queer or questioning, intersex, or asexual in reference to sexual orientation. (The "+" is sometimes added after LGBTQIA+ to capture additional orientations.) Historically, individuals within the LGBTQIA+ community have experienced discrimination and prejudice from healthcare providers and avoided or delayed health care due to these negative experiences. Despite increased recognition of this group of people in recent years, members of the LGBTQIA+ community continue to experience significant health disparities.

Disability

Disabilities can be present from birth or acquired later in life. They can be physical, cognitive, or mental health related. Adults with disabilities are more likely than adults with no disabilities to report poor health, including higher

rates of obesity, diabetes, smoking, lack of physical activity, and cardiovascular disease. Adults with disabilities are also more likely to live in poverty, and even those with health insurance are less likely than adults without disabilities to seek care. Adults with disabilities also cite common stereotypes, bias, and beliefs among providers as barriers to care (VanPuymbrouck et al., 2020). Examples include lack of appropriate equipment to transfer patients with disabilities, or a healthcare provider's assumption that the patient is unhealthy or fragile simply because they have disabilities.

Education Level

Differences in educational levels can affect how people access healthcare services and understand health information to make informed decisions. The higher a person's level of education, the higher is their life expectancy and the more likely they are to access preventative and screening services (Viinikainen et al., 2022). People with lower education levels are more likely to have higher weight and to engage in risky activities such as smoking and heavy drinking (Viinikainen et al., 2022). In the United States, the health disparities between the most educated and least educated people have been increasing over the last forty years, leading to an increasing discrepancy in morbidity and mortality rates among these groups (Viinikainen et al., 2022).

Physical Characteristics

Certain physical characteristics have the potential to create barriers to care. Patients who are deaf or blind may need accommodations to ensure that communication is clear and accurate. American Sign Language interpreters can be sought for patients who are deaf. Educational materials and consent forms printed in Braille can assist blind populations.

Socioeconomic Status

In the United States, socioeconomic status is a major determinant of health status. Individuals from low socioeconomic groups, including those experiencing homelessness or living in poverty, are prone to higher rates of diseases like heart disease, diabetes, stroke, and obesity (Baggett et al., 2013; Fazel et al., 2014; National Academies of Sciences, Engineering, and Medicine, 2017b). This is attributed to their limited opportunities for early prevention and a lack of resources to adhere to standard treatment plans (Baggett et al., 2013; Fazel et al., 2014; National Academies of Sciences, Engineering, and Medicine, 2017b). For instance, someone experiencing homelessness is unable to perform clean dressing changes daily without adequate access to water. They also have higher rates of infant mortality, substance misuse, and shorter life expectancies. Additionally, they may report avoiding care because they feel discrimination from healthcare workers (Hughes et al., 2020).

In 2021, the majority of Americans relied on privately purchased insurance for their health care. Most of this insurance is made available through employers. About 35 percent of the population holds a public form of insurance in the form of Medicaid or Medicare. Medicare is for those who have been determined to need special care such as older people or those who experience certain disabilities. Medicaid is for those who need aid in receiving care, such as people who meet certain low-income guidelines (Keisler-Starkey & Bunch, 2022).

Veteran Status

Military veterans often have complex needs due to physical and psychological trauma sustained during military service and socioeconomic issues that arise after discharge (Figure 5.10). Many veterans struggle with a lack of access to healthcare benefits, sometimes based on residing in rural locations that do not have veteran-specific healthcare facilities. The Veterans Administration offers free health care to veterans who meet certain low-income guidelines, allowing these patients to be seen at any facility.

FIGURE 5.10 Veterans are an especially at-risk population who often have complex needs. (credit: "210512-N-QB805-0110" by Navy Medicine/Flickr, Public Domain)

Factors Preventing Sensitivity to Diversity

Sensitivity to diversity can be hindered by several factors that are related to a person's experiences, attitudes, and knowledge. One significant factor is a lack of exposure to diverse individuals and cultures. Limited exposure can lead to a lack of understanding and appreciation for diversity. Stereotyping and prejudice can also contribute to insensitivity, as preconceived notions or stereotypes about certain groups can lead to discrimination and bias. Personal biases can influence perceptions and attitudes toward different groups, leading to insensitivity. Additionally, a lack of education or awareness about different cultures and backgrounds can lead to misunderstandings. Overcoming these barriers requires ongoing education, open-mindedness, and a willingness to learn about and appreciate different cultures and backgrounds. It also requires actively challenging one's biases and seeking out opportunities for exposure to diversity.

Stereotyping

The assumption that a person has the attributes, traits, beliefs, and values of a cultural group because they are a member of that group is termed **stereotyping**. Engaging in stereotyping prevents the ability to identify people's needs on an individual level. One common stereotype is the assumption that all older patients are forgetful or have memory problems. This stereotype can lead to medical professionals overlooking or dismissing legitimate concerns or symptoms of older patients, attributing them solely to age-related memory decline, which can in turn lead to misdiagnosis or delayed treatment. Stereotypes can be harmful to patients and must be avoided. Culturally competent care extends beyond general knowledge of a cultural group to knowledge of the individual themself.

Cultural Imposition

The imposition of one's own values, beliefs, and practices upon another person or group is **cultural imposition**. Cultural imposition runs counter to cultural humility and can manifest in various ways. Examples include disregarding a patient's cultural practices, beliefs, and values when making medical decisions, or imposing Western medical practices on non-Western cultures without consideration for their unique cultural beliefs and practices. For instance, healthcare providers may fail to consider a patient's traditional healing practices or the role of family members in healthcare decisions, which can lead to a breakdown in communication and a lack of trust between patients and healthcare providers. Cultural awareness can help the nurse recognize their own biases and avoid

cultural imposition.

Cultural Blindness

The belief that all cultural groups are the same and share identical experiences is **cultural blindness** (Bhattacharya et al., 2019). Different cultural groups can have vastly different experiences within the healthcare system. Cultural blindness might lead a nurse to conclude that all treatment services are adequate for all patients, contributing to the continuation of policies that prevent diversity and inclusion. For instance, a hospital might stock consent forms available in English and Spanish exclusively. However, despite a significant local Vietnamese population, the nurse consistently faces difficulty in locating consent forms in Vietnamese for these patients. This is a result of system-wide cultural blindness. Once the nurse identifies the issue, they can escalate it and have the issue addressed by having adequate Vietnamese-language consent forms available for the patient population.

To address cultural blindness in health care, providers should receive regular cultural competency training and actively work to understand and respect the diverse backgrounds of their patients. This includes learning about cultural beliefs and practices related to health and illness, as well as developing effective communication strategies that bridge language and cultural barriers.

Culture Conflict

A **culture conflict** occurs when there is tension or opposition between different cultures. Often, the dominant culture weakens the cultural practices of the minority group as a result (APA, n.d.b). Culture conflict can arise in many ways, such as when a patient's cultural beliefs around illness and healing differ from those of the healthcare provider, or when a patient's cultural practices conflict with medical protocols. For example, a patient who refuses to receive a blood transfusion due to religious beliefs may have conflict with the nurse who sees this treatment as medically necessary.

Culture conflict can also arise when healthcare providers make assumptions or judgments about patients based on their cultural background, leading to biases and discrimination. This can result in disparities in healthcare access and outcomes for patients from diverse backgrounds. Nurses should approach such conflicts with cultural humility to ensure they are resolved without damage to the nurse-patient relationship.

Barriers to Communication

It is necessary to overcome communication barriers to maximize the patients' opportunities for the highest quality care. According to the Agency for Healthcare Research and Quality (2020), approximately three out of 100 people in the United States have a hearing disability, and two out of 100 have a visual disability to the extent that they are blind or have trouble seeing even with corrective vision wear. Various strategies can help improve the communication process for these patients.

For patients with hearing barriers, offer print materials, text telephones (TTYs), or videos with captioning. Sign language interpreters use American Sign Language or Signed English; there are also oral and cued-speech interpreters who use articulation and gestures. When having conversations, make sure the television or other sources of background noise are silenced and the surrounding environment is free of distracting noise.

For patients with sight barriers, make sure that the lighting is at their comfort level. Whenever possible, provide assistance in the form of audio recordings, large-print materials, and screen magnifiers. Text-to-speech or Braille output screen reading software is also available.

Linguistic Competence

According to a recent study, nine percent of the U.S. population has limited English proficiency (Agency for Healthcare Research and Quality [AHRQ], 2020). Linguistically competent care aims to help reduce these discrepancies. The AHRQ defines linguistic competence as "providing readily available, culturally appropriate oral and written language services to limited English proficiency members through such means as bilingual/bicultural staff, trained medical interpreters, and qualified translators" (AHRQ, 2019).

Educational materials, instructions, and consent forms should be offered in the patient's preferred language and written using simple language. When caring for a patient whose primary language is not English and they have a limited ability to speak, read, write, or understand the English language, seek the services of a trained medical interpreter. Healthcare facilities are mandated by The Joint Commission to provide qualified medical interpreters.

Use of a trained medical interpreter is linked to fewer communication errors, shorter hospital stays, reduced thirty-day readmission rates, and improved patient satisfaction.

Refrain from asking a family member to act as an interpreter. The patient may withhold sensitive information from them, or family members may possibly edit or change the information provided. Unfamiliarity with medical terminology can also cause misunderstanding and errors.

Medical interpreters may be on-site or available by videoconferencing or telephone. The nurse should also consider coordinating patient and family member conversations with other healthcare team members to streamline communication, while being aware of cultural implications such as who can discuss what healthcare topics and who makes the decisions. When possible, obtain a medical interpreter of the same gender as the patient to prevent potential embarrassment if a sensitive matter is being discussed.

Some additional guidelines for working with a medical interpreter are as follows:

- Allow extra time for the interview or conversation with the patient.
- Whenever possible, meet with the interpreter beforehand to provide background.
- Document the name of the medical interpreter in the progress note.
- Always face and address the patient directly, using a normal tone of voice. Do not direct questions or conversation to the interpreter.
- Speak in the first person (using “I”).
- Avoid using idioms, such as, “Are you feeling under the weather today?” Avoid abbreviations, slang, jokes, and jargon.
- Speak in short paragraphs or sentences. Ask only one question at a time. Allow sufficient time for the interpreter to finish interpreting before beginning another statement or topic.
- Ask the patient to repeat any instructions and explanations given to verify that they understood.

Summary

5.1 Understanding Cultural Differences

Culture is a set of beliefs, attitudes, and practices shared by a group of people or community that is accepted, followed, and passed down to other members of the group. An individual's cultural background influences their beliefs, feelings, and attitudes toward health care. Their culture informs how they view health and illness, how they view healthcare providers, and how receptive they are to treatment plans. Culture also determines who receives care and the quality of their care. Certain cultures experience higher rates of disease due to genetics or health disparities caused by socioeconomic factors. Various cultures have their own traditional healing practices and beliefs, and many people still use these practices either alongside or in place of Western medicine. Nurses often care for patients from cultures different than their own, with different beliefs and practices. Respecting individual differences and staying mindful of both explicit (conscious) and implicit (unconscious) biases are crucial to counteract such biases and ensure the delivery of optimal care.

5.2 Ethical Practice in Culture and Diversity

Accommodating diverse cultural practices begins with the practice of cultural humility. By seeking cultural assistance from appropriate sources and practicing cultural negotiation, the nurse can demonstrate respect for diverse cultures. Engaging in cultural diversity practices can range from one-on-one conversations with patients, to researching written history, to actively participating in different cultural activities and experiences. Being responsive to cultural diversity involves understanding cultural differences and being willing to overcome personal biases to accommodate the cultural preferences of a patient in order to provide the most culturally competent care.

5.3 Cultural Practice in Nursing

When providing care for patients from diverse cultural practices, it is necessary to perform a thorough cultural assessment to gain information on patient-specific details. The Transcultural Nursing Society developed Standards of Practice for Culturally Competent Nursing Care, which serve as universally applicable guidelines for nurses in all aspects of culturally competent nursing care. Cultural competency is important because it has the power to improve the quality and safety of care and lead to better health outcomes for culturally diverse patients. Various factors can impact diversity and inclusion in nursing, including the six cultural phenomena: communication, space, social organization, time, environmental control, and biological variations. The best way to counteract this is to identify biases and change practices going forward.

5.4 Diversity, Equity, and Inclusion

Important considerations related to providing equal, diverse, and inclusive nursing care include health equity and health disparities. The nurse should be aware of possible disparities in the patient population and strive to foster a culture of mutual respect, understanding, and support, which can lead to improved patient outcomes. Factors that can prevent diversity and inclusion include stereotyping, cultural imposition, cultural blindness, and culture conflict. Barriers to communication can affect diversity and inclusion by causing barriers to inclusion related to language, literacy, and accessibility for all patients, not just deaf and blind patients.

Key Terms

alternative therapies nonmainstream approaches that are used in place of conventional Western medical care

Ayurveda a traditional Hindu form of medicine from India that is based on the idea that disease is caused by an imbalance in the body

cisgender relating to or being an individual whose gender identity aligns with the biological sex they were assigned at birth

collectivism when a culture emphasizes the importance of the community over the individual

complementary therapies nonmainstream approaches to health that are used alongside conventional Western medical care

cultural blindness the belief that all cultural groups are the same and share identical experiences

cultural competence ability to respect and understand one's own beliefs and values as well as how these values and beliefs may differ between cultures

cultural humility a humble and respectful attitude toward individuals of other cultures that pushes one to

challenge their own cultural biases, realize they cannot know everything about other cultures, and approach learning about other cultures as a lifelong goal and process

cultural imposition the imposition of one's own values, beliefs, and practices upon another person or group

cultural knowledge seeking information about cultural health beliefs and values to understand patients' worldviews

cultural negotiation a process by which the patient and nurse seek a mutually acceptable way to deal with competing interests of nursing care, prescribed medical care, and the patient's cultural needs

cultural self-awareness a person's understanding of their own culture and its impact on themselves

culturally competent care health care that incorporates and values a patient's culture when caring for the patient

culture the common beliefs, values, symbols, language, behaviors, and practices that unite a group

Culture Care Theory (CCT) (also known as Theory of Culture Care: Diversity and Universality) framework for transcultural nursing and the development and practice of culturally competent nursing care

culture conflict tension or opposition between different cultures

curanderismo a holistic practice rooted in beliefs that health is achieved through the right balance of mind, body, and spirit

ethnocentrism the belief that one's culture (or race, ethnicity, country) is better than and preferable to another's

explicit bias a consciously held set of beliefs about a particular person, situation, or group of people based on characteristics

gender identity a person's deeply felt, internal and individual experience of gender, which may or may not correspond to the person's physiology of designated sex at birth

health disparity differences in health outcomes that result from social determinants of health

health equality the principle of ensuring all individuals, regardless of their background or socioeconomic status, have equal access to healthcare resources and opportunities

health equity when everyone has a fair opportunity to obtain optimal health

implicit bias an automatic reaction toward a person, situation, or group of people involving subconscious feelings, perceptions, attitudes, and stereotypes

inclusion the practice of creating an environment in which individuals of all backgrounds feel respected, valued, and supported

individualism when a culture focuses on the importance of the individual over community

interpersonal component of cultural humility that involves respect for the patient's culture and openness to their beliefs and experiences

intrapersonal component of cultural humility that consists of a personal awareness of one's own limited knowledge of the patient's culture

justice a principle and moral obligation to act on the basis of equality and equity

racism the belief that races are distinct from one another and that there is a hierarchy to race, implying that races are unequal

social determinants of health (SDOH) economic, social, and environmental factors that influence an individual's health and well-being

stereotyping the assumption that a person has the attributes, traits, beliefs, and values of a cultural group because they are a member of that group

Traditional Chinese Medicine (TCM) an ancient practice based on the ideas of Qi and yin and yang

traditional healing various medicines and healing practices around the world that differ from the modern, Western healthcare system

transcultural nursing nursing that incorporates cultural beliefs and practices of individuals to help them maintain and regain health or to face death in a meaningful way

Assessments

Review Questions

1. What is the term used to refer to the integration of an individual's cultural beliefs into their health care?

a. cultural integrity
b. culturally competent care
c. holistic care

d. integrative care

2. A patient is admitted to the medical-surgical floor for uncontrolled hypertension. He is a seventy-five-year-old Hispanic man who speaks fluent English. He tells the nurse that he has been seeing a curandero, or traditional healer, for his health issues for the last several years. What is the best initial response from the nurse?
   a. Ask the patient for a list of all herbs, plants, and special diets that he is currently taking.
   b. Educate the patient on why adherence to a Western medical treatment plan is better for his health.
   c. Inform the patient that the treatment he has been receiving from the curandero is not evidence based.
   d. Tell the patient he is welcome to continue whatever traditional treatments he likes while he is in the hospital.

3. You are a nurse and have just finished taking a course on identifying implicit bias. You decide to journal after one of your shifts to reflect on any possible instances of implicit bias in your workday. What might an interaction reflecting implicit bias look like?
   a. You are frustrated when you learn during report that one of your patients is an 82-year-old male with dementia who is forgetful, difficult to redirect, and often agitated.
   b. You learn that one of your patients went to another high school in your hometown. You rush through your medication pass so you can spend some extra time talking to this patient.
   c. One of your patients is a 59-year-old female from Syria. During report, the patient's previous nurse explains to you that the patient's husband is at the bedside and that when the patient is questioned, he usually answers the questions for her. The nurse states "I think it's really sexist, but they are from the Middle East."
   d. You enter the room of your patient who is a 23-year-old Black female with a history of alcohol misuse. She is on alcohol withdrawal protocol and has orders for frequent vital signs. She shares with you her drinking history and how difficult it is for her to stop. You empathize with her and tell her you are supportive of her efforts to get sober.

4. What is the term used to describe nonmedical factors that influence health outcomes, including conditions in which people are born, grow, work, live, and age, and the wider sets of forces and systems shaping the conditions of daily life?
   a. environmental influences
   b. life circumstances
   c. situational occurrences
   d. social determinants of health

5. A process where the patient and nurse seek a mutually acceptable way to deal with competing interests of nursing care, prescribed medical care, and the patient's cultural needs is known as cultural negotiation. What would be an example that demonstrates cultural negotiation?
   a. a nurse insisting the patient shave his facial hair
   b. a nurse demanding daily medication be taken at 0900, when the patient wakes daily at 0500
   c. a nurse planning to keep the patient's hijab in place for a surgical procedure
   d. a nurse requesting a special religious healer visit the patient after admission

6. While learning about Chinese culture and attending local presentations on culturally competent care, you discover a local event happening in your area. You decide to ask a group of coworkers to join you in attending a local Chinese New Year parade. This is an example of engaging in what type of cultural diversity practice?
   a. active learning
   b. interpersonal awareness
   c. intrapersonal awareness
   d. willingness to change

7. What is an example that illustrates being culturally competent?

a. attending an Indian dance night at a local community center
b. educating the patient on your own cultural practices
c. implementing a system to improve cardiovascular health screening procedures for Black women at your hospital
d. insisting a patient answer your questions instead of her husband answering

8. What is an example of cultural humility?
a. a nurse allowing a non-English-speaking patient's son to translate for them
b. a nurse listening to a patient who is pregnant explain why they want a traditional midwife from their own culture present in the room while they are delivering their baby
c. a nurse administering a new medication to a patient with limited English, even though the translator is late, so that it can be given on schedule
d. a nurse giving the patient discharge paperwork printed in their preferred language because they do not have time to verbally discuss discharge instructions with the patient

9. What is the purpose of the Theory of Culture Care: Diversity and Universality?
a. to provide a framework for transcultural nursing and the development and practice of culturally competent nursing care
b. to explain the many cultural differences that exist among communities
c. to shape the beliefs of nurses regarding certain health- and wellness-related customs among historically marginalized communities
d. to provide patients with a way to address health disparities and systemic inequality in the healthcare system

10. Taking a test to examine your own implicit biases is an example of which of the twelve standards of practice for culturally competent nursing care?
a. critical reflection
b. culturally competent practice
c. knowledge of cultures
d. social justice

11. According to Giger and Davidhizar's Six Cultural Phenomena, all communication exists in the context of which factor?
a. biology
b. environment
c. space
d. time

12. What is one important purpose of cultural competency?
a. to improve the quality of care leading to better health outcomes for culturally diverse patients
b. to ensure that the predominant cultural voices in a community are the ones who shape healthcare practices
c. to prevent unscientific beliefs from influencing important medical decisions
d. to provide education to cultural communities on how they can best adapt their practices to suit the modern healthcare system

13. What term describes the state in which everyone has a fair and just opportunity to obtain their highest level of health?
a. health equality
b. health equity
c. fairness
d. justice

14. You receive report from another nurse who tells you that your patient is an 82-year-old Chinese female. You know that you will have a good day with this patient as older Asian women are usually very polite, easy to get along with, and compliant with your requests. What prevents you from recognizing diversity and inclusion?
    a. cultural application
    b. cultural blindness
    c. ethnocentrism
    d. stereotyping

15. You have a patient who is Spanish-speaking only, and you are required to obtain their signature on a consent form. The patient requests that their family member interpret for them. What is the most appropriate response?
    a. Ask the family member to leave the room and use an official translator.
    b. Find an official translator to assist with the conversation along with the patient and family member.
    c. Proceed with allowing the family member to interpret.
    d. Tell the patient that you are only allowed to use official translators or interpreters.

Check Your Understanding Questions

1. Describe ways in which a nurse can provide culturally sensitive nursing interventions for a patient in pain.
2. Describe how a nurse can overcome implicit bias.
3. List some specific ways in which to engage in cultural diversity practices.
4. What are some ways to demonstrate responsiveness to diversity and inclusion?
5. Describe the steps to beginning a culturally sensitive nursing assessment.
6. List five different types of alternative and complementary therapies.
7. Why do you think the Transcultural Nursing Society included Multicultural Workforce as one of their Twelve Standards of Practice for culturally competent care?
8. Describe the guidelines for working with a medical interpreter.

Reflection Questions

1. Why is it important for nurses to be aware of the health practices associated with various cultures?
2. Why is cultural humility such an important part of cultural competence?
3. The concept of cultural blindness is the belief that all cultural groups are the same and share identical experiences. How would experiencing cultural blindness be a barrier to diversity and inclusion?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #1: Part 4.
   How would you react if the patient requested to perform a traditional healing method including prayer, candles, and herbs during their stay in the hospital?
2. Refer to Unfolding Case Study #1: Part 6.
   What are some ways the nurse could display cultural competence when caring for the patient?

What Should the Nurse Do?

1. Francine, a new graduate nurse, was offered a full-time position on the dialysis floor of an acute care hospital. The new hire process includes a six-week training program that allows the new hire to observe and work closely with a seasoned employee. On Francine's first shift, she realizes that she has been assigned to shadow Muhammad. Muhammad has been an employee for over ten years and was awarded Nurse of the Year two years ago. Francine notices that with each patient interaction, he educates the patient on both conventional Western medical treatments and traditional healing remedies. Francine is very confused; she

thought that Western medicine was superior to that of traditional healing practices. She decides to confront Muhammad. If you were Muhammad, how would you explain to Francine that her thought process is impacting diversity and inclusion?

2. The nurse is assigned to care for a patient whose background differs from their own and wants to make sure to identify factors that can prevent diversity and inclusion when assessing the needs for this patient and family. What factors should the nurse consider?

3. A new graduate nurse takes a job with a travel company and for the first time leaves her southern state. She is stationed in an area that primarily serves a Jewish-based population. She has never cared for this population but wants to learn as much as possible while on this assignment. After analyzing content from this chapter, apply some factors that can prevent the nurse from achieving diversity and inclusion in her new setting. How would the nurse achieve incorporating these factors?

Competency-Based Assessments

1. Use various sources to research diverse cultural communities in your region. Note important cultural factors such as language, race/ethnicity, and religion. Discuss how these cultural factors might impact the abilities of these diverse communities to access health care.

2. Identify a diverse cultural event in your community in which you can actively participate, such as a meal, dance, or festival. Attend the event and write a journal entry about your experience. What did you learn about diversity at this event? Did it help you to identify any implicit biases? What lessons will you take with you as you begin your nursing practice?

3. Have you ever experienced or witnessed an interaction where there was a lack of cultural competency? What factors caused the lack of cultural competency? Discuss how you can use your experiences to ensure better diversity and inclusion in nursing.

4. Develop a fifteen-minute presentation on an alternative or complementary therapy.

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CHAPTER 6
Promoting Individualized Care

FIGURE 6.1 Healthcare workers and patients work together to provide patient-centered, holistic, and person-centered care. (credit: "Patient Walking With Nurses" by NIH Clinical Center/Flickr, CC BY 2.0)

CHAPTER OUTLINE

6.1 Patient-Centered and Holistic Health Care
6.2 Foundations for Providing Person-Centered Care

INTRODUCTION In the 1970s, psychiatrist George Engel developed the biopsychosocial model of illness. Engel used Carl Rogers's theory of person-centered therapy as his foundational framework. Engel's theory was a different medical model than what was trending at the time; it focused on how disease and illness affected multiple dimensions of a person. Engel believed for a person to be fully healed, the mind, body, and soul must be treated equally. His approach was that illness affects multiple parts of a person at once. He believed regardless of which bodily processes were affected, a person's psychosocial aspect would be affected at the same time. For instance, a person diagnosed with a mental disorder experiences changes in brain chemistry (bodily process), but they will also experience difficulties interacting with other people (psychosocial). While Engel's biopsychosocial model wasn't very popular at the time of its development, it is what inspired the current model for patient-centered care (PCC) used in today's health care.

6.1 Patient-Centered and Holistic Health Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain patient-centered nursing care
- Recognize how providing patient-centered care increases interaction among stakeholders
- Describe interventions nurses can include in the care plan to promote holistic nursing care

The term **patient-centered care (PCC)** is a healthcare delivery model that aims to ensure the patient is an equal partner in their health care. Patient-centered care can be described as the framework for providing care to individuals. Relatedly, **holistic care** is aimed at healing all parts of the body, mind, and spirit. Holistic nursing strives to care for all the needs of the body, mind, and spirit. Holistic care is a philosophy for nursing linked as far back as the beginning of the profession. Florence Nightingale, the founder and first theorist of nursing, developed the Nightingale theory still incorporated in nursing today. See Chapter 1 Introduction to the Nursing Profession: Evolution, Theories, and Practice for details regarding nursing theories. Nightingale believed a person's health was directly tied to their physical environment, and healing the whole person was the nurse's goal. She encouraged the addition of clean air, clean environment, and sunlight in order to care for a person. This could be accomplished by opening a window to let in sunlight and fresh air. This simple task not only removed germs from the environment but also increased the patient's feeling of happiness when they felt the warmth of the sun. She believed in providing a bath to a patient to reduce germs and increase feelings of worthiness and cleanliness.

Patient-Centered Care

Patient-centered care aims to empower patients to become active participants in their care, with the hope of giving them self-management in the process. Healthcare providers are patient advocates who strive to provide safe, efficient, cost-effective care. Patient-centered care requires improved communication among healthcare professionals and patients. For example, when a patient visits a doctor's office, they are allowed to focus on describing how they are feeling and functioning versus just discussing the progression of a diagnosed disease. Another example of improved communication is when patients are encouraged to use electronic patient portals to review upcoming appointments and suggested treatment plans. Empowering patients to get involved in their care increases the probability of compliance.

Nurses are tasked with providing patient-centered care to focus on the whole person. As part of the nurse–patient relationship, nurses are primed to understand and incorporate more patient-centered care during healthcare delivery than other healthcare providers. For instance, consider a patient who reports overall pain and sleepiness. While the physician may diagnose the patient with depression, the nurse may uncover that the patient's close friend died recently and the patient is spending more time in bed. The nurse was able to spend more time discovering why the patient had the complaints, and these contributing factors could add to why the patient is complaining of overall pain. The nurse might also question the patient about their daily routine and eating habits to provide more clues for better patient-centered care. The nurse looks at the whole patient, not just the diagnosis or complaint, to get a better understanding of the situation. The nurse can collaborate with the physician and act as a liaison between the physician and patient to improve care and outcomes.

Patient-centered care models emerged as best practice standards in nursing and can be achieved through care coordination and integration of care. For example, nurses demonstrate respect for patients' values, preferences, and expressed needs. Nurses can provide patients with information and education related to disease development and progression. They provide patients with both physical and emotional support, while attempting to alleviate patients' fear and anxiety. Patient-centered care also includes the involvement of family and friends.

Benefits of Patient-Centered Care

There are multiple benefits of patient-centered care. Patients who receive patient-centered care report more satisfaction with care received, higher rates of patient engagement, and better healthcare outcomes. The benefits can translate into faster recovery and lower emergency room visits or readmission rates, all of which affect the total cost of patient care. Positively affecting the total cost of patient care allows for healthcare providers to meet benchmarks set by health insurance companies, which lowers population-wide healthcare costs.

LINK TO LEARNING

The American Medical Association (AMA) website (https://openstax.org/r/77AMAwebsite) discussed trends in healthcare spending along with policy research perspectives.

Care Coordination

The term care coordination is the specific coordination among team members to organize healthcare activities. Care

coordination is an important factor in providing effective, efficient, and safe patient-centered care. High-quality, high-value care is delivered as the best care possible with efficient resources achieving optimal results for each patient. Consider a patient receiving a timely referral or quick turnaround time getting an appointment with physical therapy. High-value examples include multiple specialties within one practice, such as physical therapy, occupational therapy, and speech therapy available in one practice. Care coordination goals for the nurse should include the delivery of high-quality, high-value health care.

Care coordination also provides a foundation for improving patient care outcomes, which benefits the patient, providers, and the healthcare system. Care coordination can be as simple as establishing accountability and agreeing upon responsibility within the healthcare team. For example, creating a care plan for an individual with diabetes would include podiatry, endocrinology, ophthalmology, diabetes education, and nutrition services. Another example might be coordinating pediatric care for a child with juvenile arthritis.

Care coordination also involves linking the patient with community resources and aligning community resources with population needs. For example, when facilities utilize integrated electronic health records across specialties, it allows healthcare providers real-time access to accurate patient information such as screenings, laboratory tests, and prescriptions. With this integrated access, duplicating laboratory tests does not occur, which controls overall costs.

LINK TO LEARNING

The Agency for Healthcare Research and Quality's Care Coordination Quality Measure for Primary Care (CCQM-PC) (https://openstax.org/r/77CCQM-PCsurvey) is a free downloadable survey in the public domain that assesses adult patient experiences with care coordination in primary care settings.

Transparency in Care

When establishing trust in a patient–healthcare provider relationship, it is important to have transparency. Transparency gives the patient protection and greater control over the care they receive. Many healthcare providers utilize electronic health records so patients can see the results of their own laboratory tests and exams, providing transparency with the test results. When providers review with patients the necessity for why certain diagnostics are ordered, such as a magnetic resonance imaging (MRI) scan versus a computerized tomography (CT) scan, this is another example of transparency.

Transparency can include data and interoperable systems as well. For instance, hospital outcomes data are publicly available so that healthcare consumers can choose where they receive care. Data transparency provides patients with the information to make smart decisions about the quality of the health care and receive the best value for their healthcare dollars. Transparency in health care promotes care coordination and the concept of high-quality, high-value care. As patients are more aware of the costs, able to make better choices for care, and participate in programs that promote care coordination, better health outcomes should occur. Transparency also increases accountability and competition among healthcare organizations.

LINK TO LEARNING

From the Agency for Healthcare Research and Quality, the TeamSTEPPS 3.0 Pocket Guide (https://openstax.org/r/77STEPPSPockGui) is a quick reference tool for communication among healthcare providers. Download the app and use it during patient care.

Increased Interaction

Increased interaction is an important tenet of PCC. Patient-centered care increases interaction among the patient and the healthcare providers and can include other stakeholders in the patient's care, such as the patient's family and the interdisciplinary healthcare providers. As part of the interdisciplinary healthcare team, nurses are responsible for improving communication during rapidly changing medical conditions. One way a nurse can improve communication is by implementing more frequent patient room checks. Increased interaction and improved

communication, such as following up with patients after surgical procedures, with test results, or after new medications are started, has positive effects on patient satisfaction, length of stay, and adverse events (Wang et al., 2018).

Patient Involvement in Decision-Making

Patient-centered care promotes the patient to be an active team member in their own care plan. Increased interaction among team members means the patient is involved in all aspects of the decision-making process. Research suggests that patients who participate in decision-making not only have better healthcare outcomes, improved satisfaction with health care, and reduction of healthcare costs, but also can reduce their mortality from chronic disease (Paterick et al., 2017). A patient who is involved in self-managing their chronic conditions has a better prognosis and longer quality of life than patients who are not involved in self-management (Delaney, 2018).

Family Involvement in Decision-Making

When families are involved in the decision-making process, patients are more prone to following through with the care plan because the family can provide additional resources for the patient. Many times, patients rely on a loved one or significant other to provide support and guidance. Making sure all parties understand ensures compliance with the assigned healthcare tasks. If a patient is under 18 years of age or is not capable of making decisions for themselves, then a family member is typically assigned as the **medical power of attorney**, or the person in charge of making medical decisions for the patient. Patients can deem someone as medical power of attorney in charge of making medical decisions for them if they are unable to. Regardless of the scenario, to achieve care coordination, the patient's family should be involved in the decision-making process to achieve better outcomes.

Support for Self-Management

Increased patient interaction also means supporting the patient in self-management of their own healthcare needs. One way to achieve this goal is when the nurse empowers the patient through education. Nurses should help patients realize they are in control of their own health; health care is not a passive process in which only the healthcare provider tells them what to do. A patient's health is self-managed based on the decisions they make throughout the day, week, months, or years. For example, if a patient has diabetes and chooses to eat a high-sugar, high-carbohydrate snack, that action will have a negative effect on their health. The nurse can provide education on snacks with a low glycemic index and empower the patient to make health-conscious decisions.

It is also the nurse's responsibility to inform the patient that they have options for their care. Patients should be encouraged to explore different treatment options if they feel another plan is more reasonable. Interacting with the patient as a key team member in their care plan enables support of self-management.

PATIENT CONVERSATIONS

How Nurses Can Empower Patients with Information

Scenario: Nurse walks into the room in the healthcare provider's outpatient office to complete an assessment. The nurse starts by taking the patient's blood pressure.

Nurse: Hi, my name is Alice, and I am going to be your nurse today. Is it okay if I take your blood pressure?

Patient: Yes.

Nurse: Your blood pressure is 144/86.

Patient: Is that normal?

Nurse: Your blood pressure is a little high. We consider a normal blood pressure around 120/80.

Patient: Should I be worried? What do the numbers mean?

Nurse: There are two numbers for blood pressure: a top number and a bottom number. The top number is the amount of pressure your heart must exert against your blood vessels when your heart is at work. It is called the systolic number. The bottom number is the amount of pressure your heart must exert against the blood vessels when your heart is at rest. It is called the diastolic number. High blood pressure increases your risk for stroke, heart

attack, kidney disease, and eye disease.

Patient: I thought my blood pressure was high. That is why I came here today. What can I do to lower my blood pressure?

Nurse: There are many things you can do to lower your blood pressure, such as decrease your salt intake, exercise, stop smoking, drink less alcohol, maintain a reasonable weight, and avoid stress. Do you think there are some behaviors that I just listed that you could work on?

Patient: Yes, I can decrease my salt intake and exercise more. Thank you for talking to me about high blood pressure.

Nurse: I will get some educational pamphlets regarding ways to lower your blood pressure for you to take home today just in case you need to look back over them later. I also suggest you get an at-home blood pressure monitor, so you can start recording your blood pressure daily. Bring your recording log into the office next time you come in so we can see how your changes are helping to improve your blood pressure.

(Based on Funnell, 2000.)

Thoughtful Practice

Practicing care in a way that reflects compassion and incorporates empathy for a patient's unique situation is known as **thoughtful practice**. The patient remains the nurse's center of attention, which promotes the patient's overall well-being. Thoughtful practice allows for reflection upon everyday situations and finding ways to make improvements. Tasks, such as delegation and decision-making, are founded on thoughtful practice. Nurses who incorporate thoughtful practice strive to develop therapeutic nurse–patient relationships to provide a more patient-centered approach to meeting healthcare needs.

Self-Knowledge

Nursing is a life-long learning process. Increasing self-knowledge, the understanding of one's own motives and character, is an important aspect of being a nurse. Nurses should participate in ongoing education. Nurses have a responsibility to their profession and to their patients to keep up to date on current research. Researching the most current evidence gives the nurse a way to incorporate knowledge into their practice. To provide effective, quality PCC, the nurse needs to be as knowledgeable as possible in the patient's individual healthcare needs. Nurses join relevant nursing societies or participate in statewide nursing organizations, which provide nurses with current data and research to increase self-knowledge.

Providing Holistic Nursing Care

Holistic nursing care encompasses treating the patient's mind, body, and spirit as one. The American Holistic Nurses Association (AHNA) is a specialty nursing association that was developed to help nurses practice health more holistically through advocacy, research, and education. Nurses can join the AHNA and be linked with resources for practicing nursing more holistically.

LINK TO LEARNING

The American Holistic Nurses Association (https://openstax.org/r/77AHNAwebsite) is where nurses can find resources for practicing health care more holistically. Click on the resource tab at the bottom of the page and complete one of the self-care modalities.

Interdisciplinary Holistic Healthcare Providers

Interdisciplinary holistic healthcare providers include traditional treatments along with complementary and alternative treatments to provide overall health and well-being. Complex health problems that require a team approach or coordination of palliative care are two examples where interdisciplinary holistic healthcare providers would be utilized. For example, a patient on palliative care might require their spiritual, psychological, and physical needs to be met. When a team of interdisciplinary holistic healthcare providers convene to work with the patient to manage an illness, the patient is more likely to meet positive health outcomes. For example, a patient in the

intensive care unit (ICU) who was in a motor vehicle accident with fractures of the jaw and leg, a collapsed lung, and head contusions would require many different disciplines to care for them including orthopedic specialists, physical therapy, occupational therapy, neurologists, neurosurgeons, pulmonologists, nutrition specialists, and pharmacists. All the team members work together to provide a quicker recovery process for the patient.

Common Holistic Treatments

There are many holistic treatments for patients. Some holistic treatments are provided by interdisciplinary healthcare providers and require certifications. For instance, acupuncture should only be performed by a certified acupuncturist. However, there are several holistic treatments that can be completed by nurses. Examples include aromatherapy, massage, touch, and hot/cold application. Nurses should attempt to incorporate holistic interventions into their patients' care plans only after confirming with the rest of the clinical team that the treatments are safe and will not interfere with the medical plan. Some holistic interventions, such as aromatherapy, guided imagery, hydrotherapy, massage, and progressive relaxation, do not require special prescriptions or extensive training, meaning the patient can also complete the tasks independently.

Aromatherapy

The use of essential oils via inhalation or diluted application to the skin is known as **aromatherapy**. An **essential oil** is an oil extracted from the flower, bark, leaves, or fruit of plants. Many essential oils are thought to have properties that provide symptom relief. When the essential oil is inhaled, the olfactory nerve is activated, which then stimulates the activation of the **amygdala**, the emotional center of the brain. This stimulation can boost mood and may help with anxiety, depression, or insomnia. Aromatherapy can be used to treat nausea, decreased appetite, or dry mouth. For example, ginger, peppermint, and licorice have all been shown to alleviate nausea. Nurses should educate patients about the possible benefits of aromatherapy, as well as how to properly use essential oils by advising patients not to consume them and to avoid drug interactions or possible allergies.

Guided Imagery

A holistic treatment used to reduce anxiety is guided imagery. In guided imagery, the nurse directs the patient to close their eyes and picture a scene that makes them comfortable and relaxed or provides a feeling of peacefulness, such as a beach. The nurse would encourage the patient to notice everything about the scene, such as the way the sun feels on the skin, the color of the water, the sounds of the surf, the scents of the breeze, and the taste of the foods eaten. Patients can be educated to do guided imagery on their own when they are feeling stressed, anxious, or depressed. Guided imagery has been used as pain management therapy for patients suffering from chronic pain and for women in labor.

Hydrotherapy

The use of water to reduce pain, swelling, and sore muscles is called **hydrotherapy**. It can be administered with hydromassage blankets or in swimming pools, whirlpools, hot tubs, and physiotherapy tanks. Hydrotherapy allows the muscles to relax and can ease joint pain. The warmth of the water stimulates dilation of the blood vessels, promoting blood circulation and reducing fluid accumulation in interstitial cells (Figure 6.2). Caution must be taken to avoid too much time in the water as negative effects can occur such as maceration of the skin.

FIGURE 6.2 Hydrotherapy can help to reduce pain and swelling, as well as increase strength and range of motion. Hydrotherapy pools, such as the one seen here, are designed to help prevent and rehabilitate injuries. (credit: modification of work by U.S Navy Mass Communication Specialist 3rd Class Robyn Gerstenslager/Wikimedia Commons, Public Domain)

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Asking Subjective Questions about Patient Cues

Before recognizing cues, nurses must make sure they have enough data about a patient's situation to interpret the information. For example, consider an adult patient who reports weeping from the lower extremities. The nurse does not have enough information to determine the patient's needs and may ask a series of questions such as "Have you ever experienced weeping in your legs before? When did you first notice the weeping? Have you done anything at home that made it better or worse?" The patient's responses provide the nurse detailed information from which to form an educated hypothesis and start determining what actions to take for the patient. The nurse should recognize, based on the provided cues and clinical judgement measurement model, that this patient would not be a good candidate for hydrotherapy as they already have emaciated skin in the lower extremities.

Massage

Massage is widely used as a holistic treatment for pain, muscle soreness, and stress reduction. Massage can be done at the bedside by a nurse, a physical therapist, or a massage therapist who is specifically trained in massage techniques. There are several types of massage, including aromatherapy, chair, deep tissue, hot stone, lymphatic, prenatal, shiatsu, sports, and Swedish massage. Some types of massage are beneficial to a certain part of the body. Lymphatic massage, for example, is used for the lymph system to promote less lymphedema and can be used in patients who have had lymph nodes removed (Figure 6.3). The benefits of all types of massage are lowering heart rate, improving immune function and circulation, and increasing relaxation. Nurses should educate patients not to massage lower extremities if they are diagnosed with or are expected to have deep vein thrombosis (DVT), or blood clots in the lower extremities, as the massage could accidently dislodge the DVT and elicit negative outcomes, such as stroke.

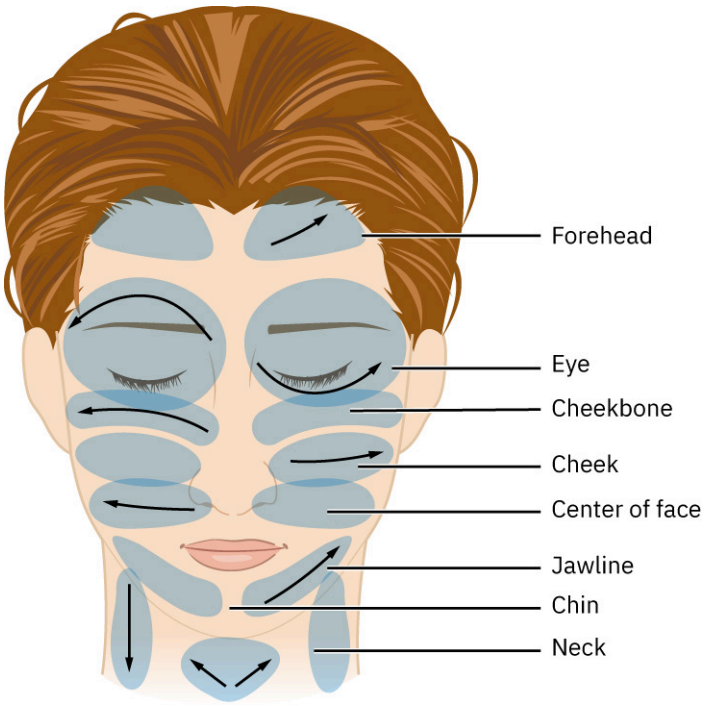

FIGURE 6.3 Facial lymphatic massage can help to reduce swelling and lymphedema. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Progressive Relaxation

Another holistic technique that nurses can administer is **progressive relaxation**. During progressive relaxation, the nurse guides the patient to get comfortable and encourages the patient to start with a muscle group such as the feet or toes. The nurse instructs the patient to contract and then relax that body part and then move up to the next set of muscles. Working in a systemic order, when finished, the patient should have contracted and released all the major muscle groups. This progressive relaxation of all the muscles can bring a sense of calmness. Progressive relaxation can help lower blood pressure, ease muscle tension, and increase a patient's perception of overall well-being.

Holistic Care across the Life Span

Holistic care across the life span includes maternal/newborn, pediatric, and geriatric populations (Table 6.1). A nurse can meet the holistic needs of the maternal and newborn population by encouraging healthy pregnancies. Healthcare providers educate women about ways to maintain a healthy pregnancy by avoiding stress and unhealthy behaviors such as smoking. Newborn holistic care includes education for the parents such as bath safety and car seat safety. Nurses can provide holistic care for the pediatric population by involving the family throughout the care process. For the geriatric population, the interdisciplinary team should be included along with the patient's family so that all the patient's needs can be met.

Developmental Stage	Physical Needs	Psychological Needs	Spiritual Needs
Maternal/ newborn	Discuss healthy diet	Provide education about postpartum depression	Refer to counseling if fetal demise occurs
Pediatric	Provide age-appropriate anticipatory guidance	Discuss with parents how to support a child's self-esteem needs	Encourage parents to connect with the child daily
Geriatric	Discuss vaccines such as pneumonia and shingles	Encourage service in community, such as volunteering	Suggest sharing stories and memories with loved ones

TABLE 6.1 Holistic Nursing Care across the Life Span

6.2 Foundations for Providing Person-Centered Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe physical considerations involved in providing person-centered care
- Identify emotional considerations involved in providing person-centered care
- Recognize spiritual considerations involved in providing person-centered care

In the 1940s, psychologist Carl Rogers developed the theory of person-centered therapy, which suggests a person can understand themselves and focus on their self-worth. Rogers believed that the person and the therapist could work together toward personal growth, achieving self-management. The humanistic approach to psychotherapy was founded on Rogers's theory and included shared decision-making between the person and the therapist. The development of person-centered therapy provided the foundation for person-centered care within health care.

Person-centered, patient-centered, and holistic care are terms that are intertwined; however, they have separate definitions and should not be interchanged. The **person-centered care** focuses on disease management with the personal, social, and religious beliefs of the person incorporated into the care. Person-centered care includes integrated healthcare services that allow goals, values, and preferences of an individual to be included in the development of a care plan with the healthcare provider. An example of an integrated healthcare service is the Veterans Health Administration (VHA), a federal agency that provides veterans with hospital and long-term health care. An integrated healthcare plan includes informed decision-making about treatment options, well-being considerations for the patient, and an understanding of their comprehensive needs (Figure 6.4).

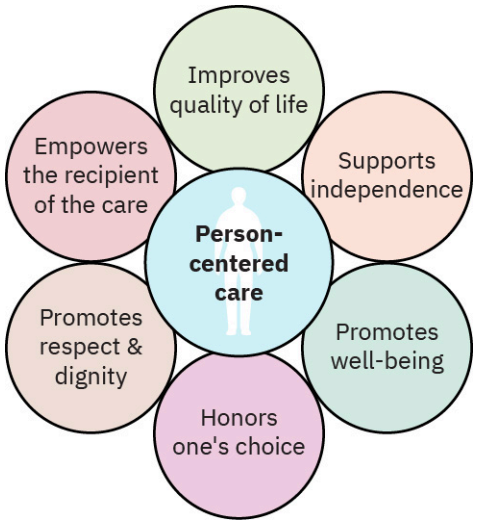

FIGURE 6.4 Person-centered care, as defined by the American Association of Colleges of Nursing, shows the person as the center surrounded by the six tenets of person-centered care. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Shared decision-making and self-management support are part of the six tenets for current practices of person-centered care. When the patient and healthcare provider work together to develop a healthcare plan that meets the goals set by the patient, this is known as **shared decision-making (SDM)**. Support for self-management gives patients with chronic conditions the ability to manage their health and take an active role in their health care. Through the implementation of person-centered care, healthcare providers deliver tools and resources assisting the person to reach their own individual health goals.

When caring for patients, nurses use a framework to help prioritize care. While most patients have multiple needs, the nurse can only address one need at a time. The most recognized framework for prioritizing patient's needs is Maslow's hierarchy of needs, which includes physiological needs as the basis of the hierarchy, meaning those needs must be met at least minimally to sustain life and before moving onto the needs above those (Figure 6.5). Examples of physiological needs include oxygen, nutrition, hydration, elimination, thermoregulation, sexuality, activity, and rest. The nurse cannot address other needs for the patient if these basic needs are not being met first. Security, social, esteem, and self-actualization complete Maslow's hierarchy. A patient cannot have needs met in the social category if the needs below it (physiological and security) are not being met. Maslow's hierarchy provides the nurse with a framework for prioritizing a patient's needs while providing person-centered care, which focuses on three considerations: physical, emotional, and spiritual.

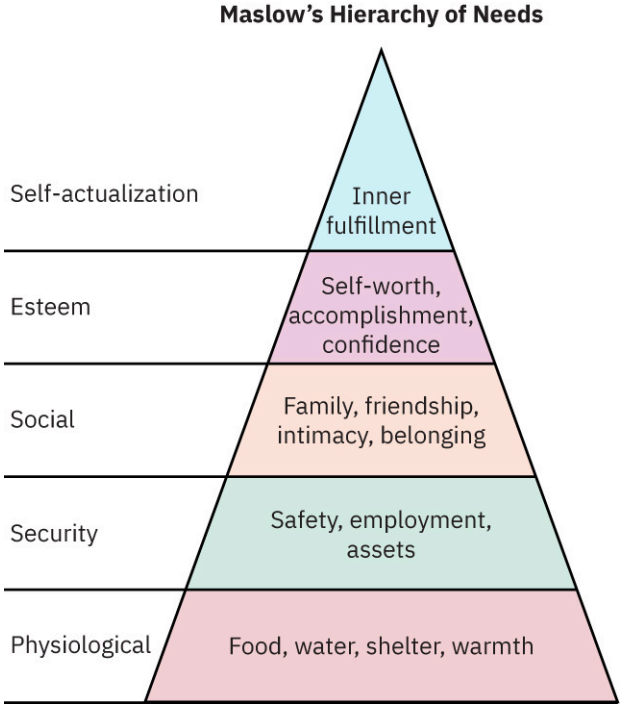

FIGURE 6.5 Maslow's hierarchy of needs is used as a framework to prioritize the needs of a patient. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Physical Considerations

The nurse should address a patient's physical considerations when providing person-centered care. For most patients, the physical considerations that are reported as important are pain management, assistance with activities of daily living, and short-term care facility environments. Patients may want assistance with dressing and personal hygiene and express a desire for a clean facility in which to heal. Meeting a patient's physical needs ensures the nurse is providing person-centered care. For instance, if a patient does not receive timely pain management after surgery, the negative impact on the patient's overall experience can be significant. For example, if physical pain is not managed well, safety, security, and emotional well-being are affected. The patient may not want to return to the healthcare facility if they received poor pain management after surgery.

Physiological Needs

A person's physical needs and **physiological** needs can be intertwined. Physiological needs refer to the functions of the body while physical needs refer to the care of the physical body. A patient is having stomach pains (physical

need) and they could also be stating that they have not had a bowel movement in a week (physiological need). The nurse can provide person-centered care by caring for both the patient's physical and physiological needs. Often, resolving one issue will inadvertently resolve the other. Table 6.2 examines examples of physical and physiological need links.

Physical Needs	Physiological Needs
Stomach pain	Bowel movement
Chest pain	Disruption in cardiac circulation
Headache	Decreased blood flow to the brain
Shortness of breath	Decreased oxygenation of blood from lungs

TABLE 6.2 **Physical and Physiological Needs**

REAL RN STORIES

Early Recognition of Physiological Needs

Nurse: Jose, RN
Clinical setting: Emergency department
Years in practice: 8
Facility location: Fort Wayne, Indiana

I had been working in an acute care emergency department in the suburbs of Indiana for more than eight years. Most nights were busy and seemed to run together. One shift I had a patient come in named Mark. Mark was a 45-year-old White male who presented with no previous medical history. Mark entered the triage room clutching his chest and had rapid respirations. He rated his chest pain at 10/10 and was actively vomiting into an emesis basin. I immediately assessed his vital signs (blood pressure of 167/104, heart rate of 112, a respiratory rate of 28, and an oxygen saturation of 92 percent on room air). I also noted his skin had a dusky pale appearance, and his nail beds were pale and bluish in color. Per our facility protocol, I administered oxygen 4 L via nasal cannula and started to obtain an electrocardiogram (EKG). A thorough assessment revealed Mark's physical need was chest pain, but his physiological need was a disruption in cardiac circulation and oxygenated blood flow to the body, and once the cardiac circulation was restored, the physical need of chest pain resolved.

Safety and Security Needs

The safety and security needs of a person can include a range of topics, such as personal security, employment, resources, health, and property. For example, being unemployed, underemployed, or not having health insurance should never affect a patient's ability to obtain care when needed. A person should have their safety and security needs addressed early in the assessment process to avoid missing opportunities for care later as their needs increase. For example, taking a thorough health and social history can allow the nurse to identify specific actions to improve a patient's security. Another example of addressing a patient's safety needs might be making sure they have resources to contact if their environment is not secure or safe.

Age and developmental considerations also fall under safety and security. A patient might not be able to care for themselves, placing their safety at risk. For instance, safety and security needs for an infant include providing a secure environment and safe sleep position. An infant feels secure when they are swaddled and held. Safety and security needs for a toddler include preventing drowning and injuries and using car seat safety. Toddlers should be allowed to explore but need to be provided with structure and reassurance. The nurse must fully assess each individual patient's situation when considering safety and security and connect the patient to appropriate interdisciplinary professionals, who each have their own set of resources to provide assistance.

LIFE-STAGE CONTEXT

Financial Status of Older Adults

More than fifteen million Americans are economically insecure and living at or below the federal poverty level. People 65 years old and older often struggle with healthcare costs, and one major adverse life event such as a stroke can change their ability to pay for health care (National Council on Aging, 2022). Nurses should ask questions regarding current financial status and refer patients and their family to additional services, such as Medicaid and facility financial assistance programs.

Emotional Considerations

Emotional considerations for patients include addressing emotions such as fear, happiness, loneliness, sadness, and self-acceptance. The nurse should address emotional needs early in the care process. For instance, if a patient is fearful of having an MRI scan, the nurse needs to address those fears before the patient is scheduled for the test. An MRI scan requires the patient to lie completely still for an extended period, and a patient who is claustrophobic will have difficulty lying still and possibly not be able to complete the exam. If the patient discusses their fears with the nurse, a solution to address these fears can be achieved. Another example might be a patient who is depressed because of the loss of a loved one. If not fully assessed, the patient can easily sink further into an unhealthy state of mind. The nurse needs to be aware of each individual patient's emotional needs to provide comprehensive person-centered care.

Love and Belonging Needs

One aspect of emotional considerations is a patient's love and belonging needs. These needs can include friendship, intimacy, family, and sense of connection. Having a relationship with friends, family, or a significant other can provide the support needed for a patient to heal and recover. For instance, consider a patient who has inguinal hernia repair with a mesh support. The post-op instructions state that they are unable to drive or lift more than five pounds for six weeks. This patient has a partner that can be responsible for the day-to-day activities of the household. The patient relies on the mutual benefit aspect of a partnership to help achieve good outcomes after surgery. If the patient did not have a partner or someone they could rely on, a different outcome may be the result because the patient would still have the need for belonging. A patient who didn't have a partner might try to lift more than five pounds, causing complications with the mesh support and a reoccurrence of the hernia. Love and belonging needs can also be met by providing feelings of self-worth. If someone feels loved, needed, and wanted, they often feel more positive about their own role in life and have more positive self-esteem.

Self-Esteem Needs

The term self-esteem can be defined as confidence in one's own worth or abilities. Self-esteem is based on the patient's own opinions and beliefs about themselves, which is sometimes hard to change once negativity is associated. Sometimes self-esteem can be developed based on what others have said, which the person can internalize as fact. For example, a person who has been told as a child that they are ugly, fat, or dumb may internalize those words, linking their self-esteem with those negative words. As this child moves through adolescence and enters the stage when other's opinions are important, their negative feelings may take over and cause unhealthy coping. However, the opposite is also true; if a child has been told they are worthy and important based on their actions and not appearance, the child is less likely to give in to negative feelings about themselves as they mature. A positive self-image is the foundation for healthy mental health, which aids in managing life's stressors. A nurse who considers a person's self-esteem needs is better prepared for helping the patient achieve optimal health outcomes.

LINK TO LEARNING

Watch this video by Psych Hub about eating disorders (https://openstax.org/r/77PsychHubVidED) to find out more about the complex relationship these disorders have with self-esteem.

Self-Actualization Needs

The realization of one's potential is called **self-actualization**. A person who is self-actualized can be described as someone who accepts and appreciates themselves and their accomplishments in life. Self-actualization can be achieved through reflecting on one's own values and beliefs. A patient who has accomplished self-actualization will be more accepting of their current state of health and may be more willing to participate in the care plan. For example, a patient diagnosed with inoperable cancer may recognize they have led a fulfilling life. The patient focuses on the life journey, not the diagnosis of inoperable cancer. The patient would be considered to have met their self-actualization needs and would be better prepared mentally to handle the notion of death because the patient feels they have met all their life goals.

Spiritual Considerations

Another aspect of providing PCC is taking into consideration the patient's spiritual needs and caring for the patient's spirituality. Spiritual care in healthcare facilities includes recognizing and providing care that takes religious customs into account. Spiritual care is mandated by both The Joint Commission and the National Consensus Project for Quality Palliative Care. Nurses are responsible for identifying and understanding a patient's spiritual needs, assisting the patient in developing the care plan, involving the appropriate healthcare/spiritual professionals, and evaluating the patient's spiritual care. The nurse should work closely with the patient and healthcare providers to make sure the patient's spiritual needs are being met. Resources available in the healthcare organization, such as a chaplain, clergy, or nondenominational advisor, are helpful in assisting the nurse to meet the spiritual needs of a patient. Nurses must not be judgmental or biased; they should be open minded to better meet the spiritual needs of the patient. The nurse providing spiritual care for patients should also understand their own spiritual views.

LINK TO LEARNING

Nurses can visit the HealthCare Chaplaincy Network (HCCN) (https://openstax.org/r/77HCCNwebsite) to find additional information about meeting a patient's spiritual needs. HCCN is a nonprofit organization that offers spiritual care-related information and resources.

Concepts Related to Spiritual Health

Spiritual health can be related to achieving self-actualization. Spiritual health care can be described as helping a patient meet their psychological needs and develop a meaningful life. Spiritual health concepts include faith, religion, hope, and love. Faith, religion, and spirituality can be intertwined ideas; however, each has its own meaning. Sometimes nurses equate spiritual health with religious affiliation. However, in today's world, spiritual health means embracing and understanding whatever the patient considers spiritual. Some people find spiritual peace in tasks such as meditation or yoga (Figure 6.6).

FIGURE 6.6 Healthcare providers can benefit from workplace yoga classes, helping to provide spiritual health at the workplace. (credit: "Yoga: A quiet escape for healthcare professionals" by Master Sgt. Cohen A. Young/U.S. Air Force, Public Domain)

Faith

An absolute trust or belief in something or someone is called faith. A patient can have faith that the nurse will treat them fairly and equitably. They can also have faith in a higher power or entity. Faith does not imply religious affiliation; some patients have a strong faith but do not follow an organized religion.

Religion

The term religion refers to the actual practice of worship within an organized culture or group of like-minded individuals. There are many forms of religion in the world. Some examples include Buddhism, Christianity, and Judaism. Nurses should refrain from making assumptions about the values and beliefs of any religious affiliation. Asking the patient questions about their religious practices will develop a therapeutic nurse–patient relationship, which is needed to provide person-centered care. For instance, if the patient, because of religious beliefs, shuns away from a certain medical practice, such as the administration of blood or blood products, or has specific dietary practices, such as eating only kosher foods, the nurse needs to know this. The nurse should respectfully honor the patient's wishes and provide resources on alternative treatments or notify nutritional services. Understanding the patient's religious beliefs ensures PCC is being given.

PATIENT CONVERSATIONS

Completing a Spiritual Assessment

Scenario: Indy, an RN for six years, has been assigned to admit Mr. Denzel Bernstein, a new patient to the hospice unit. The patient has end-stage glioblastoma and his significant other and adult children are present at admission. Hospice is focused on comfort, care, and quality of life for someone approaching the end of their life.

Nurse: Hello, my name is Indy, and I am going to be your nurse today. Do you mind verifying your name and date of birth for me?

Patient: My name is Denzel Bernstein and my birthday is July 26, 1965.

Nurse: Hello, Mr. Bernstein, I am here to admit you and would like to ask you some questions about your religious

preferences? Is that okay?

Patient: It is okay, but I am tired. Would you please ask my wife, Chava?

Nurse: Sure. Mrs. Bernstein, is it okay if I ask you these questions about your religious preferences?

Patient's wife: Yes, it is okay.

Nurse: What are your and Denzel's religious or spiritual preferences?

Patient's wife: We are lapsed Methodists; we have not attended church in a few years.

Nurse: Do you have any dietary preferences related to your religious or spiritual beliefs?

Patient's wife: No, we do not.

Nurse: How have your beliefs influenced your behavior during your illness?

Patient's wife: Denzel was diagnosed two years ago with glioblastoma, and at the time it did not change anything about our beliefs. However, as he is being admitted to hospice and facing his impending death, we have started talking about religion and spirituality again. We have always had a belief in God, and we hope Denzel goes to heaven to see his parents.

Nurse: Would you like me to call the Methodist clergy to come visit with you?

Patient's wife: Not right now, but maybe tomorrow once Denzel has rested.

Nurse: I would be happy to arrange for a chaplain to visit you and your family. I understand what a hard time this is. I am willing to help you in any way I can during your time here. If there is anything I have not addressed at this time or anything else that comes up later, please do not hesitate to reach out to me.

Hope

The term hope can be defined as how the person views their future. It can be an attitude, an inspiration, or an overall sense that a person feels. As the nurse develops a therapeutic relationship with the patient, hope can be explored. For example, if the patient was diagnosed with an infection that requires long-term antibiotics, the nurse can explore the patient's hope for recovery. Nurses can also foster hope in families with transparent communication. Incorporating the patient's wishes ensures the spiritual considerations of a person-centered approach are being met.

Love

Love is discussed as part of Maslow's hierarchy of needs and allows for a sense of belonging. Love can also be spiritual in nature. Spiritual love can help patients find meaning and purpose in their lives and create kindness and acceptance of themselves and others. When a patient describes spiritual love, it can feel like an intense connection with someone or something. This intense connection can help the patient see and understand things in the world around them differently. A patient who has a deep spiritual love with their significant other may not be bothered when separated from the significant other, knowing the love will sustain the relationship during the separation, such as during a hospitalization.

Aspects Influencing Spiritual Health

Spiritual health includes critical attributes such as transcendence, purposefulness, mindfulness, faithfulness, harmonious interconnectedness, integrative power, multidimensionality, and holistic being (Table 6.3). These terms describe a sense of completeness between one's mind, body, and spirit. When spiritual health has been disturbed, physical and emotional health can also be affected. Connection with others remains key to the influence of spiritual health.

Term	Definition	Example
Transcendence	The state of existing or extending beyond the physical being	Meditating
Purposefulness	The state of having a useful purpose	Giving to a charity
Mindfulness	The state of being present in the moment	Living in the moment
Faithfulness	The act of being faithful	Being loyal to relationships
Harmonious interconnectedness	The connection between mind, body, and spirit	Feeling that everyone and everything means something
Integrative power	The capacity to obtain what one needs and wants while maintaining human connection	Feeling love
Multidimensionality	The state of having connection with people from different parts of one's life	Having a neighbor who works with your family member and is also your friend
Holistic being	The act of being authentic to one's self in all aspects of life	Looking at everything as whole and connected

TABLE 6.3 **Spiritual Health Attributes**

Developmental Considerations

To provide person-centered care, the nurse must assess the patient's developmental and spiritual needs. The nurse should assess a patient's knowledge level, communication ability, cognition status, and ability, all of which may affect their spiritual needs. For example, a 4-year-old child will have different spiritual needs than a 74-year-old patient with dementia. The nurse should involve the patient's family in the healthcare decision-making when it is determined that the patient cannot make spiritual decisions for themselves.

Family Influences

Many patients value their families' thoughts and beliefs when considering healthcare options. Often, patients will not make any healthcare decisions until they have consulted their family. The nurse should include the family in all aspects of the patient's care. The nurse should provide the family with opportunities to weigh in on decisions and plans. Scheduling patient meetings with all interdisciplinary team members when the family can attend is one way to ensure PCC is provided.

It is important to remember not every patient will have the same value placed on family opinion. Occasionally a patient will not have a good trusting relationship with their family and not *want* to consider what they think. In this case, the nurse needs to respect that decision and not push for family opinions. It is vital the nurse respects the patient's decision regarding privacy and does not discuss private information with other family members without the patient's permission. It is a patient's right not to discuss their medical condition or prognosis with loved ones.

Other times the perception of family can mean different things to different people, and genetics may not have anything to do with a person's perception of family. Some people consider friends their family, rather than actual blood relatives. Regardless of the situation, best practice standards are for the nurse to always respect a patient's decision regarding who receives their private health information.

REAL RN STORIES

A Veteran and His Family

Nurse: Willow, RN
Clinical setting: VA clinic unit
Years in practice: 11
Facility location: San Antonio, Texas

I had been working as a nurse for eleven years in a Veterans Health Administration (VHA) clinic in Texas when I encountered a patient named Jorge. He was a 32-year-old male, airman in the U.S. military, home on leave from active duty. Jorge was being evaluated in the clinic for trouble sleeping, nightmares, flashbacks, and anxiety. He had previously tried cognitive behavioral therapy and counseling without any relief. After a complete assessment, the healthcare provider suggested prescribing Sertraline 50 mg by mouth daily. I explained to Jorge this medication was used to help minimize post-traumatic stress disorder (PTSD) symptoms and would provide him with some relief. Jorge was very concerned with the stigma that was associated with mental health and military members, and he said he really wanted to think about it before starting a medication. Jorge informed the provider and me that he wanted to talk to his "family," which was a group of veterans who had served with him for many years in the military before proceeding with the recommended care plan. I discussed the concept of family with Jorge and encouraged the benefit of a good support system. Later that afternoon, Jorge called the clinic and said he was willing to try the new medication.

Previous Beliefs

Previous beliefs affect how a patient perceives their current state of health. A nurse should ask the patient about their beliefs and past experiences. This is especially true if the patient and/or family had a previous negative experience. For instance, if a patient had a family member experience a negative outcome from a particular medical procedure, the patient's perception of that medical procedure could forever be altered. The nurse should understand and incorporate the patient's previous beliefs into the current care plan. The nurse can use therapeutic communication techniques and education about the procedure to alleviate fears and clarify any misinformation. The healthcare provider should explain the risks associated with the procedure and openly and honestly answer any questions the patient has before the patient has the procedure. The nurse is responsible for reinforcing what the healthcare provider has taught the patient and addressing the patient's anxiety. The nurse also has a responsibility to ensure that the patient understands what they are being told/taught. Nurses often are also the patient's voice—advocating for patients.

Life Events

Some patients experience life events that require additional consideration when developing a care plan as those life events may impact the patient's ability to heal. For example, a female patient who was previously sexually assaulted by a male authoritative figure and is seeking treatment for an unrelated medical issue may request a nurse of the same gender due to the trauma associated with her previous life event. The previous trauma may affect how the patient responds to treatment and can disrupt the ability to meet health goals. Loss of a loved one is another life event that impacts a person's ability to heal and recover. When a nurse cares for a patient who has lost a loved one, that patient should be provided additional resources for grief support, as the previously experienced grief may bring up emotions that affect their ability to cope and heal.

Parish Nursing

Sometimes called faith community nursing, **parish nursing** is a specialty that focuses on the care of people in a faith community, church, or parish. Parish nurses help their communities by mobilizing volunteers in the faith community to support members in need. Parish nurses could be responsible for organizing volunteers to visit the sick and older people of the faith community. Parish nurses could coordinate blood drives or blood pressure screenings for the members of the faith community. Parish nursing is recognized nationally and internationally. Nurses who wish to practice parish nursing must follow their state's Nurse Practice Act and the American Nurses Association (ANA) Faith Community Nursing: Scope and Standards of Practice.

UNFOLDING CASE STUDY

Unfolding Case Study #1: Part 7

Refer back to Chapter 2 Communication and Chapter 5 Cultural Competence for Unfolding Case Study Parts 1–6 to review the patient data. The medical-surgical nurse is providing care to a 28-year-old patient who arrived to the hospital one hour ago from a walk-in medical clinic. The patient speaks Spanish and is accompanied by her bilingual 10-year-old son. She has been admitted to the medical-surgical unit for observation.

Nursing Notes	**2310: Assessment** History and assessment is difficult to obtain because patient does not speak English. Son reports patient was seen at the clinic for a cough, was diagnosed with pneumonia, and was started on a medication to treat it. Patient remains on 2 L oxygen via nasal cannula, breathing pattern appears normal without distress.
Flow Chart	**2310: Assessment** Blood pressure: 135/75 mmHg Heart rate: 97 beats/minute Respiratory rate: 22 breaths/minute Temperature: 100.1°F (37.8°C) Oxygen saturation: 97 percent on 2 L nasal cannula Pain: 9/10 (ear)
Nursing Notes	**0100:** Patient given one dose of acetaminophen and reports ear pain is now 4/10. Interpreter has arrived and plans to stay on the unit until morning rounds so they can translate when the provider comes in. Patient resting comfortably, son sleeping on couch at the bedside.
Nursing Notes	**0700: Assessment** Patient is awake and alert and reports feeling "much better." Patient reports anxiety about finances and is worried about being able to feed her family. She states that she makes enough each month to get by, but her mother is getting older and beginning to require more care and medications.
Flow Chart	**0700: Assessment** Blood pressure: 128/72 mmHg Heart rate: 87 beats/minute Respiratory rate: 18 breaths/minute Temperature: 99.1°F (37.3°C) Oxygen saturation: 97 percent on room air
Provider's Orders	**0745: New Orders** Discharge after meeting with social worker.

1. Recognize cues: Based on the information provided in the case study and your knowledge of Maslow's hierarchy of needs, what is the patient's priority need at this time?
2. Analyze cues: What other information should the nurse gather from the patient regarding her security concerns and needs?
3. Prioritize hypotheses: Based on the information presented in the case study, what emotional considerations should the nurse address with this patient?
4. Generate solutions: What actions can the nurse take to address the patient's concerns before discharge?
5. Take action: In addition to addressing the patient's security and financial concerns, the nurse decides to

conduct a spiritual assessment. How would the nurse go about this?

6. Evaluate outcomes: How would you determine that the patient's social needs have been addressed sufficiently before discharge home?

Summary

6.1 Patient-Centered and Holistic Health Care

Nurses have the privilege of providing patient-centered care (PCC) in every setting. Patient-centered care includes working with the patient to ensure they are an equal partner in the healthcare process. Nurses should recognize that providing patient-centered care increases the patient's interaction among other team members, such as specialists and social workers. When healthcare providers work together to develop common goals, improved patient care outcomes are the result. When incorporating a more patient-centered approach, interaction among providers is resourced in a more cost-effective, efficient manner. Thoughtful practice is providing care in a way that reflects compassion and incorporates empathy for a patient's unique situation. Nurses can foster open, therapeutic nurse–patient relationships with thoughtful practice. Nurses can provide multiple holistic interventions into patient care, such as aromatherapy, guided imagery, hydrotherapy, massage, and progressive relaxation. Nurses also have the opportunity to assess and educate patients throughout the life span, accommodating for the patient's mind, body, and spiritual needs.

6.2 Foundations for Providing Person-Centered Care

Nurses are responsible for providing person-centered, patient-centered, and holistic care in every healthcare setting, from parish/faith communities to acute care settings. It is the nurse's responsibility to assess the patient's needs—physical, emotional, and spiritual—before assisting the patient in developing a care plan. The nurse should address the physical considerations involved in providing person-centered care, such as the patient's need for safety during care. The nurse should include emotional considerations involved in providing person-centered care, such as including the patient's family when planning care with the patient, and recognizing the patient's need for love and belonging. Finally, the nurse should recognize spiritual considerations involved in providing person-centered care by not only including spirituality of the patient in the care plan but also reviewing their own spirituality.

Key Terms

amygdala the emotional center of the brain
aromatherapy the use of essential oils via inhalation or diluted application to the skin
essential oil an oil extracted from the flower, bark, leaves, or fruit of plants
holistic care a care approach that considers the whole entity, encompassing the physical, psychological, emotional, and spiritual dimensions of an individual patient
hydrotherapy a holistic treatment that uses water to treat pain, swelling, and sore muscles
medical power of attorney a person deemed in charge of medical decisions when the patient is unable or unwilling
parish nursing (also, faith community nursing) a specialty that focuses on the care of people in a faith community, church, or parish
patient-centered care (PCC) the healthcare delivery model that aims to ensure the person is an equal partner in their health care; a framework for providing care to individuals
person-centered care a focus on disease management with personal, social, and religious beliefs of a person incorporated into the care
physiological relating to the functions of the body
progressive relaxation a holistic technique in which each part of the body is contracted and relaxed
self-actualization the realization of one's potential
shared decision-making the practice of empowering patients to make healthcare decisions and state their needs and limitations
thoughtful practice care that reflects compassion and incorporates empathy for a patient's unique situation
transparency in health care, allows the patient to see the information about their care, such as electronic health records and laboratory results the patient can access

Assessments

Review Questions

1. An adult patient is admitted to the emergency department with chronic kidney failure. The patient states they did not go to their dialysis appointments this week. Which aspect of health care is most important for the nurse to include in the assessment?
   a. transparency of care
   b. emotional well-being
   c. understanding of aromatherapy
   d. self-management of disease

2. Which factor about a patient's health status is essential to consider while providing holistic care?
   a. ability to drive
   b. social media presence
   c. athletic ability
   d. developmental age

3. A healthcare team is working together with a patient to establish a care plan based on the patient's goals. Which outcome is likely to be the result for this type of collaboration?
   a. increased healthcare costs
   b. decreased adherence with the care plan
   c. less satisfaction with care received
   d. improved recovery phase

4. A patient is complaining of anxiety before a surgical procedure. Which holistic treatment should the nurse recommend first to the patient?
   a. exercise
   b. hydromassage
   c. progressive relaxation
   d. spiritual counseling

5. A nurse is developing a care plan for a patient diagnosed with spiritual distress. Which question would be most appropriate for the nurse to ask to assess spiritual distress?
   a. What is your relationship status?
   b. Do you have health insurance?
   c. Do you feel like you have accomplished all you wanted to accomplish in life?
   d. Do you feel like you have had a peak experience in your life?

6. A patient who is hospitalized with end-stage breast cancer states that they want to see the Grand Canyon. What spiritual consideration would the nurse attribute to this statement?
   a. hope
   b. faith
   c. religion
   d. spiritual love

7. A nurse is taking care of a patient who says they have no family or friends to help care for them. Which level of Maslow's hierarchy of needs is the patient possibly lacking based on this information?
   a. love and belonging
   b. safety and security
   c. self-esteem
   d. self-actualization

8. A nurse is addressing a patient's physical needs. Which physical needs should the nurse anticipate?

a. a visit from the hospital clergy
b. assistance with putting on socks after knee replacement surgery
c. receiving last rites at end of life
d. verifying next of kin was notified of visitation hours

9. A nurse has accepted the role of parish nursing in their faith community. Which tasks should the nurse be prepared to oversee?
   a. scheduling volunteers for the annual blood drive
   b. attending healthcare provider visits with individual faith community members
   c. arranging for daily meal delivery for members who are housebound
   d. caring for older members

Check Your Understanding Questions

1. Describe ways nurses can provide a more holistic approach to patient-centered care.
2. Describe how a nurse could assess if a patient has reached self-actualization.

Reflection Questions

1. What information might a nurse need to include when educating a patient about the use of aromatherapy?
2. What information might a nurse need to include when educating a patient about massage therapy?
3. What information might a nurse need when assessing the spiritual needs of a patient?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #1: Part 7.
   How would you assess the patient's love and belonging needs?

What Should the Nurse Do?

1. A nurse is assigned to a patient who has end-stage bone cancer and wants to enter hospice. The patient expresses concern that all the people taking care of them are not talking to each other. The nurse notices some disjointed care from the other healthcare providers; some of the team is prescribing palliative measures while others are continuing to treat issues. What should the nurse do to resolve this issue?
2. A 78-year-old patient presents to the emergency room with a swollen knee for one week. Patient states the knee is painful and limits mobility; pain is 5 on a scale of 1–10. Vital signs: temperature, 98.8°F (37.1°C); respiratory rate, 18 breaths/minute; heart rate, 88 beats/minute; blood pressure, 98/60 mmHg. Patient's height is 4 ft 10 in (147.3 cm) and weight is 98 lbs. (44.4 kg). The patient states the knee aches with weather changes, has sustained no injury to provoke swelling. Pulses are palpable 2 + bilaterally, no injury noted to right knee, 1 + nonpitting edema noted on top of knee. The patient is accompanied by a significant other. The patient acknowledges practicing the Jewish religion. What needs (physical, emotional, spiritual) are a priority? Why?
3. A 27-year-old patient is admitted to a mental healthcare facility with depression and suicidality after telling a family member about a suicide plan. The patient states they have considered suicide for a few weeks and have developed a plan on how to complete the act. Vital signs: temperature 98.6°F (37.0°C); respiratory rate, 16 breaths/minute; heart rate, 80 beats/minute; blood pressure, 128/78 mmHg. Patient's height is 5 ft 7 in (170 cm) and weight is 190 lbs (86.2 kg). The patient has no complaints of pain or previous medical history. The patient is accompanied by a significant other. The patient acknowledges practicing no religion. What needs (physical, emotional, spiritual) are a priority? Why?
4. The nurse is assigned to care for a patient who is actively dying. Which needs should the nurse address for this patient and family?

Competency-Based Assessments

1. Develop a two-minute presentation defining the nurse's role in holistic care and its contribution to quality patient care.
2. Develop a five-minute presentation defining the nurse's role in spiritual health and its contribution to patient-centered care.

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CHAPTER 7
Vital Signs

FIGURE 7.1 Measurement of blood pressure is done by a trained medical professional using a stethoscope and sphygmomanometer, or with an automated blood pressure machine. Accurately performing, effectively analyzing, and routinely monitoring a patient's vital signs are key components of nursing care. (credit: "Blood Pressure Monitoring" by NIH Clinical Center/Flickr, CC BY 2.0)

CHAPTER OUTLINE

7.1 Indicators of Physiologic Functioning
7.2 How to Perform Vital Signs
7.3 Teaching Patients to Perform Vital Signs

INTRODUCTION Vital signs are gathered during an initial encounter with a patient to establish a baseline, and routinely thereafter, according to condition, to assess disease progression or resolution. When vital signs are abnormal, a patient's plan of care is typically altered. When vital signs are taken routinely, the healthcare team can analyze them to observe the response to treatments or disease progression. The combination of multiple vital sign measurements over a period of time also provides the typical and normal range for an individual patient. These individualized ranges are called vital sign trends. Vital signs provide a snapshot of the circulatory, respiratory, and neurological status of the patient.

At the same time, vital signs are only one piece of the patient's health. While there is a normal and abnormal range for each vital sign, there is some variability between individual peoples' baseline vital signs. For example, an athletic patient with a heart rate of 58 beats per minute and a blood pressure of 90/54 mm Hg may be numerically concerning; however, the reading may be normal for that patient, since the cardiovascular system of an athlete is more efficient than that of a person who is not as physically active. Conversely, a patient who lives a largely sedentary life who presents with this heart rate and blood pressure may not have as efficient a cardiovascular system and may feel symptomatic (presenting with dizziness, lightheadedness, weakness, and/or confusion); therefore, the lower numbers must be addressed.

This chapter discusses each vital sign and its relationship to the overall homeostatic balance of our bodies, how to measure each vital sign accurately, and how to identify ways to teach patients to assess and analyze their own vital signs.

7.1 Indicators of Physiologic Functioning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how vital signs represent the body's homeostatic functioning
- Recognize how body temperature reflects a person's health status
- Describe how the pulse reflects a person's health status
- Understand how respiratory status reflects a person's health status
- Recognize how oxygen saturation reflects a person's health status
- Analyze how blood pressure reflects a person's health status

The process of self-regulation that bodies maintain through multiple, interdependent physiological processes is called **homeostasis**. Vital signs are the measurement of these interdependent processes and are the metrics used to determine when this self-regulation is out of balance. The markers of physiological homeostasis are called **vital sign**, and they are essential in the analysis of monitoring patient progress. They include body temperature, pulse, respiratory rate, blood pressure, and saturation of peripheral oxygen. Changes such as fever, increased heart rate, or a drop in blood pressure are signs that the body is no longer in balance. Sometimes these changes are part of the body's attempt to regulate itself and get back into balance; other times they are signals that the body is unable to properly regulate itself, and further intervention is required. Understanding these signs can help prevent a life-threatening emergency.

Vital Signs

The five vital signs are temperature (T), pulse (also known as heart rate [HR]), blood pressure (BP), respiratory rate (RR), and saturation of peripheral oxygen (SpO_2). These vital signs are interrelated; for example, an increase in respiratory rate often correlates with an increase in heart rate, while a decrease in oxygen saturation may correspond with a decrease in blood pressure. Pain is often regarded as the sixth vital sign, and changes in a patient's pain can affect all five other vital signs. Thus, it is often assessed along with vital signs. Vital signs provide the necessary information needed to guide healthcare providers in making care decisions.

Vital signs have established normal and abnormal ranges, but variations occur. Besides an individual's personal baseline, vital sign parameters can also vary across the life span and change as a person gets older. What is considered normal for an infant or a toddler can be abnormal or problematic in an adult, and vice versa.

Age-Related Variations in Normal Vital Signs

One potential age-related change to vital signs that many people may already be familiar with is high blood pressure, or hypertension. As people grow older, the risk for hypertension increases, as does the risk for other heart problems such as tachycardia (fast heart rate), **bradycardia** (slow heart rate), or **arrhythmia** (abnormal heart rhythm). Environmental and lifestyle influences also play a part in the development of diseases like hypertension. Factors such as smoking, drinking, and dietary choices have direct effects on the cardiovascular system and therefore heart rate and blood pressure.

Heart rate is inversely proportional to age; rates are faster at a younger age and get progressively slower as we get older (Ostchega et al., 2011). This can be due to arrhythmias, like tachycardia; comorbidities, like hypertension or atherosclerosis; or may be naturally occurring from the aging process. A resting heart rate of 120 bpm in a newborn is acceptable; however, a resting heart rate this fast is problematic in an adolescent or adult. Knowing these age-related variations is key for the nurse to recognize what heart rate is appropriate for their patient and identify the correct course of action if not appropriate. See Table 7.1 for a general range of normal vital sign measurements across the life span.

Age (Years Old)	Temperature	Heart Rate (Beats per Minute [bpm])	Systolic Blood Pressure (mm Hg)	Respiratory Rate (Breaths per Minute)
Neonate	97.7°F to 99.5°F (36.5°C–37.5°C) (rectal)	100 to 205	67 to 84 systolic;35 to 53 diastolic	30 to 60
Infancy (1–12 months)	97.5°F to 99.5°F (36.4°C–37.5°C) (rectal or tympanic)	100 to 180	70 at birth to 90 at 1 year	30 to 53
Toddler (12–36 months)	97.5°F to 99.5°F (36.4°C –37.5°C) (rectal, axillary, or tympanic)	98 to 140	86 to 106 systolic;42 to 63 diastolic	22 to 37
Preschool age (3–5 years)	97.5°F to 99.5°F (36.4°C–37.5°C) (oral)	80 to 120	89 to 112 systolic;46 to 72 diastolic	20 to 28
School-age children (6–9 years)	97.5°F to 99.5°F (36.4°C–37.5°C) (oral)	75 to 118	97 to 115 systolic;57 to 76 diastolic	18 to 25
Preadolescent (10–12 years)	97.5°F to 99.5°F (36.4°C–37.5°C) (oral)	75 to 118	102 to 120 systolic;61 to 80 diastolic	18 to 25
Adolescence (12–17 years)	97.5°F to 99.5°F (36.4°C–37.5°C) (oral)	60 to 100	110 to 131 systolic;64 to 83 diastolic	12 to 20
Adulthood (18–64 years)	97.5°F to 99.5°F (36.4°C–37.5°C) (oral)	60 to 100	90 to 120 systolic; 60 to 80 diastolic	12 to 20
Late adulthood (65 years and older)	96.4°F to 98.5°F (35.8°C–36.9°C) (oral)	60 to 100	90 to 120 systolic; 60 to 80 diastolic	12 to 20

TABLE 7.1 Age Variations in Vital Signs (Sources: American Heart Association, 2023; Cleveland Clinic, 2023; Sapra et al., 2023; Topjian et al., 2020.)

While the range of normal temperatures generally stays the same throughout the life span, it does become harder for the body to regulate temperature as it ages. Loss (or gain) of body fat and hormonal changes can affect how comfortably warm or cool the body may feel, resulting in the need to adjust clothing layers or environmental temperature when possible.

Knowing normal age-related variations as well as a patient's medical history and aspects of their family history can help give the nurse a better understanding of their patients' vital signs and changes that may occur through the course of their care for them.

When to Assess Vital Signs

In general, healthcare facilities set their own guidelines as to when vital sign should be measured, and these guidelines depend on the acuity of the patients in the facility. Acute care facilities, such as hospitals, usually have a

regular schedule of assessing vital signs every four to eight hours, whereas critical care units within the hospital tend to measure vital signs every hour or even every fifteen to thirty minutes depending on patient acuity. Patients who are postsurgical, postprocedure, or clinically unstable will also have their vital signs checked frequently; some of these critical patients will have equipment that provides a constant monitoring of their vital signs to the nurse and medical providers. In contrast, ambulatory facilities, such as clinics and urgent care centers, or outpatient departments, such as physical and occupational therapy, will usually measure vital signs at the start of a patient visit. Assisted living facilities, such as nursing homes, with patients who live there for extended periods of time, may measure vital signs once every twenty-four hours or as necessary.

In addition to assessing vital signs as per facility guidelines, the nurse is empowered to take vital signs when necessary. For instance, if a patient says they are short of breath and they appear pale and sweaty, or complain of a racing heart or a pounding headache, the nurse can recheck the patient's vital signs on the spot. The information gained from the reported change in patient status and correlated in vital sign measurements is invaluable in deciding the next steps of action and treatment decisions.

In acute care facilities and long-term care centers, such as hospitals and nursing homes, the measurement of vital signs is often delegated to unlicensed assistive personnel, such as nurse's aides or patient care technicians. Regardless of who takes the vital signs, the registered nurse is ultimately responsible for taking action should there be any issues.

Temperature

Targeted temperature management follows an average overall scale with normal fluctuations, which can range between 97.7ºF and 99.5ºF (36.5°C and 37.5°C) (Sapra et al., 2023). The targeted range for body temperature is referred to as **normothermia**. Fluctuations occur within normothermia due to circadian rhythm, metabolism, and hormones. For instance, circadian rhythm refers to the body's natural ability to lose heat in the extremities due to naturally occurring vasodilatation of the cutaneous vasculature during sleep-wake cycles. Changes in body temperature naturally drop between the hours of 3 and 5 a.m. and again between 1 and 4 p.m. Times of high metabolic activity increase temperature because of the increase in chemical reactions producing heat within the body. Exercise, infection, and hyperthyroidism are all examples of increased metabolic needs. Fluctuations of the thyroid hormone affect metabolic activity as well, meaning that an increase in thyroid hormone will increase the temperature.

The body's ability to maintain its temperature within normal ranges is termed **thermoregulation**. The hypothalamus is responsible for thermoregulation and is an endogenous, or internal, mechanism of heat regulation. For example, if the body's temperature is increasing, the hypothalamus will detect this change and increase blood flow to the body's surface, which in turn activates the sweat glands, inducing perspiration. If the body's temperature is decreasing, the hypothalamus will induce shivering to create more heat (Figure 7.2).

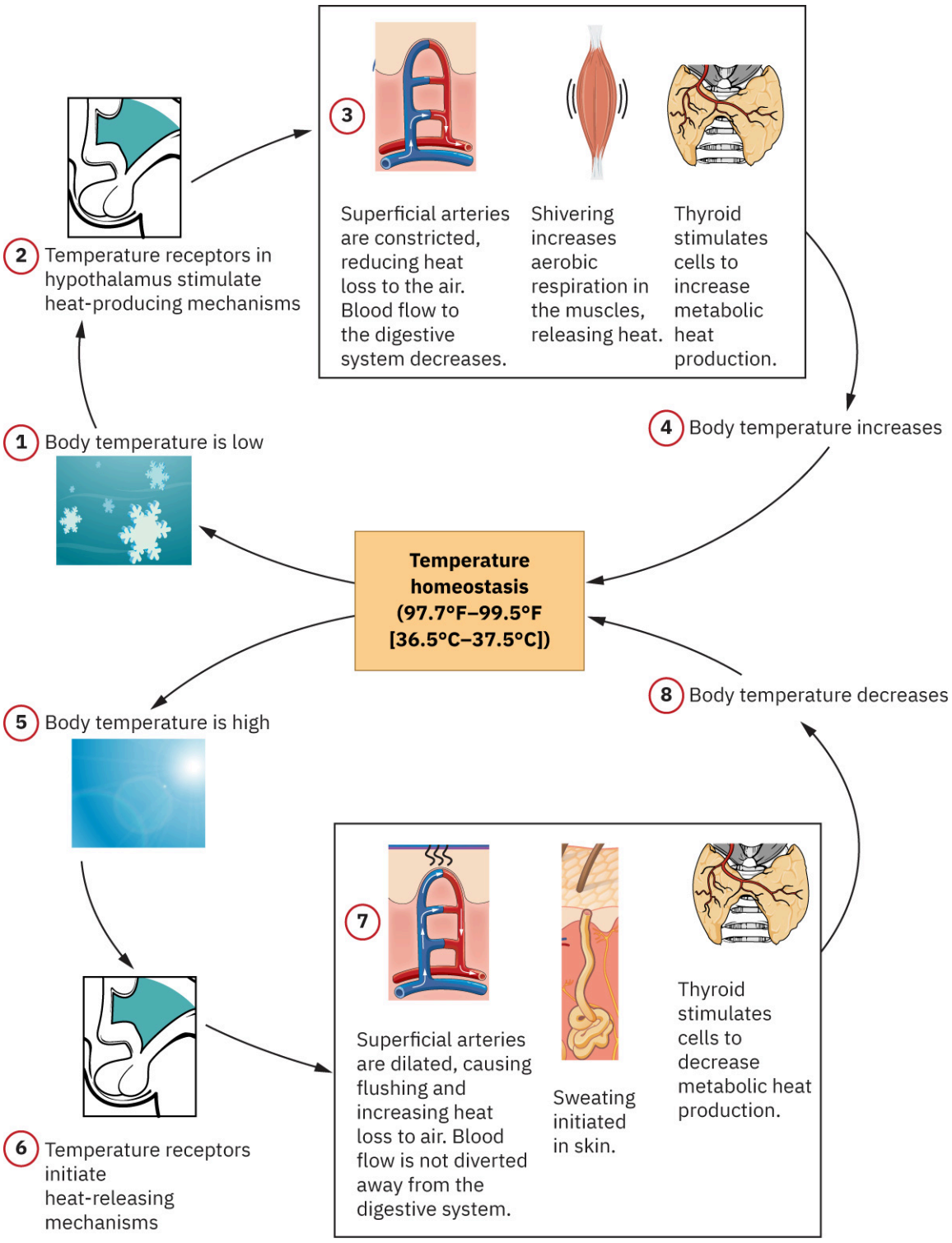


FIGURE 7.2 The hypothalamus is the structure in the brain that is responsible for regulating temperature, also known as thermoregulation. (credit: modification of work from *Anatomy and Physiology* 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

When temperatures are markedly outside of normal ranges, they are considered either hyperthermia or hypothermia. When the core body temperature is more than 105.8°F (41°C), **hyperthermia** occurs. When the core body temperature is less than 95°F (35°C), it is known as **hypothermia**. These conditions are the result of exogenous factors (variables outside the body's control), such as exposure to cold water or extreme temperatures, not the result of the hypothalamus.

Mechanisms of Heat Transfer

Heat is transferred from areas of higher temperatures to lower temperatures. The body utilizes four types of heat transfer to cool the body when necessary. These mechanisms are evaporation radiation, convection, and conduction (Osilla, 2023). The transfer of heat through dissipation of sweat from the skin, thus cooling the body, is called **evaporation**. The loss of heat through indirect contact with cooler nearby surfaces or objects, such as when walking outside during the winter without a coat, is called **radiation**. When cooler air surrounds the body, such as when entering a room with air-conditioning, and the body cools, **convection** occurs. When skin encounters a cooler object (such as an ice pack), thus lowering its temperature, **conduction** occurs. On the other hand, shivering and teeth chattering when the body's temperature is lower than normal is an attempt by the hypothalamus to generate heat.

Factors Affecting Temperature

Sometimes internal or external factors will overrule the body's homeostatic mechanisms, and the body cannot regulate its temperature enough on its own. This can cause abnormal body temperature. A body temperature greater than 100.4°F (38°C) is called **pyrexia**, or fever (Cleveland Clinic, 2023). A patient with a fever is considered **febrile**. When the patient's body temperature returns to normal after a fever, the patient is considered **afebrile,** or without fever.

Factors that affect temperature include the following:

- Age. Studies have shown that older adults tend to have lower baseline body temperatures. This can be due to natural age-related changes in the body, such as loss of insulating muscle mass and/or body fat.
- Environment. Changes in the environment can affect a patient's temperature, especially if they are older and cannot thermoregulate as well anymore due to reduced muscle mass and body fat.
- Hormones. Recent research has shown that the hormonal changes that accompany menopause can cause a reduction of core body temperature (Neff et al., 2016). The decreased levels of estrogen in the body cause the hypothalamus to become more sensitive to minor changes in body temperature. When the hypothalamus "thinks" the body is too warm, it sends messages to thermoregulate, which is why menopausal women often shiver after a hot flash.
- Disease states. The body's immune system response is frequently responsible for increases in core body temperature. Research has shown that the systemic inflammation often accompanying a fever is an evolutionary response to infection (Evans et al., 2015). A fever is a sign the body is out of its homeostatic balance and that the normal methods of thermoregulation are unable to return the body to its afebrile state. The resulting inflammation is the body's attempt to fight what is likely an invading pathogen, and this process raises the body's core temperature. From an evolutionary perspective, a fever also indicates a person should let their body heal and regain homeostasis. When we run a fever, often our instinct is to rest or sleep.

Of course, these factors are not definitive. Body temperature provides information at a specific moment, and the nurse should consider all factors when assessing a patient. The nurse should always look at the whole patient, think critically, and avoid jumping to conclusions based on temperature alone.

Pulse

A **pulse** is the palpable way to assess each time the heart beats, while **heart rate** is the number of times the heart beats in one minute; these two terms are often used interchangeably. Measuring a patient's pulse is an accurate and rapid method of assessing their heart rate; in an emergent situation, the ability to assess a patient's pulse quickly and accurately helps providers make necessary care decisions.

Physiology of the Pulse

During a normal heartbeat, blood flows from the right atrium into the right ventricle, then is pushed out to the lungs' vasculature where it is oxygenated by the pulmonary system. The newly oxygenated blood returns to the heart via the left atrium. It progresses into the left ventricle and from there is pushed out to the rest of the body. When the heart is relaxed, it allows blood to fill into it, and when it contracts, it pushes blood into the next chamber from the atrium to the ventricles, and from the ventricles out into the arteries. The right ventricle pushes blood into the pulmonary artery and toward the lungs to be oxygenated, and the left ventricle pushes blood into the aorta that then distributes it throughout the rest of the body.

Pulse refers to the pressure wave that expands and recoils arteries when the left ventricle of the heart contracts. It

is palpated at many points throughout the body. The most common locations to assess pulses as part of vital sign measurement include radial, brachial, carotid, and apical areas (Figure 7.14).

Factors Affecting Pulse

There are factors that can affect a patient's pulse. These factors can affect the pulse rhythm, pulse rate, pulse force, and pulse equality. It is important to include these characteristics in the assessment documentation.

A normal pulse has a regular rhythm, meaning the frequency of the pulsation felt by your fingers is an even tempo with equal intervals between pulsations. For example, if you compare the palpation of pulses to listening to music, it follows a constant beat at the same tempo that does not speed up or slow down. Some cardiovascular conditions, such as atrial fibrillation, cause an irregular heart rhythm.

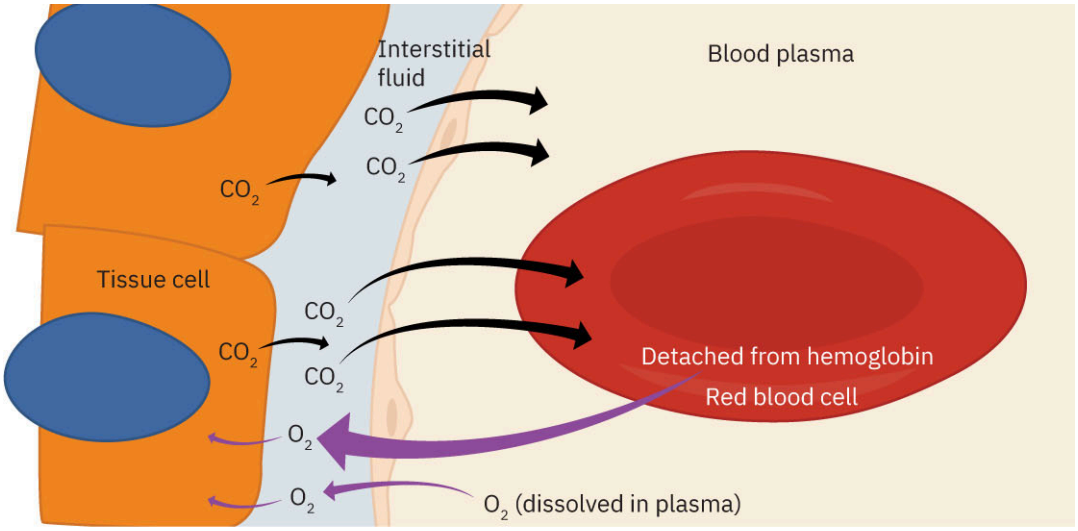
The **pulse force** is the strength of the pulsation felt on palpation. Pulse force can range from absent to bounding. The volume of blood, the heart's functioning, and the arteries' elastic properties affect a person's pulse force. Pulse force is documented using a four-point scale:

- 3+: full, bounding
- 2+: normal/strong
- 1+: weak, diminished, thready
- 0: absent/nonpalpable

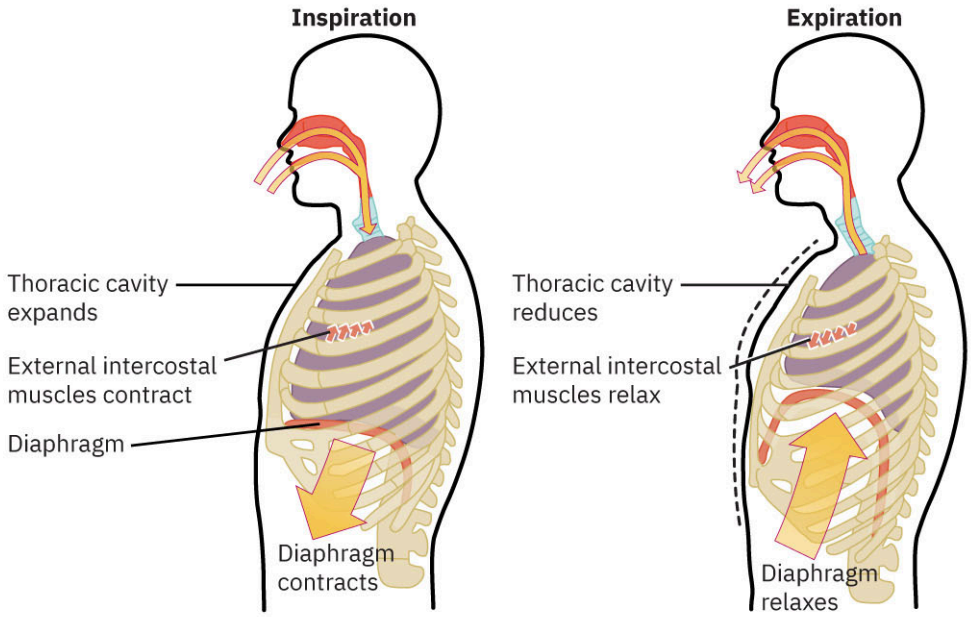
A comparison of the pulse forces on both sides of the body is referred to as **pulse equality**. For example, a nurse often palpates the radial pulse on a patient's right and left wrists at the same time and compares if the pulse forces are equal. However, the carotid pulses should never be palpated at the same time because this can decrease blood flow to the brain. Pulse equality provides data about medical conditions such as peripheral vascular disease and arterial obstruction.

Respiratory Status

The action of breathing is termed **respiration**. There are two types of respiration: external and internal (Figure 7.3). The act of breathing in oxygen (O_2) and breathing out carbon dioxide (CO_2) is called **external respiration**. The exchange of oxygen for carbon dioxide that occurs within the cells is called **internal respiration**.



(a) Internal respiration



(b) External respiration

FIGURE 7.3 Understanding the relationship between internal and external respiration is a key part of understanding how gas exchange occurs in the lungs: (a) internal respiration occurring in the cells and (b) the body during external respiration. (credit: modification of work from *Anatomy and Physiology* 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Physiologically, when the body completes the processes of external respiration, the thoracic muscles in the chest and abdomen go to work. During **inspiration** (inhaling/breathing in), the diaphragm moves down as the lungs expand and fill with air, bringing oxygen into the body. This expansion increases the volume of space and air in the chest and enables air to flow inward. During **expiration** (exhaling/breathing out), the lungs naturally recoil as the air is expelled from the lungs, and the diaphragm moves back to its original position. A complete respiratory cycle of one sequence of inspiration and expiration is considered one breath while measuring a patient's respiratory rate.

Other things to consider when assessing respirations are the quality, rhythm, and rate of respirations. The quality of a person's breathing is normally relaxed and silent. However, loud breathing, nasal flaring, or the use of accessory muscles in the neck, chest, or intercostal spaces indicate respiratory distress. Respirations normally have a regular rhythm in children and adults who are awake. A regular rhythm means that the frequency of the respiration follows an even tempo with equal intervals between each respiration. It is also important to consider factors such as sleep cycle, presence of pain, and crying when assessing a patient's respiratory rate.

Factors Affecting Respiratory Status

Many factors can affect the quality, rhythm, and rate of respirations. The quality of a patient's respirations can be affected by acid-base imbalances, low oxygen levels, carbon dioxide levels, or damage to any component of the respiratory system. The following are common factors that can affect respiratory status:

- Age. Lungs become less elastic with age, decreasing respiratory strength and room in the lungs for gas exchange. This can increase the work of breathing and prevent a person from having a strong, productive cough for airway clearance.
- Activity level. Physical activity and exercise make the lungs more adept at expanding and recoiling. A person who exercises frequently or regularly meditates and does deep breathing develops lungs that constantly stretch and contract. Their lungs are conditioned to this frequent expansion and contraction and become more efficient. Conversely, a person who is mostly sedentary does not have lungs that are conditioned to take the deep breaths required with strenuous physical activity, which is why a sedentary person is out of breath after strenuous physical activity.
- Disease states. Diseases that specifically affect the lungs include chronic obstructive pulmonary disease (COPD), asthma, pneumonia, and COVID-19, among others. The course and severity of these diseases varies greatly from person to person. Because of this, it is always important to consider how a patient's current or past medical histories can affect respiratory function.
- Environment. Factors in a person's surroundings can affect their respiratory status. For example, visiting places at high altitudes, such as Colorado or Peru, can affect respiratory function due to the thinner atmosphere and less available oxygen. This can negatively affect a person's oxygenation status and respirations, as the body attempts to maintain homeostasis. Pollution is another environmental factor that can negatively affect a person's oxygenation and respirations. Some jobs with poor air quality (mining, factories, military, construction) can also have deleterious harmful effects on the lungs, which can affect a person's respiratory status.
- Lifestyle. Damaging lifestyles and behaviors such as smoking or vaping introduce harmful toxins and pollutants into the lungs that have been proven to negatively affect a person's respiratory health. Multiple research studies have ascertained that smoking and vaping cause significant health risks due to the chemicals brought into the body, such as acetaldehyde, formaldehyde, and acrolein (American Lung Association, 2023).
- Emotions. Pain, anxiety, excitement, fear, and other emotions can affect a person's respiratory status. A heightened emotional state can cause a person to hyperventilate or breathe rapidly or deeply. Hyperventilation causes low levels of CO_2 in the blood and can make a person feel lightheaded, dizzy, short of breath, or even faint. This is not uncommon and often resolves once the person begins to breathe normally.

REAL RN STORIES

Effects of Anxiety on Respiration

Nurse: Sarah, RN
Years in practice: 7
Clinical setting: Veterans Administration medical center
Facility location: A large metropolitan city in Texas

I had a patient once who was very anxious about leaving the hospital. He had a history of generalized anxiety disorder and occasional panic attacks. He had been admitted for a minor procedure that had gone very well, but when we started preparing him for discharge, he started getting anxious and agitated. He kept telling us something was wrong and that he should stay longer. I did my best to reassure him. I retook his vital signs and even did another entire physical assessment. The patient's vital signs were beginning to change in accordance with his anxiety—his heart rate was slightly elevated at 110 bpm, but his blood pressure and respirations were within his normal range of 110/70 mm Hg and 18 breaths a minute. As I was talking with him, however, I observed him beginning to breathe faster and faster. He was getting really agitated; his heart rate increased up to 120 bpm, and then 125 bpm, and I could see his respirations were at 25 breaths per minute. I knew that if my patient continued to hyperventilate, he could pass out. Using what I had available, I quickly grabbed a paper bag that was in the room. I instructed the patient to breathe in and out of the bag. By doing so, the patient would bring some CO_2 back into his body and

restore the balance the hyperventilation was threatening to destabilize. While the patient was breathing slowly into the bag, I spoke with him calmly, trying to soothe and de-escalate his anxiety. When he seemed a bit calmer, I called the doctor to come talk to the patient about his concerns.

Oxygen Saturation

The measure of arterial oxyhemoglobin saturation (SpO_2) of arterial blood is called **oxygen saturation**. The reported result is a ratio, expressed as a percentage, between the actual oxygen content of the hemoglobin and the potential maximum oxygen-carrying capacity of the hemoglobin. A range of 95 to 100 percent is considered normal SpO_2; values less than 95 percent are considered abnormal, indicating that oxygenation to the tissues is inadequate and should be investigated for potential hypoxia or technical error (Hafen & Sharma, 2022).

Oxygen saturation is determined using a **pulse oximeter** and is a noninvasive test that measures SpO_2. The pulse oximeter has LED lights and a photodetector that measures the amount of oxygenated hemoglobin that passes through a vascular bed, such as the fingertip, earlobe, or forehead (Hafen & Sharma, 2022). Desaturation, or decreased levels of SpO_2, indicates gas exchange abnormalities. Oxygen desaturation is considered a late sign of respiratory compromise in patients with reduced rate and depth of breathing.

Factors Affecting Oxygen Saturation

Oxygenation is affected by many factors that are interconnected with other vital signs; thus, anything that affects one of the other vital signs can also affect oxygen saturation. Lung diseases such as COPD and asthma will affect oxygen saturation; pain and anxiety can affect it as well. If heart rate or respirations are abnormal, oxygen saturation may be affected as well.

Cold limbs, poor circulation from peripheral vascular disease, and certain blood disorders, such as sickle cell disease, can give a falsely low reading. A patient can also have a falsely low oxygen saturation reading if the oxygen probe is incorrectly placed or there is fingernail polish on the finger being used.

LIFE-STAGE CONTEXT

Obtaining Oxygen Saturations in Older Adults

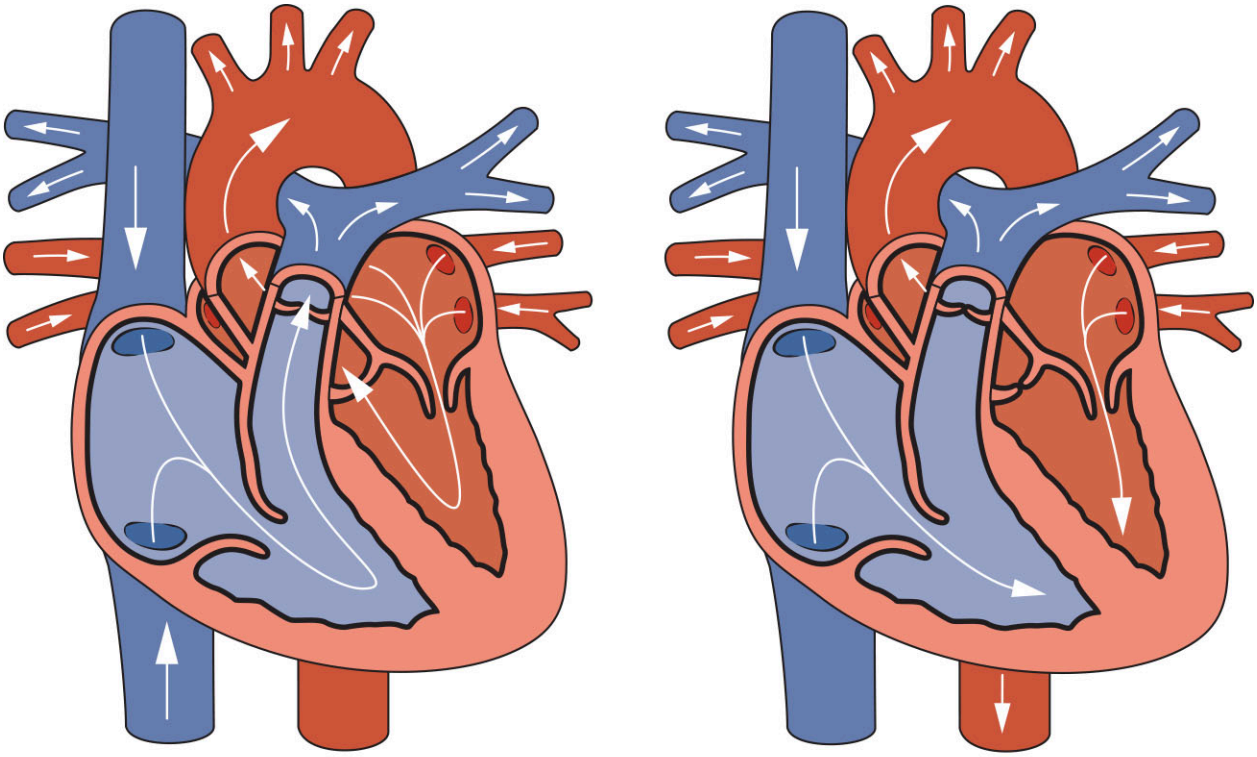
Extremities in older adults can be much cooler than those of a younger patient; if this is the case, recheck the SpO_2 in a warmer place (perhaps the other hand or the forehead), or give the patient a hot pack to hold to vasodilate the blood vessels and recheck. Research shows that older adults cannot adjust to temperature changes as quickly as younger people; reasons for this vary from medications to comorbidities and other chronic illnesses to age-related changes, such as loss of body fat (Centers for Disease Control and Prevention, 2021).

Blood Pressure

The pressure of blood pushing against the walls of the arteries is termed **blood pressure**, and it is one of the most important vital signs because of its direct correlation to heart rate and oxygenation. A person needs a certain level of blood pressure to maintain perfusion, or adequate blood flow, to their organs to stay alive. A person's blood pressure must be enough to maintain perfusion to oxygenate and nourish the brain, the kidneys, the liver, the intestines, along with all other areas. A lack of perfusion results in a lack of oxygen, which ultimately results in organ failure and death.

Physiology of Blood Pressure

When systemic arterial blood pressure is measured, it is recorded as a ratio of two numbers expressed as systolic pressure over diastolic blood pressure (e.g., 120/80, which is a normal adult blood pressure). The **systolic blood pressure** is the higher value (typically around 120 mmHg) and reflects the arterial pressure resulting from the ejection of blood during ventricular contraction, or systole. The **diastolic blood pressure** is the lower value (usually about 80 mmHg) and represents the arterial pressure of blood during ventricular relaxation, or diastole (Figure 7.4). Because of the physiology of the heart, the systolic pressure will never be lower than the diastolic pressure.



(a) Systolic blood pressure **(b) Diastolic blood pressure**

FIGURE 7.4 The combination of cardiac muscle contraction and relaxation results in (a) systolic and (b) diastolic blood pressure, which is the metric healthcare providers use called blood pressure. (credit: modification of work from *Anatomy and Physiology* 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The difference between the systolic pressure and the diastolic pressure is the **pulse pressure**. For example, an individual with a systolic pressure of 120 mm Hg and a diastolic pressure of 80 mm Hg would have a pulse pressure of 40 mm Hg. Generally, a pulse pressure should be at least 25 percent of the systolic pressure.

The **mean arterial pressure (MAP)** represents the "average" pressure of blood in the arteries, that is, the average force driving blood into vessels that serve the tissues. A mean is a statistical concept (also known as an average) and is calculated by taking the sum of the values divided by the number of values. Although MAP can be complicated to measure directly and calculate accurately, it can be approximated by adding the diastolic pressure to one-third of the pulse pressure, or systolic pressure minus the diastolic pressure. See this calculation:

$$\text{MAP} = \text{diastolic BP} + \frac{(\text{systolic-diastolic BP})}{3}$$

Normally, MAP falls within the range of 70 to 110 mm Hg. If the value falls below 60 mm Hg for an extended time, blood pressure will not be high enough to ensure circulation to and through the tissues, which results in ischemia, or insufficient blood flow.

Factors Affecting Blood Pressure

There are many factors that affect a person's blood pressure, and the mechanics of these factors as they relate to blood pressure and the heart are discussed in Chapter 19 Oxygenation and Perfusion. This discussion focuses on the various internal and external factors that can affect blood pressure readings:

- Emotional states. Heightened emotions such as anger, sadness, fear, and anxiety can increase a person's heart rate, which will accordingly increase their blood pressure. In situations such as this, relieving the emotional distress can often alleviate the high blood pressure.
- Disease states. Obesity, high cholesterol, coronary artery disease, and diabetes all affect the cardiovascular system and therefore will also affect blood pressure readings. Sometimes, chronic kidney disease or lupus can alter blood pressure and perfusion.
- Social and dietary habits. Smoking, excessive alcohol, caffeine, and sodium consumption can all increase the

risk of hypertension.
- Medications. Patients who have heart arrhythmias, such as persistent tachycardia, at baseline can be put on a medication called a beta blocker, which slows their heart rate; this will also affect their blood pressure.

A low pulse pressure may occur, for example, in patients with a low stroke volume, which may be seen in congestive heart failure, stenosis of the aortic valve, or significant blood loss following trauma. In contrast, a high or wide pulse pressure is common in healthy people following strenuous exercise, when their resting pulse pressure of 30 to 40 mm Hg may increase temporarily to 100 mm Hg as stroke volume increases. A persistently high pulse pressure at or above 100 mm Hg may indicate excessive resistance in the arteries and can be caused by a variety of disorders. Chronic high resting pulse pressures can degrade the heart, brain, and kidneys and warrant medical treatment.

A condition called hypoxia, inadequate oxygenation of tissues, commonly accompanies ischemia. The term *hypoxemia* refers to low levels of oxygen in systemic arterial blood. Neurons are especially sensitive to hypoxia and may die or be damaged if blood flow and oxygen supplies are not quickly restored.

7.2 How to Perform Vital Signs

LEARNING OBJECTIVES

By the end of this section, you will be able to:
- Identify how to assess a patient's temperature
- Understand how to assess a patient's pulse rate
- Recall how to assess a patient's respiratory status
- Demonstrate how to assess a patient's oxygenation saturation
- Analyze how to assess a patient's blood pressure

The consistent and accurate measurement of vital signs is a fundamental skill that healthcare providers in all facilities and settings should be able to deliver. Nurses must have the technical skill to take vital signs correctly, the ability to recognize changes in those vital signs from the patient's baseline, and the ability to obtain additional data, if necessary, in order to better analyze the reasons for the change in vital signs. This section discusses the proper technique to measure each of the five vital signs: temperature, pulse, respirations, blood pressure, and oxygen saturation.

Assessing Temperature

Accurate temperature measurements provide information about a patient's health status and guide clinical decisions. Methods of measuring body temperature vary based on the patient's developmental age, cognitive functioning, level of consciousness, and health status, as well as agency policy. Two main scales are used to measure temperature: Fahrenheit and Celsius. Often these two scales are used interchangeably in the healthcare setting; most thermometers available for temperature measurement are digital and can be manually programmed to show one scale or the other (Figure 7.5).

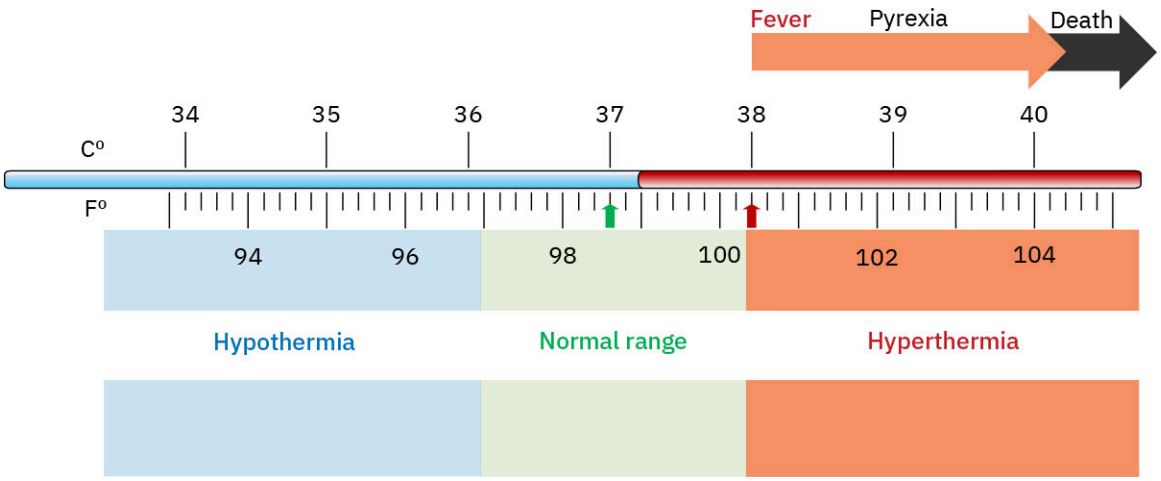


FIGURE 7.5 It is important for nurses and other healthcare providers to recognize hypothermia, normal temperature, and hyperthermia on both Fahrenheit and Celsius temperature scales. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sites and Methods

Common methods of temperature measurement in the hospital setting include oral, tympanic membrane, axillary, and rectal routes. It is important to document the route used to obtain a patient's temperature because of normal variations in temperature in different locations of the body.

Selecting the correct method to take a temperature is also important (Table 7.2). For children 5 years of age and under, the most accurate choice for taking a temperature is rectally; however, as most children do not like to have their temperature taken this way, it can also be done via tympanic or axillary routes. Tympanic temperatures are the most accurate after rectal/core temperatures. Since oral temperatures require cooperation from the patient, they are usually indicated for patients over 5 years of age.

Age	Recommended Method
Newborn to 3 months	Rectal
3 months to 3 years	Rectal, axillary, tympanic
4 to 5 years	Rectal, oral, axillary, tympanic
5 years and older	Oral, axillary, tympanic

TABLE 7.2 Recommended Methods for Temperature Measurement
(Source: Sapra et al., 2023.)

Oral Temperature

To take an oral temperature, obtain an oral thermometer. These come in many designs and sizes, depending on your practice location (Figure 7.6). Oral temperature is reliable when it is obtained close to the sublingual artery.

(a) **(b)**

FIGURE 7.6 (a) Oral thermometers come in many shapes and sizes, depending on your practice location. (b) Devices can have blue coloring, indicating it is an oral or axillary thermometer, as opposed to a rectal thermometer that has red coloring. (credit (a): Digital Medical Thermometer, Adoric Rectal and Oral Thermometer for Adults and Babies, Thermometer for Fever - Accurate and Fast Readings with Fever Indicator" by Jefferson William/Flickr, CC BY 2.0) (credit (b): "Oral Thermometer" by Chippewa Valley Technical College, CC BY 4.0)

Follow these steps to take an oral temperature:

1. Wash your hands before any patient interaction, and ensure use of proper personal protective equipment (PPE) as required. Gloves are the standard when working with patients; however, if the patient requires additional PPE, such as masks or gowns, don the additional appropriate PPE as required. Ensure there is a probe cover for the oral thermometer if the thermometer is reusable.
2. Ask the patient to open their mouth and place the thermometer in the posterior sublingual pocket under the tongue, slightly off-center (Figure 7.7).

3. Ask the patient to keep the thermometer under their tongue with their mouth closed and refrain from moving it around. Leave the thermometer in place for as long as is indicated by the device manufacturer. The thermometer typically beeps within a few seconds when the temperature has been taken.

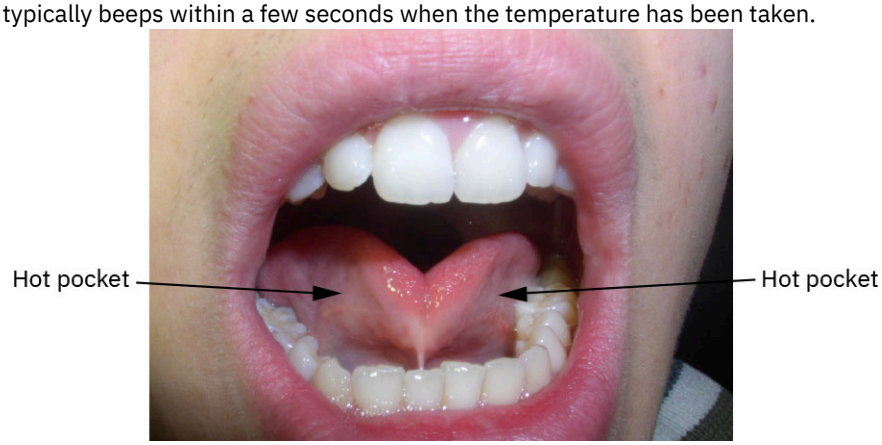


FIGURE 7.7 Improperly placing a thermometer in a patient's mouth can result in inaccurate temperature measurements. By placing an oral thermometer in one of the "hot pockets" under the tongue, you can obtain a more accurate reading. (credit: "Frenulum linguae" by Wikimedia Commons, CC BY 3.0)

4. Remove the thermometer, and read the digital display of the results. Discard the probe cover in the garbage (without touching the cover), clean the device according to facility policy, and place the probe back into the device, if appropriate.

PATIENT CONVERSATIONS

Assessing Temperature

Scenario: Corrine is a nurse on a medical-surgical floor, and she is preparing to discharge her 45-year-old adult patient, Anna. While she is preparing the paperwork, Anna puts on her call light. Corrine goes to the room.

Patient: I'm suddenly freezing cold, and I'm shivering! What is the temperature in here?

Nurse: [checks thermostat] It's 73°F (22.8°C) in here, but it has been that way as long as you have been here. How are you feeling?

Patient: I don't know. Besides cold, I guess I just don't feel good. Just kind of icky.

Nurse: Let me take your temperature. [Gets the oral thermometer, sees that the temperature is 104°F (40°C). Corrine looks at her patient and sees she looks a bit more flushed than usual, but she also knows the patient would have many other symptoms if this was a true temperature, so she determines further assessment is needed.] Have you had anything to eat or drink since I was last in here?

Patient: Not really. Well, when I started feeling cold, I drank some of my hot tea to try and warm up. I'm still really cold though.

Nurse: Ah okay. Your oral temperature was quite high, but that's probably because of the tea. Let me take your temperature from a different site. [She gets the tympanic thermometer and checks Anna's temperature in her ear.] Ah. Your temperature is 101.3°F (38.5°C), so it looks like you may have a bit of a fever. Let me grab you a warm blanket, and then I will call your provider.

Scenario follow-up: Corrine knows that while tympanic temperatures are not as accurate as oral or core temperatures, the fact Anna has a fever correlates with her feeling chilled; thus, even though the oral temperature was inaccurate, she knows an intervention is still required. She provides the blanket for patient comfort while contacting the doctor.

Some factors can cause an inaccurate measurement using the oral route. For example, if the patient recently consumed a hot or cold food or beverage, chewed gum, or smoked prior to measurement, a falsely elevated or decreased reading may be obtained. Oral temperature should be taken fifteen to twenty-five minutes following

consumption of a hot or cold beverage or food, or five minutes after chewing gum or smoking.

Tympanic Temperature

The tympanic temperature is typically 32.5°F to 33.1°F (0.3°C–0.6°C) higher than an oral temperature. It is an accurate measurement because the tympanic membrane shares the same vascular artery that perfuses the hypothalamus (the part of the brain that regulates the body's temperature). The tympanic method should not be used if the patient has a suspected ear infection.

Obtain the appropriate thermometer to take tympanic (ear) temperature. These thermometers also come in many shapes and sizes, depending on your practice location (Figure 7.8).

FIGURE 7.8 Tympanic thermometers can be used for adult patients and pediatric patients 2 years of age and older. (credit: "Tympanic thermometer" by BCcampus, CC BY 4.0)

Follow these steps to obtain a tympanic temperature:

1. Wash your hands before any patient interaction. Don appropriate PPE.
2. Remove the tympanic thermometer from its holder, and place a probe cover on the thermometer tip without touching the probe cover with your hands. Turn the device on.
3. Ask the patient to keep their head still. For an adult or older child, gently pull the helix (outer ear) up and back to visualize the ear canal. For an infant or child under age 3 years, gently pull the helix down. Insert the probe just inside the ear canal, but never force the thermometer into the ear. The device will beep within a few seconds after the temperature is measured (Figure 7.9).

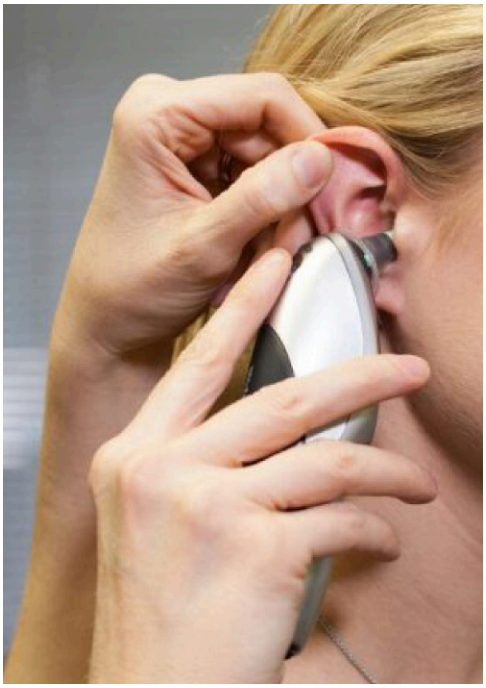


FIGURE 7.9 Taking a tympanic temperature accurately entails gently using the pinna of the ear to open the ear canal, thus getting a better read on the tympanic membrane. (credit: modification of "Taking tympanic temperature" by BCcampus, CC BY 4.0)

4. Remove the thermometer, and read the results displayed. Discard the probe cover in the garbage (without touching the cover), clean the device according to facility policy, and then place the device back into the holder.

Axillary Temperature

The axillary method is a minimally invasive way to measure temperature and is commonly used in children. It uses the same electronic device as an oral thermometer (with blue coloring). However, the axillary temperature can be as much as 33.8°F (1°C) lower than the oral temperature.

Obtain the appropriate thermometer, and if necessary, ensure it is calibrated to take axillary temperature.

Follow these steps to take an axillary temperature:

1. Wash your hands before any patient interaction, and don gloves. Ensure use of any additional appropriate PPE as required.
2. Remove the probe from the device and place a probe cover on the thermometer without touching the cover with your hands.
3. Ask the patient to raise their arm and place the thermometer probe in their armpit on bare skin as high up into the axilla as possible. The probe should be facing behind the patient. Ask the patient to lower their arm and leave the device in place until it beeps, usually about 10 to 20 seconds (Figure 7.10). If the patient is a child or is confused, gently assist them to keep the thermometer in place.

FIGURE 7.10 The nurse is taking an axillary temperature with the patient, while assisting with keeping the thermometer probe in place. (credit: "Axillary temperature being taken" by BCcampus, CC BY 4.0)

4. Hold the thermometer in place until it beeps, indicating the temperature reading has been recorded.
5. Remove thermometer, clean according to facility policy, and place the probe back into the device.

Rectal Temperature

Measuring rectal temperature is an invasive method. Some sources suggest its use only when other methods are not appropriate. However, when measuring infant temperature, it is considered a gold standard because of its accuracy. The rectal temperature is usually 33.8°F (1°C) higher than the oral temperature. A rectal thermometer has red coloring to distinguish it from an oral or axillary thermometer (Figure 7.11). Thermometers that are specified for rectal use only should not be used to take any other type of temperature.

FIGURE 7.11 Thermometers specified for rectal use only are generally colored red and/or labeled for rectal use only. (attribution: Copyright

Rice University, OpenStax, under CC BY 4.0 license)

Follow these steps to take a rectal temperature:

1. Before taking a rectal temperature, ensure the patient's privacy. Wash your hands and put on gloves and any other PPE as necessary.
2. For infants, place them in a supine position and raise their legs upward toward their chest. Parents may also be encouraged to hold the infant across their lap, face down, to decrease movement and provide a sense of safety (Figure 7.12).

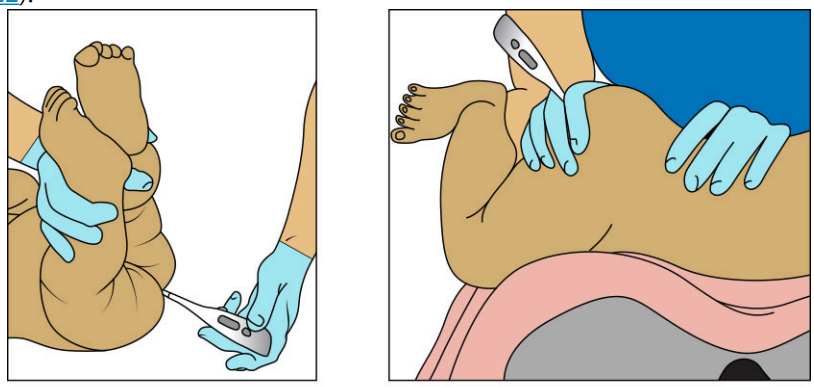


FIGURE 7.12 Rectal temperatures can be taken in either of these positions for an infant or child under the age of 2 years. (a) In this position, the infant is placed on their back with the nurse holding their legs up. (b) Alternatively, the infant can be placed stomach down on the nurse's lap. Rectal thermometers should be clearly marked that they are for rectal use only and should not be used for any other route. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

3. When taking a rectal temperature in older children and adults, assist them into a side-lying position (Figure 7.13) and explain the procedure.

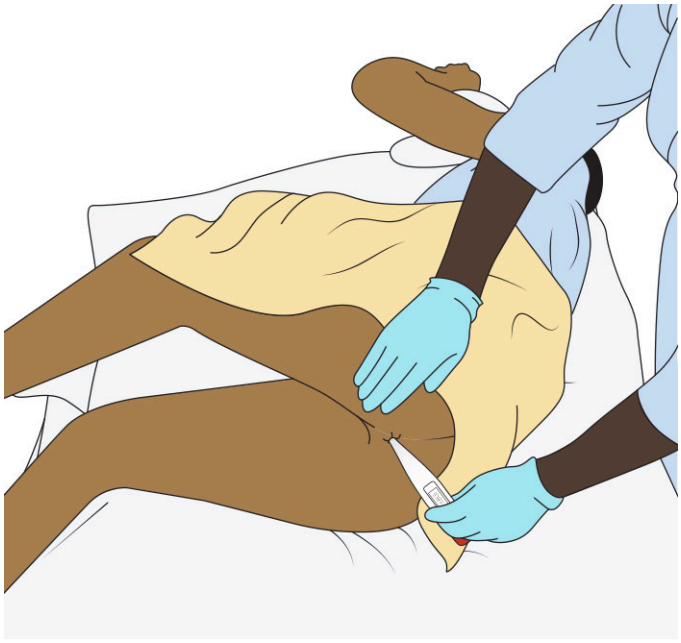


FIGURE 7.13 When taking a rectal temperature in adults, bending one or both of the knees better exposes the anus and anatomically aligns the rectum for ease of inserting the temperature probe. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

4. Remove the probe from the device and place a probe cover on the thermometer. Lubricate the cover with a water-based lubricant, and then gently insert the probe ½ to 1 in (1.3 to 2.5 cm) inside the anus, depending on the patient's size. Remove the probe when the device beeps.
5. Read the result and then discard the probe cover in the trash can without touching it. Assist the patient with redressing/covering up, as appropriate. Disinfect the device as indicated by facility policy. Remove your gloves, wash your hands, and store the thermometer in a designated place to ensure it will be only for rectal

use.

Taking rectal temperatures may not be the standard of practice in acute care or inpatient settings. In general, a specific order is required in inpatient/acute care settings for measuring rectal temperatures. Rectal temperatures are contraindicated in many patient situations, ranging from disease states, such as leukemia, to whether the patient is on certain medications such as blood thinners. Moreover, if the patient cannot be positioned in such a way to take a rectal temperature, this method is contraindicated as well.

Normal Temperature Ranges

Normal temperature ranges can vary across the life span and can vary among individuals. When working in an inpatient or acute care facility, be sure to check facility policy for specific parameters on what defines a fever. See Table 7.3 for normal temperature ranges for various routes.

Method	Normal Range
Oral	96.4°F to 99.1°F (35.8°C–37.3°C)
Axillary	94.7°F to 97.3°F (34.8°C–36.3°C)
Tympanic	97°F to 100.2°F (36.1°C–37.9°C)
Rectal	98.2°F to 100.4°F (36.8°C–38°C)

TABLE 7.3 Normal Temperature Ranges

Assessing Pulse

Pulse refers to the pressure wave that expands and recoils arteries when the left ventricle of the heart contracts. It is palpated at many points throughout the body. The most common locations to assess peripheral pulse are the radial, brachial, posterior tibial, dorsalis pedis, and popliteal arteries. Other sites are listed in Figure 7.14.

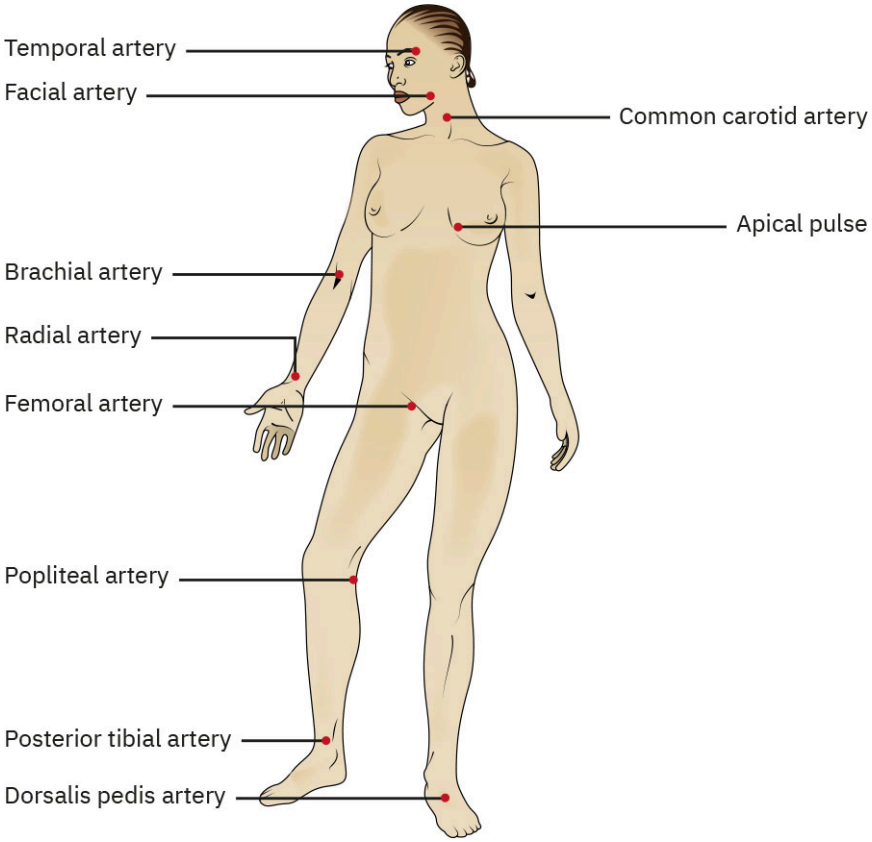


FIGURE 7.14 A patient's pulse is most readily measured at the radial artery but can be measured at any of the pulse points shown. (credit: modification of work from *Anatomy and Physiology* 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The **pulse rate** is measured in beats per minute, counted with the first beat detected. It is considered best practice to assess a patient's pulse for a full sixty seconds, especially if there is an irregularity to the rhythm. Every nurse must determine the most appropriate site to assess a patient's pulse. This is especially important if the patient is bleeding, unconscious, or has experienced trauma that might compromise a pulse site. In an emergency, the body will shunt blood away from the body's periphery (arms or legs) in favor of the core (torso and head). In this situation, the nurse should check pulses that are more centrally located, such as the carotid or femoral pulses, and then check more peripheral pulses, such as radial or brachial pulses, only if necessary.

REAL RN STORIES

The Necessity of Strong Assessment Skills

Nurse: Ahmad, RN
Years in practice: 4
Clinical setting: Cardiovascular Intensive Care Unit (CICU)
Facility location: Large hospital in Milwaukee, Wisconsin

It was three years into my nursing career, and at the end of my first year in the intensive care unit. I loved the detail-oriented emphasis on science and assessment in the CICU, and one night I found out just how important it was to get these details right. I admitted a vascular patient from the cardiac catheterization (cath) lab. They had a stent placed in their right leg to help open up a stenotic (clogged or blocked) artery. They had a blood thinner running through a large IV called a sheath in their groin to help keep the artery patent. My orders were to check the pulses in the lower extremities every hour. The patient was in a lot of pain and said the pain in their leg was "excruciating." I told the patient that was not uncommon because their limb was being perfused (receiving blood flow) adequately again, and often this causes a lot of discomfort. I got them their scheduled pain medication and continued to monitor them as ordered. Pulses were auscultated with a Doppler (a type of small ultrasound machine to help find

pulses that cannot be palpated) upon arrival, and I assessed them as strong, meaning I could hear loud pulsing on the Doppler machine. As the night continued, however, the patient continued to complain of increasing pain in the leg with the new stent. I also began to have a harder time finding the pulses in the right leg. At 1 a.m., the foot on the affected side started to feel colder, and the pulse was hard to hear with the Doppler. At 2 a.m., the pulse was faint, and the patient's foot started to look grayish and patchy (mottled). I sent a message to the resident, who called me back and told me to "keep an eye on it." When I checked the pulses again at 3 a.m., I couldn't find the dorsalis pedis pulse at all. I searched for at least fifteen minutes with the Doppler and couldn't find a pulse. The patient was screaming in pain every time I touched their leg, so I asked my charge nurse to bring some pain medication and to call the resident. I then asked the charge nurse to come to the bedside and see if she could find the pulse herself. She had been a CICU nurse for over ten years, and I trusted her judgment. She couldn't find the pulse either.

Finally, the resident came and was visibly tired and irritated. I reported my findings—increasing difficulty finding the lower extremity pulse, and now the pulse was absent. Extremity increasingly cool to the touch and now appearing mottled. The resident rolled his eyes and asked if we had checked a pulse again after calling. I said I had. He then asked if I had used a Doppler, and if I was "sure" there was no pulse. Again, I said I had used the Doppler and was sure, but I had also had the charge nurse check. The resident was clearly unhappy at being woken up, but this was important, so I encouraged him to try and find the pulse himself. The resident grabbed the Doppler and began to search for a pulse. After ten minutes, he couldn't find one either and finally started to look worried; he ordered a formal ultrasound of the leg to be done STAT at the bedside and called the vascular fellow to come assess the patient. Within thirty minutes, the fellow had arrived and had also assessed there was no pulse. The ultrasound confirmed the formation of a new clot in the right leg that was occluding the flow of blood. Things moved very quickly after that; ultimately, the patient ended up emergently going back to the operating room around 6 a.m. for a thrombectomy (clot removal procedure). I'll never forget that night because even though the doctor was dismissive, I trusted my instincts and advocated for the patient. My assessment saved the patient's leg.

Sites and Methods

While assessing a pulse, place two fingers on the pulse point. It is important to use your index and middle fingers to assess pulses; your own thumb has a pulse and may interfere with your assessment. Also, the index and middle fingers can easily access almost any pulse point. Pulse is created by the force of blood being pumped through the aorta from the left ventricle. This force manifests as a regular throb at a specific spot under the skin, called a **pulse point**, where the artery is close to the surface. Press down with your fingers until you can feel the pulsation, but not so forcefully that you are obliterating the wave of the force passing through the artery. Somewhere between light and firm is the best way to check a pulse, and then wait to feel the beat under your fingers.

With **palpation**, pulse is assessed by feeling with fingers. Palpation is the most frequently used method of assessing pulse, as it is readily available to do and can be done quickly if there is a critical need. Sites at which to obtain pulse measurements include the **radial artery** (pulse point located at each wrist below the base of the thumb), **carotid artery** (pulse point located on each side of the neck lateral to and above the trachea), **popliteal artery** (pulse point located behind both knees), **femoral artery** (pulse point located in the groin), **brachial artery** (pulse point located on each side of the upper arm on the medial aspect superior to the antecubital fossa), **posterior tibial artery** (pulse point located posterior to the medial aspect of the ankle), and **dorsalis pedis artery** (pulse point located roughly atop both feet). These common sites and methods of obtaining pulse measurements are listed in Table 7.4.

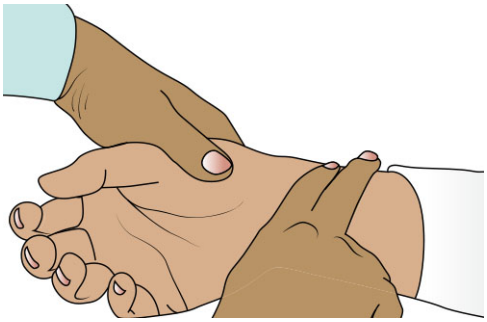
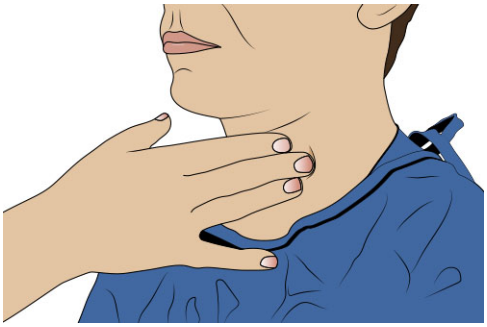
Location	Illustration	Explanation
Radial artery (wrist)	 FIGURE 7.15 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	Place the index and middle fingers where the thumb meets the wrist to assess the radial pulse. Note that radial pulses are difficult to palpate on newborns and children under the age of 5 years, so the brachial or apical pulses are typically obtained in this population.
Carotid artery (neck)	 FIGURE 7.16 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	Place the index and middle fingers laterally on one side or the other of the trachea, taking special care not to press too hard to occlude blood flow or cause discomfort to the trachea. The carotid pulse is typically palpated during medical emergencies because it is the last pulse to disappear when the heart is not pumping an adequate amount of blood.

TABLE 7.4 **Pulse Points**

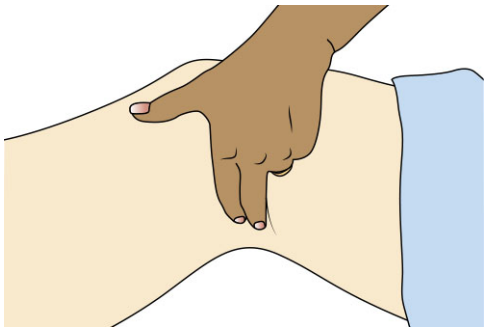
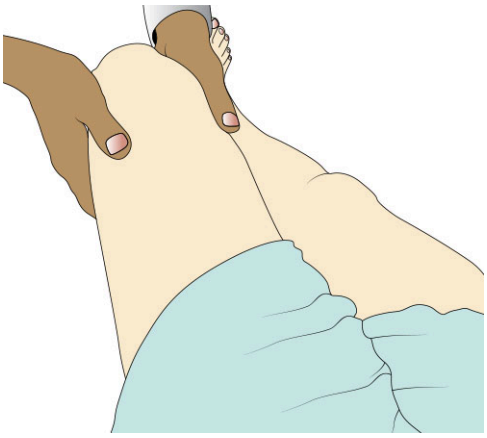
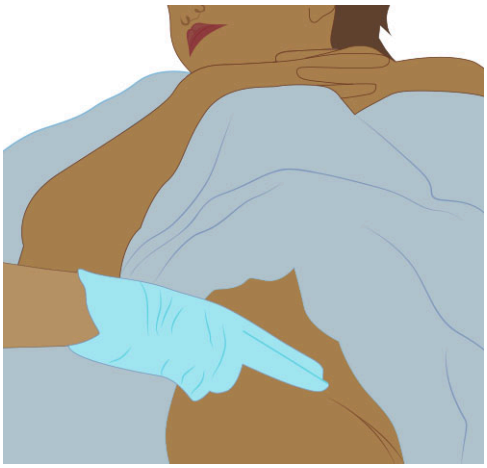
Location	Illustration	Explanation
Popliteal artery (behind the knee)	 FIGURE 7.17 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)  FIGURE 7.18 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	With the knee slightly bent, place the index and middle fingers on the medial aspect of the back of the knee. This can also be done with both hands to palpate both the medial and lateral aspects of the knee.
Femoral artery (groin)	 FIGURE 7.19 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	With the patient lying supine and relaxed, place the index and middle finger in the middle of the crease where the leg joins the anterior abdomen.

TABLE 7.4 **Pulse Points**

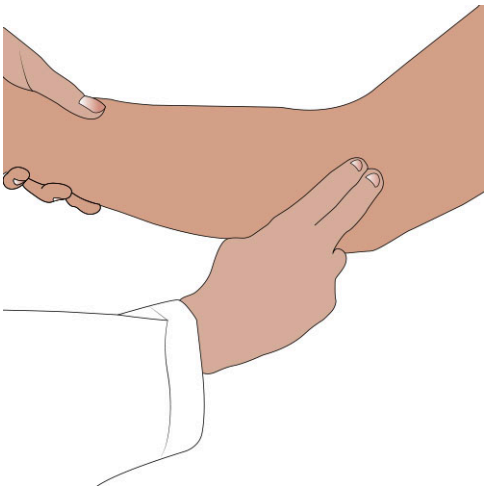
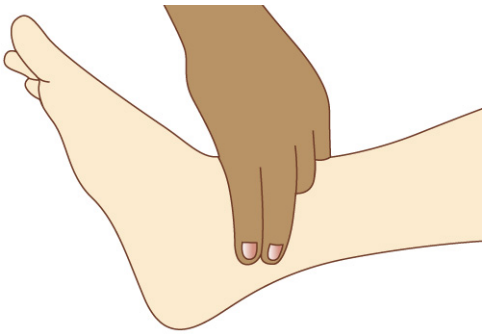
Location	Illustration	Explanation
Brachial artery (upper inner arm)	 FIGURE 7.20 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	With the patient sitting upright or lying in bed, place the index and middle finger on the medial aspect of the upper arm superior to the antecubital fossa; this also is the place where the bladder of the blood pressure cuff is placed when taking a blood pressure. A brachial pulse is typically assessed in infants and children because it can be difficult to feel the radial pulse in these populations. If needed, a Doppler ultrasound device can be used to obtain the pulse.
Posterior tibial artery (behind the ankle bones)	 FIGURE 7.21 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	This is easiest to feel when the patient is lying supine. Place the index and middle fingers posterior to the ankle bones.
Dorsalis pedis artery (top of the foot)	FIGURE 7.22 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)	This is best done with the patient lying supine. Place two fingers on the top of the foot; often this pulse is located more medially, superior to the great toe.

TABLE 7.4 Pulse Points

LINK TO LEARNING

A demonstration of how to complete a nine pulse points assessment on the body (https://openstax.org/r/77pulsepoints) is presented in this video.

Sometimes, however, pulses cannot be palpated. This can be due to many reasons, such as trauma to the body or patient disease states, such as cardiovascular disease or peripheral artery disease. If a pulse is absent, a **doppler ultrasound device** is typically used to verify perfusion of the limbs. A Doppler is a handheld device that allows the examiner to hear the whooshing sound of the pulse. This device is also commonly used when assessing peripheral pulses in the lower extremities, such as the dorsalis pedis pulse or the posterior tibial pulse. Using a Doppler still requires the nurse to be able to identify the anatomical locations of pulses and to know which pulses are best to use in a given situation.

Follow these steps to use a Doppler to auscultate pulses:

1. Obtain a Doppler machine. Wash hands before any patient interaction. Don gloves and any other appropriate PPE necessary.
2. Locate the desired pulse to assess. Apply a small amount of medical-grade ultrasound gel to the desired pulse site.
3. Turn on the Doppler, and place it atop the gel. Gently press on the Doppler probe; as with manual palpation, do not press so hard as to occlude the artery, but do not place the probe so lightly as to not be able to assess the pulse.
4. Listen for a pulsing "whoosh" sound to know if the pulse has been located. Ensure that the sound heard is pulsing; a continuous "whoosh" indicates the Doppler has located a vein and not an artery. Once the pulse is correctly located, assess as if palpating for sixty seconds (or thirty seconds and multiply by two).
5. Wipe down the patient's skin to clean off the ultrasound jelly; also wipe down the Doppler machine and clean with an alcohol wipe or according to facility policy.

LINK TO LEARNING

Learn how to assess a radial pulse with a Doppler device (https://openstax.org/r/77radpulse) in this video.

Normal Pulse Ranges

The normal adult pulse rate (heart rate) at rest is 60 to 100 bpm with different ranges according to age (Table 7.5). It is important to consider each patient's situation when analyzing if their pulse rate is within normal range. Begin by reviewing their documented baseline pulse rate. Consider other factors if the pulse is elevated, such as the presence of pain or crying in an infant. It is best to document the assessment when a patient is resting and comfortable, but if this is not feasible, document the circumstances surrounding the assessment, and reassess as needed.

Age Group	Pulse Rate (bpm)
Preterm	120 to 180
Newborn (0–1 month)	100 to 160
Infant (1–12 months)	80 to 140
Toddler (1–3 years)	80 to 130
Preschool (3–5 years)	80 to 110
School age (6–12 years)	70 to 100
Adolescents (13–18 years) and adults	60 to 100

TABLE 7.5 Normal Pulse Rate Range

Assessing Respiratory Rate

A patient's respiratory rate can be indicative of homeostatic imbalances in the body; thus, an accurate assessment

is invaluable to healthcare providers. Rapid rates can be due to pain or anxiety caused by external factors; they can also be responses to internal homeostatic imbalances such as **respiratory acidosis** or **respiratory alkalosis** (discussed in greater depth in Chapter 20 Fluid, Electrolyte, and Acid-Base Balance). Respiratory acidosis is a condition that occurs when your lungs cannot remove all the carbon dioxide produced by the body. This results in an overabundance of carbon dioxide that results in acidosis, or too much acid in the blood. This can happen for many reasons, some of which include very slow or shallow breathing. Respiratory alkalosis, on the other hand, is a condition when the lungs have removed too much carbon dioxide. This results in too little carbon dioxide in the blood and can occur with very rapid, deep breaths. Accurately assessing a patient's respiratory rate can help pinpoint whether these or other respiratory issues are occurring and can help the nurse and other healthcare providers make the appropriate care decisions necessary.

Measuring Respirations

The easiest and most time-efficient way to measure respiratory rate is to first tell the patient that you will be assessing their pulse. Not telling the patient their respiratory rate is being measured ensures they do not unconsciously change their respiratory rate. Locate the radial pulse and then observe the patient's chest rise and fall; if the patient has a regular rate, count each respiration cycle for thirty seconds and multiply by two. If the patient's respirations are irregular, count each cycle for a full minute. Assessment of respirations also includes auscultating their breaths with a stethoscope. Depending on your practice location, the patient may be sitting up or lying down in bed. The ideal position for assessing respirations is sitting up and a bit forward; this is so gravity can help the lungs be as open as possible. If patient acuity does not allow for this, assessing respirations while supine or lying upright in bed is acceptable.

When obtaining a respiratory rate, the respirations are also assessed for quality, rhythm, and rate. The quality of a person's breathing is normally relaxed and silent. However, loud breathing, nasal flaring, or the use of accessory muscles in the neck, chest, or intercostal spaces indicates respiratory distress. People experiencing respiratory distress also often move into a tripod position, meaning they are leaning forward and placing their arms or elbows on their knees or on a bedside table. If a patient is demonstrating new signs of respiratory distress as you are obtaining their vital signs, it is vital to immediately notify the healthcare provider or follow agency protocol. Respirations normally have a regular rhythm in children and adults who are awake. A regular rhythm means that the frequency of the respiration follows an even tempo with equal intervals between each respiration. However, newborns and infants commonly exhibit an irregular respiratory rhythm.

LINK TO LEARNING

Learn more about how to assess respiratory rate accurately in patients (https://openstax.org/r/77resprate) by watching this video.

Normal Respiratory Rate Ranges

Like all other vital signs, the normal respiratory rate is different based on the patient's age. In infancy, the normal rate is 30 to 53 breaths per minute. This decreases to 22 to 37 breaths per minute for toddlers, and 18 to 25 breaths per minute for school-age children. Then from adolescence through adulthood, the normal rate is 12 to 20 breaths per minute. Changes from these norms can be indicative of disease processes or homeostatic imbalances with the patient, or just as with the other vital signs, it can indicate the effect of external and modifiable factors such as anxiety, fear, or pain. It is important for the nurse to consider the respiratory assessment data in context with the other vital signs and other situational and correlating data obtained from the patient to direct the appropriate course of action.

Assessing Oxygen Saturation

Oxygen saturation is measured with a machine called a pulse oximeter, which consists of a specialized probe that shines two LED lights—one red and one infrared—through the skin or the fingernail. The probe analyzes the lights as they shine through the red blood cells in the finger. The wavelengths of light differ according to the amount of hemoglobin attached to the red blood cells; the oximeter analyzes this and determines the patient's oxygen saturation. Pulse oximetry devices may be a disposable sticker that wraps around one of the patient's fingers and

attaches to a reusable oximetry machine or a clip that goes over the tip of the finger (Figure 7.23). These devices often assess the patient's heart rate as well as measure their oxygen saturation.

FIGURE 7.23 Measuring oxygen saturation with a pulse oximeter can be done in a variety of healthcare settings, or even at home. (credit: modification of "We compared the performance of an expensive and a cheap pulse oximeter." by MIKI Yoshihito, Flickr)

Nail polish or artificial nails can affect the absorption of light waves from the pulse oximeter and decrease the accuracy of the SpO_2 measurement when using a probe clipped on the finger. An alternative sensor that does not use the finger should be used for these patients, or the nail polish should be removed. If a patient's hands or feet are cold, it is helpful to clip the sensor to the earlobe or tape it to the forehead.

Normal Oxygen Saturation Ranges

Across the life span, normal oxygen does not vary much; a healthy individual should have an SpO_2 reading between 95 and 100 percent, regardless of age. For patients with chronic respiratory conditions, such as COPD, the target range for SpO_2 is often lower at 88 to 92 percent. Although SpO_2 is an efficient, noninvasive method to assess a patient's oxygenation status, it is an estimate and is not always accurate. For example, if a patient is severely anemic and has a decreased level of hemoglobin in the blood, the SpO_2 reading is affected. Decreased peripheral circulation can also cause a misleading low SpO_2 level.

In practice, the nurse should be sure to check with the provider to familiarize themselves with the patient's baseline SpO_2 and ensure the proper orders are in place that outline the amount of oxygen a patient should get according to their disease state. Oxygen is a drug like any other medication, and a person can be given too little or too much. Nurses are licensed to apply oxygen as necessary in an emergency situation and can obtain an order from the healthcare provider after the fact. Some facilities may have standing orders based on vital sign readings.

Assessing Blood Pressure

The accurate measurement of blood pressure is important for ensuring patient safety and optimizing body system function. Blood pressure measurements are used by healthcare providers to make important decisions about a patient's care. Blood pressure measurements help providers make decisions about whether a patient needs fluids or prescription medications. It is crucial to follow the proper steps to obtain a patient's blood pressure to ensure the care team has accurate data to help make healthcare decisions and determine a plan of care. A nurse must first select a blood pressure cuff that is the correct size for the patient, as noted in the facility's guidelines (Figure 7.24).

FIGURE 7.24 Selecting the correct size blood pressure cuff is required in order to obtain an accurate blood pressure measurement. A blood pressure cuff that is too large for a patient's arm can lead to a reading that is falsely low, whereas a blood pressure cuff that is too small for a patient's arm can lead to a reading that is falsely high. (credit: "Sizes of Blood Pressure Cuffs" by National Library of Medicine, CC BY 4.0)

Blood pressure readings can be inaccurate if the cuff is too small or large for the patient's arm. The width of the cuff should be 40 percent of the person's arm circumference, and the length of the cuff's bladder (part of the cuff that inflates) should be 80 to 100 percent of the person's arm circumference. Keep in mind that only about half of the blood pressure cuff is the bladder, and the other half is cloth with a hook-and-loop fastener to secure it around the arm. The cuff must also be placed appropriately on the patient's arm so the bladder is over the brachial artery. Another factor to be considered is if the patient has any restrictions on blood pressure being taken. It is important to assess any restrictions on locations for blood pressure readings. For example, patients who have had chest surgery, such as a mastectomy or lymph node dissection, may be advised to restrict blood pressure readings on that side of the body.

LINK TO LEARNING

The procedure for obtaining a blood pressure measurement (https://openstax.org/r/77bloodpres) is presented in this video.

Sites and Methods

To assess blood pressure, place the patient in a relaxed reclining or sitting position. The patient should be seated quietly for at least five minutes in a chair prior to blood pressure measurement. Ask the patient which arm they prefer to use. Be aware of conditions that contraindicate the use of an arm for blood pressure measurement, such as a previous mastectomy or the presence of a fistula. During the procedure, both feet should be on the floor, and the arm should be supported at heart level. Adapt the procedure to life-span considerations of the patient, as appropriate. There are four main methods to assessing blood pressure:

1. To take a **manual blood pressure** reading, a stethoscope and a **sphygmomanometer** (manual blood pressure cuff) are used. This method entails placing the bell (smaller side) or diaphragm (larger side) of the

stethoscope on the brachial artery and compressing the artery with the blood pressure cuff. The following are completed to obtain a manual blood pressure:

a. Gather the proper equipment: a sphygmomanometer, a stethoscope, and an appropriately sized blood pressure cuff. The cuff's bladder should encircle 80 to 100 percent of the patient's arm circumference (AHA, 2023). Wash your hands and don gloves (if necessary) before any patient interaction. Don any appropriate PPE as required per patient situation and facility guidelines.
b. Remove or rearrange the patient's clothing so the cuff and the stethoscope are on bare skin.
c. Center the bladder of the blood pressure cuff over the brachial artery with the lower margin 1 in above the antecubital space. Fit the cuff evenly and snugly. Palpate the brachial artery in the antecubital space.
d. Locate the radial pulse.
e. Close the valve on the air bulb and inflate the cuff rapidly (while palpating the radial or brachial pulse) to the level at which pulsations are no longer felt.
f. With the eartips of the stethoscope placed downward and forward, place the bell/diaphragm lightly on the brachial artery and rapidly inflate the cuff to thirty points above where the brachial or radial pulse is no longer felt.
g. Deflate the cuff gradually at a constant rate by slightly opening the valve on the bulb (2 to 3 mm Hg/second) until the first **Korotkoff** (pulse) sound is heard. Note the systolic pressure.
h. Continue to deflate the cuff slowly at 2 mm Hg/second. Note the point at which Korotkoff sounds disappear completely as the diastolic pressure.
i. Deflate the cuff completely and remove the patient's arm from the cuff.
j. Inform the patient of the blood pressure reading.
k. Cleanse all equipment as per facility policy.

See Figure 7.25 for a visual of all the elements discussed.

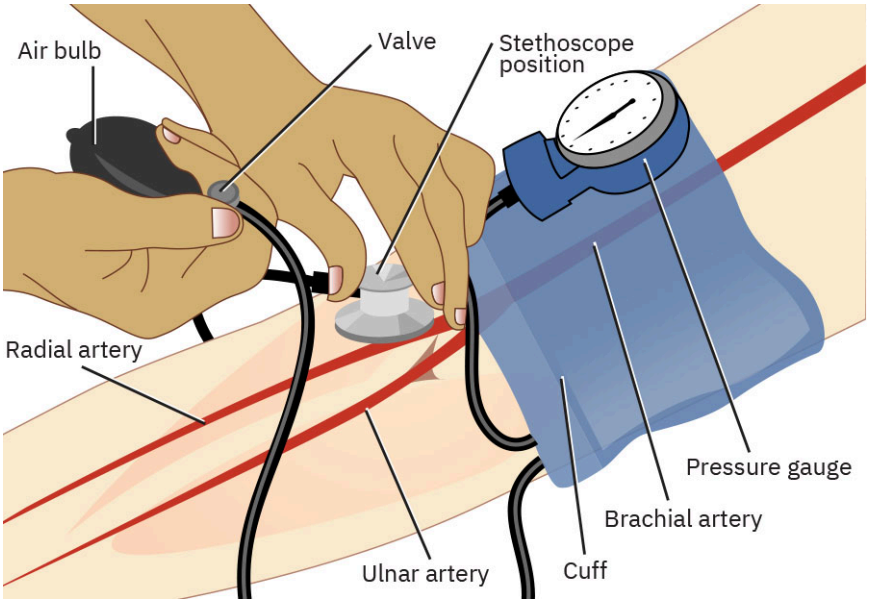


FIGURE 7.25 Measuring blood pressure manually entails obtaining the right cuff and placing the cuff in the right place over the brachial artery. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

2. Electric or **automatic blood pressure** is taken using an electric cuff/blood pressure machine; no stethoscope is required. The cuff is placed around the patient's upper arm, and the machine automatically compresses the artery and measures the blood pressure (Figure 7.26). As with a manual pressure, ensure the patient is properly positioned sitting upright with back and arm supported and legs uncrossed.

FIGURE 7.26 Using an automatic blood pressure machine does not require a stethoscope but still requires a properly sized blood pressure cuff for accuracy. (credit: modification of "Automatic blood pressure cuff" by BCcampus, CC BY 4.0)

3. In some patient situations, a manual or automatic blood pressure cannot be obtained. The patient could be critically ill and not have peripheral pulses to measure a blood pressure, or they could have a type of heart failure that requires an artificial implant to circulate their blood called a **left ventricular assist device**. In these special cases, a **doppler blood pressure** is obtained.
   The procedure to obtain a Doppler blood pressure is similar to that used to obtain a manual or automatic blood pressure. The peripheral pulse is located and auscultated, and the properly sized blood pressure cuff is identified and placed. The cuff is inflated until the pulse on the Doppler machine can no longer be heard, and then the cuff is released, just as with a manual pressure. The number on the sphygmomanometer that correlates with the return of the Doppler pulse sound is the systolic blood pressure; no diastolic pressure is measured with this method.
4. Arterial pressure monitoring may be utilized in some situations where the patient is critically ill and needs continuous pressure monitoring, other methods of blood pressure monitoring are impractical, or the patient needs frequent arterial blood sampling (Saugel et al., 2020). An **arterial line** is a thin, hollow, flexible tube that is placed into a peripheral artery (often in the wrist or groin). In **arterial pressure monitoring**, an invasive measurement, a catheter is placed inside the patient's body. The arterial line is connected to a transducer via a rigid fluid-filled tubing that converts the data to display on a monitor as arterial waveforms during heartbeats as well as numerical pressures (Nguyen & Bora, 2023).
   This method provides real-time, continuous information about the cardiovascular system (Figure 7.27). These constant measurements help the providers make care decisions such as medication selection and titration when these patients are critically ill. It is also a highly complicated method that requires proper skill in selecting the correct catheter site, choosing the correct catheter, leveling and zeroing the transducer, and monitoring the quality of the blood pressure waveform (Saugel et al., 2020).

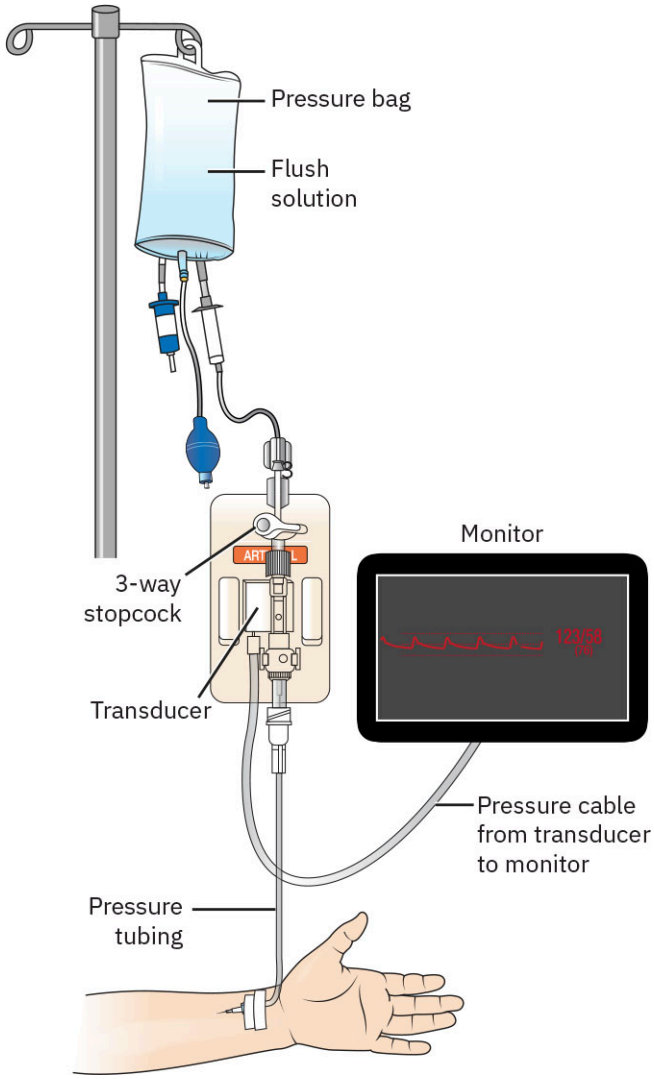


FIGURE 7.27 An arterial line blood pressure monitoring setup requires specialized knowledge not only to insert the tube but also to properly calibrate the pressure tubing in order for the machine to yield accurate blood pressure measurements. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Watch this video to learn about arterial lines (https://openstax.org/r/77linepress) and their placement locations and line pressure monitoring.

Normal Blood Pressure Ranges

Abnormal blood pressure readings can signify an area of concern and a need for intervention. Normal adult blood pressure should be less than 120/80 mm Hg. The medical term for elevated blood pressure readings of 130/80 mm Hg or higher is **hypertension**. See Table 7.6 for blood pressure categories according to the 2017 American College of Cardiology and American Heart Association Blood Pressure Guidelines (Welton et al., 2018). Prior to diagnosing a person with hypertension, the healthcare provider will calculate an average blood pressure based on two or more blood pressure readings obtained on two or more occasions.

Blood Pressure Category	Systolic mm Hg (Upper Number)	Diastolic mm Hg (Lower Number)
Normal	<120	<80
Stage 1 hypertension	130 to 139	80 to 89
Stage 2 hypertension	140 to 179	90 to 119
Hypertensive crisis	180 or above	120 or above

TABLE 7.6 **Blood Pressure Categories**

The medical term for low blood pressure readings less than 90/60 mm Hg is **hypotension**. Hypotension can be caused by dehydration, bleeding, cardiac conditions, and the side effects of many medications. Hypotension can be of significant concern because of the potential lack of perfusion to critical organs when blood pressures are low. A drop in blood pressure that occurs when moving from a lying down (supine) or seated position to a standing (upright) position is **orthostatic hypotension**. When measuring blood pressure, orthostatic hypotension is defined as a decrease in blood pressure by at least 20 mm Hg systolic or 10 mm Hg diastolic within three minutes of standing. When a person stands, gravity moves blood from the upper body to the lower limbs. As a result, there is a temporary reduction in the amount of blood in the upper body for the heart to pump, which decreases blood pressure. Normally, the body quickly counteracts the force of gravity and maintains stable blood pressure and blood flow. In most people, this transient drop in blood pressure goes unnoticed. However, some patients with orthostatic hypotension can experience lightheadedness, dizziness, or fainting. This is a significant safety concern because of the increased risk of falls and injury, particularly in older adults.

PATIENT CONVERSATIONS

Validating Vital Signs

Scenario: Josiah is the intensive care unit nurse taking care of Derek Warner, who had heart surgery three days ago. The breathing tube he had inserted while in the operating room has been removed, and right now Derek only has a couple of intravenous (IV) lines for some medications. He has had mildly high blood pressure since the surgery, around 130s/70s with medications and 150s/90s without. His doctors have had him on IV blood pressure medications, and he is being transitioned to oral medications. His mother, Mrs. Warner, is visiting, and he is sitting up in the chair eating lunch. While he is finishing up, the monitor in the room starts alarming.

Patient's mother: Nurse! Nurse! We need some help in here!

Nurse: Hello Mrs. Warner, Derek. What can I help you with?

Patient's mother: The monitor was alarming! What's wrong?

Nurse [looks at the monitor]: I see what the problem is. The machine read Derek's blood pressure and heart rate as very high.

Patient's mother [sees monitor reads blood pressure 193/130 and heart rate 165]: Oh no! That's awful right? Shouldn't you call the doctor?

Nurse: Let me talk to Derek first. Derek, how are you feeling? Are you in any pain?

Patient: I'm feeling just fine. No pain really, just the same dull ache where my surgical incision is.

Nurse: That's good. I'm just going to take your vital signs again, all right? I'm also going to take a look at your monitoring equipment just to make sure everything is okay.

Patient's mother: You're wasting valuable time. My son could be very sick right now, and you're messing around with machines! Call the doctor!

Nurse: I will of course call the doctor if something is wrong; however, Derek says that he feels okay and is not experiencing any signs or symptoms that would warrant those extremely abnormal vital sign readings. This may just be an issue with the machines. That happens sometimes, especially when patients are getting better and starting to move around like Derek is. Just to be sure, though, I'll have the monitor take a manual blood pressure while I'm adjusting the rest of the equipment. [Josiah puts the blood pressure cuff on Derek and proceeds to check the rest of the vital sign monitoring equipment.]

Nurse: There, that looks much better.

Patient's mother [sees the blood pressure is now 120/70 and the heart rate is 95]: Are you sure? Maybe you just adjusted the machines to make it look better. I still think you should call the doctor.

Nurse: The blood pressure cuff is correlating with the arterial line; it says 124/72. This tells me that the abnormal readings were anomalies and not truly reflective of Derek's vital signs. Plus, Derek himself says that he is feeling okay. You seem worried, though, Mrs. Warner. Do you have some concerns you'd like to talk about?

Patient's mother: I'm just so worried, I've never had a child in the hospital before. I guess I'm okay. Sorry.

Nurse: It's not a problem at all. If you have some specific questions or concerns you'd like to ask, you can ask me, or I can get the doctor to speak with you when he makes his afternoon rounds. Would that work for you?

Patient's mother: Yes, it would. Thank you.

Patient: Thanks, man. I appreciate it.

Nurse: No problem at all. I will be monitoring you just outside the door here while I do some charting. [leaves the room]

Scenario follow-up: Josiah knows from how his patient looks that these data are abnormal and not valid. However, he does his due diligence and ensures that Derek is feeling okay and he also double-checks the blood pressure reading just in case. By ensuring that the abnormal vital signs were a false alarm, Josiah knows he can reassure the patient and the patient's mother as well as educate them about the measurement of vital signs.

7.3 Teaching Patients to Perform Vital Signs

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain why patients would need to self-monitor vital signs
- Describe the process of educating a patient about self-monitoring vital signs
- Recognize how a patient should validate the obtained vital sign data

An important responsibility of healthcare providers is not only to provide care but also to educate patients and their families on how to better care for themselves. Patient education is a major part of the duties of a nurse, and this sometimes includes teaching patients how to monitor their own vital signs. By teaching patients how to do this without the assistance of a licensed healthcare provider, nurses help patients understand their own bodies and physiological processes and empower them to live healthier lives.

Educating a Patient to Self-Monitor

There are many situations that require patients to self-monitor their vital signs. Consider this situation: a patient has been going in to see the doctor, and their blood pressure readings are always abnormally high (150s/90s). The patient exercises regularly, maintains a healthy weight, and eats a reasonably healthy diet. The patient also has no symptoms of ongoing high blood pressure like vision problems or headaches. However, hypertension often has no symptoms, and people with healthy lifestyle habits can be diagnosed with hypertension, so the doctor and the healthcare team must take it seriously. It could be possible that the patient is unconsciously nervous when they go into the doctor's office, thus elevating their blood pressure higher than usual, a condition known as **white coat hypertension** or white coat syndrome. To figure out whether the patient genuinely has hypertension, the doctor needs the patient to monitor their blood pressure at home in a comfortable environment.

There are many scenarios in which a patient may need to monitor their own vital signs, for instance, a patient is on a

new heart medication, and the doctor needs to monitor the patient's pulse and blood pressure to ensure no harmful side effects. Or perhaps a patient has low white blood cells related to chemotherapy and needs to monitor their temperature for signs of fever. Or maybe a patient has cystic fibrosis or symptoms of long COVID and needs to monitor their oxygen saturation in case they have trouble breathing and need to go to the emergency room. In any case, it is important for healthcare providers to understand how to teach patients how to self-monitor. To self-monitor their vital signs, patients need to obtain the proper equipment, learn how to use it, learn how to validate their own results, and report their results accurately to their healthcare provider.

To teach self-monitoring, nurses first need to know how the patient best likes to learn; some people prefer to read brochures and articles, while others may prefer diagrams and pictures. Others may learn best with videos or with in-person demonstrations. Once the nurse has established how the patient best learns new information, they can begin teaching the patient how to obtain their own vital signs.

Educating a Patient to Obtain Vital Signs

The following equipment is needed to obtain vital signs at home:

- properly sized electronic blood pressure cuff and blood pressure machine
  - In situations where patients take manual blood pressures, they will need a properly sized cuff, a stethoscope, and a sphygmomanometer.
- pulse oximetry machine to measure heart rate and/or oxygen saturation
- digital thermometer to measure temperature
  - Mercury thermometers are no longer recommended for home use due to the dangers of breaking glass and mercury poisoning.

Consistency is important for all vital signs measurements; thus, patients should be taught to take their vital signs at the same time of day every day. Because blood pressure is lowest in the morning before eating anything, teaching patients to take their vital signs when they first get up is most ideal. Patients will also need a method of recording their vital signs. Possibilities include writing them down in a notebook or keeping track on their cellphone in a memo app. There are also specialized health apps to help keep track of vital signs.

PATIENT CONVERSATIONS

You Can Always Learn Something New

Scenario: Mr. Atambe has been directed by his doctor to monitor his blood pressure at home. This is the first time he has had to do this, and he's not happy about it. Mr. Atambe's nurse, Wendy, realizes his reluctance and considers what would be the best way to help him.

Nurse [entering the room]: Hi, Mr. Atambe, how was your talk with the doctor?

Patient: Stupid. The man wants me to check my blood pressure at home. He says I might have high blood pressure. But that's what I come to the doctor's office for! Doing this at home myself is stupid. If I wanted to do something like this, I would have gone to medical school.

Nurse: I understand your frustration, but this is important information that will keep you healthy and away from the doctor's office in the long run! What can I do to help you and make this easier?

Patient: Ugh. Well, if I have to, I guess. But I'm probably going to get it wrong anyway, and I'll still have to come back all the time.

Nurse: Why do you think you're going to get it wrong?

Patient: Well, I never told anyone, but I can't read so well. Pictures and diagrams really confuse me too. I was such a bad student in school. And now my health depends on me learning something they teach doctors and nurses! This is horrible!

Nurse: I understand your concerns, and I want to reassure you that there are machines that can make taking your blood pressure very easy! People learn how to do it every day. Here, let me get a few things, and I will show you. Is

that okay?

Patient: I guess so.

[Wendy leaves the room briefly and returns with an automatic blood pressure machine, several sizes of blood pressure cuffs, and a laptop.]

Nurse: Okay! Here is a blood pressure machine and some cuffs. Getting the right-sized cuff is an important part of taking your pressure with a machine. I brought some cuffs to try on and see which one fits best. Then we can try using the blood pressure machine together—I will show you how to sit and position yourself for the best reading possible.

Patient: This is great, I really appreciate your help! But what if I forget the steps to do this? And how do I know when the numbers are good or not?

Nurse: I have some videos that explain everything. I'll add the number to the office, too, if you have any questions once you get started.

Patient: Thank you so much!

Nurse: Of course! Let's take a look at them now, and then let's try that blood pressure.

To obtain an oral temperature, a digital thermometer should be obtained. Patients should be instructed on proper placement of the thermometer in the mouth, under the tongue and back toward the sides of the mouth but not touching the gums. Patients should be instructed to refrain from eating or drinking anything thirty minutes prior to measuring their temperature so they do not artificially alter the reading.

To obtain heart rate and/or oxygen saturation, an oximetry probe and monitor must be obtained. Hands should be clean and dry before placing the probe on a finger without nail polish or fake nails. The patient should be seated upright and comfortably; to obtain the best reading possible, it may be helpful to instruct the patient to take a few deep, calming breaths before recording the results. Although patients can monitor their own respiratory rate at home, it may not be as accurate as when someone else does it when the patient is not aware. Patients tend to not breathe as they naturally do if they know they have to count respiratory cycles. If the patient has family or a caregiver who can monitor the respiratory rate while the patient is relaxing, that would be a better option.

To obtain blood pressure at home, patients must be taught proper body placement to ensure accuracy. They must sit upright with their back supported. The arm they will take their pressure in must be supported at heart level and bared to the upper arm. Legs must be uncrossed and feet flat on the ground. The cuff must be the correct size and wrapped snugly around the upper arm. It may be helpful to demonstrate proper cuff placement over the brachial artery for patients. A machine that is validated for home use and for the use of the particular patient should be selected. Each time the patient measures their blood pressure, they should do two readings, one minute apart (American Heart Association, 2023). This is recommended in the home setting because research has shown that monitoring the average of a series of readings gives the provider more accurate information about blood pressure fluctuations and can better manage hypertension (Kumar, 2021).

LINK TO LEARNING

The American Heart Association (https://Openstax.org/r/77AmHeart) has helpful tips for patients on taking their blood pressure at home. Viewing this can give you ideas on how to educate your own patients.

Validating Vital Sign Data

Similar to how nurses and other healthcare providers must analyze and validate (prove the accuracy of) the vital signs data they obtain, it is important to educate patients who are taking their own vital signs at home how to analyze and validate their own numbers. Is there an unusually high or low reading? Was there anything different about when the patient took that pressure? Were any new medications introduced? This information will provide much needed context to the readings and allow the physician to make a well-informed decision about care

decisions and medications prescribed going forward.

Rechecking Abnormal Readings

When monitoring vital signs at home, patients should be given information regarding the normal ranges of vital signs to look for so that they can then identify results that fall out of these normal ranges (abnormal) (Table 7.6).

The nurse must also educate the patient on signs and symptoms to help validate their readings. If the patient takes their blood pressure at home and receives a reading of 190/110, the patient should ask themselves if they have any symptoms or are feeling differently. Do they have a headache or blurred vision? How does their heart feel? Do they have pain anywhere? Similarly, if they get a heart rate or oxygen saturation that is not within normal limits, the patient must be able to ask themselves if anything is different for them. It may be beneficial for patients to keep a journal or log with their vital sign readings as well as any corresponding symptoms. This will help keep a record of each event and will alleviate the burden of remembering the details that can then be discussed with the healthcare team.

Notifying Provider of Abnormal Readings

Sometimes vital signs truly are abnormal, and if the patient has taken their vital signs and validated the data, they must inform their healthcare provider immediately. Some healthcare offices have urgent care lines where patients can call to report abnormal vital signs; others have mobile applications that the patient can use to directly contact a doctor, nurse, or healthcare provider at the practice. Check what the protocol is on reporting this information, and be sure the patient understands the process. Some facilities may prefer nurses to call the doctor via a hospital work phone, others may allow nurses to page the doctor through the computer system or through the charting record. Either way, if a nurse has determined the recorded vital signs are indeed valid, it is the nurse's duty to inform the doctor in a timely manner.

Summary

7.1 Indicators of Physiologic Functioning

Vital signs are arguably the most frequently used metrics by healthcare providers because they are important and interrelated indicators of the body's homeostatic functioning. Vital signs in the normal range indicate the presence of homeostasis, or balance, in the body. Body temperature is regulated by the hypothalamus; its homeostatic mechanisms include involuntary actions such as sweating and shivering to reestablish temperature into the normal range. Pulse is the direct measurement of a patient's heart rate. The number of beats per minute is a strong indicator of how hard the heart is working to perfuse the body; irregular beats or a rhythm that is too fast or too slow can indicate alterations in cardiovascular homeostatic balance. Respirations are the mechanism by which the body brings in oxygen and exchanges it for carbon dioxide in the lungs to be exhaled as waste. Blood pressure is a measure of the pressure the blood exerts on the arterial walls; a certain amount of pressure is required for adequate amounts of blood to circulate through the body and bring the oxygen to the organs. Oxygen saturation is a percentage of total oxygen that the blood can carry throughout the body. The interrelation of the five vital signs gives healthcare providers vitally important information to determine what is going on with a patient.

7.2 How to Perform Vital Signs

The accurate measurement of vital signs is an essential duty of nurses when caring for patients. The most common methods of temperature measurement in the hospital setting include oral, tympanic membrane, axillary, and rectal routes, and the nurse must select the method that is most appropriate for their patient's developmental age. Pulse should be palpated manually via one of the pulse points located on the body; proper technique includes using the index and middle fingers of one hand and applying light but firm pressure to the site. Assessment of respirations must be done when the patient is unaware their respirations are being assessed, lest the patient change their respirations unconsciously. Oxygenation status is assessed using a pulse oximeter, which is most commonly applied to a finger but can also be applied to the forehead or earlobe. Blood pressure can be measured in four different ways; the method of measurement selected depends on the patient's acuity and care location.

7.3 Teaching Patients to Perform Vital Signs

Patients may be required to self-monitor their vital signs at home, and it is the responsibility of the nurse to educate the patient on how to properly do this. Nurses must first establish how their patient best likes to learn, and from there teach the patient the necessary information. Besides being able to take their own vital signs, patients must also be able to do basic analysis of their vital sign readings. Reference ranges for normal vital signs must be given to the patient, and if they get an abnormal reading, they must be able to troubleshoot and figure out if the reading is correct or not. Finally, nurses must establish the best way for patients to report their findings, particularly if they are abnormal, to the healthcare provider.

Key Terms

afebrile when a patient's temperature is back at their normal baseline and is no longer elevated to indicate a fever

arrhythmia an abnormal heart rhythm caused by irregularities in electrical conduction through the heart or injury to the heart muscle itself

arterial line a thin, hollow, flexible tube that is placed into a peripheral artery, such as the wrist or groin

arterial pressure monitoring an invasive method of continuous blood pressure monitoring

automatic blood pressure blood pressure taken using an automated blood pressure machine; no stethoscope is required

blood pressure the pressure of blood as it presses against arterial walls

brachial artery pulse point located on each side of the upper arm on the medial aspect superior to the antecubital fossa

bradycardia when the heart rate (HR) is lower than the accepted norm of 60 beats per minute (bpm)

carotid artery pulse point located on each side of the neck lateral to and above the trachea

conduction a mechanism of heat transfer in which the skin encounters a cooler object, thus lowering its temperature

convection a mechanism of heat transfer in which cooler air surrounds the body to cool it down

diastolic blood pressure represents the arterial pressure of blood during ventricular relaxation, or diastole

doppler blood pressure blood pressure taken using a Doppler machine
doppler ultrasound device a handheld ultrasound tool that allows the examiner to hear the whooshing sound of the pulse
dorsalis pedis artery pulse point located roughly atop both feet
evaporation the transfer of heat through dissipation of sweat from the skin, thus cooling the body
expiration the act of exhalation or breathing out
external respiration the act of breathing in oxygen and breathing out carbon dioxide
febrile with fever
femoral artery pulse point located in the groin
heart rate the number of times the heart beats in one minute
homeostasis the process by which the human body maintains balance by adjusting to internal and external stimuli
hypertension elevated blood pressure readings of 130/80 mm Hg or higher
hyperthermia a condition that occurs when the core body temperature is more than 105.8°F (41°C)
hypotension low blood pressure readings less than 90/60 mm Hg
hypothermia a condition that occurs when the core body temperature is less than 95°F (35°C)
inspiration the act of inhalation or breathing in
internal respiration the exchange of oxygen and carbon dioxide in the lungs and the cells
Korotkoff pulse sound heard when obtaining a manual blood pressure
left ventricular assist device a type of cardiovascular device that supports heart function by stimulating the left ventricle to beat
manual blood pressure blood pressure reading taken using a sphygmomanometer and a stethoscope
mean arterial pressure (MAP) represents the "average" pressure of blood in the arteries, that is, the average force driving blood into vessels that serve the tissues
normothermia the targeted range for normal temperature
orthostatic hypotension a drop in blood pressure of at least 20 mm Hg systolic or 10 mm Hg diastolic within three minutes when moving from a lying down (supine) or seated position to a standing (upright) position
oxygen saturation measurement of the arterial oxyhemoglobin saturation (SpO_2) of arterial blood
palpation feeling with hands or fingers
popliteal artery pulse point located behind both knees
posterior tibial artery pulse point located posterior to the medial aspect of the ankle
pulse the palpable way to assess the brief pressure increase in the arteries causing them to temporarily expand as the left ventricle pumps blood through them
pulse equality a comparison of the pulse forces on both sides of the body
pulse force the strength of the pulsation felt on palpation
pulse oximeter a machine utilized to measure the oxygen saturation of blood
pulse point where the artery is close to the surface
pulse pressure the difference between systolic pressure and diastolic pressure
pulse rate counted with the first beat felt by your fingers as "One." It is considered best practice to assess a patient's pulse for a full sixty seconds, especially if there is an irregularity to the rhythm
pyrexia fever; a state outside of normal body thermoregulation where the core temperature is greater than 100.4°F (38°C)
radial artery pulse point located at each wrist below the base of the thumb
radiation heat from the body moving to cooler air, thus cooling the body
respiration the action of breathing, including inhalation and exhalation
respiratory acidosis having a blood pH less than 7.35 with a concurrent increase in carbon dioxide (CO_2)
respiratory alkalosis a systemic acid-base disorder that is caused by a reduction in carbon dioxide and a pH greater than 7.45
sphygmomanometer manual blood pressure cuff
systolic blood pressure reflects the arterial pressure resulting from the ejection of blood during ventricular contraction, or systole
tachycardia heart rate faster than 100 beats per minute
thermoregulation the automatic regulation of temperature that is carried out by the hypothalamus
vital sign five key metrics of homeostasis—temperature, pulse (heart rate), blood pressure, respirations, and

oxygen saturation—that are used by nurses and other members of the medical profession to ascertain a patient's current physical status

white coat hypertension sometimes called white coat syndrome; elevated blood pressure that results from a person's conscious or unconscious fear and anxiety at being at the doctor's office or in the presence of healthcare personnel

Assessments

Review Questions

1. The self-regulation of vital signs such as heart rate and blood pressure is an example of the body's attempts to maintain its stability, also known as which of the following?
   a. homeopathy
   b. homeostasis
   c. naturopathy
   d. heterogeneity

2. It is a hot summer day, and Christina is working in the emergency department. She has admitted a 24-year-old patient with dehydration—their lips are dry and cracked, and they are lethargic and complaining of dizziness. Which of the following heart rates would Christina *most likely* expect from this patient?
   a. 45 bpm
   b. 85 bpm
   c. 99 bpm
   d. 135 bpm

3. A nurse takes an adult patient's oral temperature and notes it is 99°F (37.2°C). What term would the nurse use to report this temperature?
   a. afebrile
   b. hyperthermic
   c. febrile
   d. hypothermic

4. Adam is checking the oxygen saturation (SpO_2) of a patient with asthma and notes it is 88 percent on room air. What should Adam do *first*?
   a. Recheck the SpO_2 in an hour.
   b. Record the oxygen reading in the chart.
   c. Check the patient's blood pressure.
   d. Report the SpO_2 to the primary care provider.

5. What is the most accurate description of blood pressure?
   a. Blood pressure measures the force of blood through the body.
   b. Blood pressure measures the force of the blood going into the heart.
   c. Blood pressure measures the force of blood against the arerial walls.
   d. Blood pressure measures the force of blood against the venous and arterial walls.

6. Tony's 38-year-old patient says he is anxious and hates being at the doctor. Which respiratory rate would Tony expect to find upon assessing the patient's vital signs?
   a. 37 bpm
   b. 25 bpm
   c. 15 bpm
   d. 5 bpm

7. Sarah works on an inpatient medical unit and is taking her 35-year-old patient's blood pressure. She notes that it is lower than usual at 88/56, when usually it is 110/70. The patient has no complaints, they are sitting up in their chair watching TV. What should Sarah do *first*?

a. Check the other vital signs and chart them accordingly.
b. Give the patient some juice.
c. Recheck the blood pressure and report the findings to the provider.
d. Call for emergency assistance.

8. Jose is coming on shift and receives in report that one of his patients has been running a 101°F fever. He goes into the room to obtain vital signs and do his assessment, and he notes that his patient has just taken a sip of hot tea from a thermos his mother brought him. How long should Jose wait before taking an oral temperature?
a. five minutes
b. ten minutes
c. twenty minutes
d. thirty minutes

9. Xavier is working at an urgent care center, and he notes his patient's pulse rate is 155 bpm. The patient says they feel fine, though their "heart is racing a bit." What should Xavier do?
a. Report the pulse to the provider immediately.
b. Call for emergency assistance.
c. Chart the vital sign accordingly.
d. Recheck the pulse in ten minutes.

10. What is the most accurate way to measure a patient's respirations?
a. Inform the patient that you are taking their respirations.
b. Tell the patient you are taking their pulse, and then count their respirations for thirty seconds before counting their pulse for thirty seconds.
c. Ask the patient if you can take their blood pressure, and count their respirations as you take their pressure.
d. Count the respirations as you take the patient's temperature.

11. What statement demonstrates a lack of understanding of how an oxygen saturation probe works?
a. I should ensure the patient's hands are warm before placing the probe.
b. Older adults and people with diabetes may not have the best circulation in their hands, so measuring their O_2 saturation can be difficult.
c. I should make sure that the finger I place the O_2 saturation probe on has nail polish on it to ensure a clear reading.
d. Pulse oximeters give a rapid estimation of peripheral oxygen saturation.

12. Minh is educating her patient on the importance of monitoring his blood pressure at home. What statement by Minh's patient indicates his understanding of taking his blood pressure?
a. "I should take my blood pressure in the evening before I go to bed."
b. "I should take my blood pressure lying in bed, so it is lower."
c. "When taking my blood pressure, I should sit with my feet on the ground, and my legs should not be crossed."
d. "I can take my blood pressure any time during the day as long as I am calm."

13. What is *not* a good example of why a patient should self-monitor their vital signs at home?
a. The patient has had high blood pressure at the doctor's office and the provider is trying to rule out "white coat syndrome."
b. The patient has started a new heart medication, and the doctor wants to ensure it is working well for the patient.
c. A side effect of a medication the patient has started can be fevers.
d. The patient wants to see if their hypertension is "getting worse" so they can adjust their own medications accordingly.

14. Alexandra has just been taught by her nurse how to take her own blood pressure. What statement by Alexandra indicates that she *does not* understand what her blood pressure numbers mean?
    a. "If the top number of my blood pressure reading is over 150, I should not take my blood pressure medication and call the doctor's office."
    b. "A good blood pressure is between 110 and 120 over 60 to 80."
    c. "If I feel dizzy and lightheaded after taking my blood pressure medication, I should call the doctor's office immediately."
    d. "Having high blood pressure means my heart is working very hard, and that is bad for my heart and my blood vessels."

15. Lucy's patient has been newly diagnosed with hypertension, and she is developing a collaborative plan with him to help him adhere to his new diet and medication regimen. When planning teaching for this patient, what is the first important learning goal?
    a. The patient will verbalize understanding of the plan.
    b. The patient will articulate the best way they like to learn new material.
    c. The patient will demonstrate understanding of their new medication and its side effects.
    d. The patient will describe the benefits of adhering to their new low-sodium diet.

16. What statement indicates patient understanding of external factors that can influence vital signs?
    a. "Drinking coffee before I take my vital signs will likely elevate my heart rate and blood pressure."
    b. "I should wait ten minutes after eating something to take my oral temperature."
    c. "My blood pressure is highest in the morning when I wake up so I should take it in the evening."
    d. "Being worried or anxious will increase my heart rate and lower my blood pressure."

Check Your Understanding Questions

1. Name five factors that can affect a patient's heart rate.
2. Why would you expect a patient with a MAP of 50 mm Hg to have weak or absent pulses in the extremities?
3. In your own words, explain the relationship between systole and diastole.
4. What do you do if your patient with a history of COPD has a SpO_2 of 90 percent on room air?
5. Sam's patient has called the doctor's office in a panic because his blood pressure is 200/110. What should Sam do?

Reflection Questions

1. When is a variation in blood pressure from 110/70 to 145/90 a normal or expected variation, and when is it something to be concerned about?
2. Why does the patient's age and developmental stage matter when taking their temperature?
3. Why is it important to ask patients how they like to learn before beginning to teach them about self-monitoring their vital signs?

What Should the Nurse Do?

1. Charlie is a nurse in the emergency department (ED), and his admission just arrived. Jacob has housing insecurity and is well-known to the ED and was brought in by the police for altered mental status. Nursing staff were able to get vital signs monitoring equipment on Jacob, but now he is more agitated and will not let anyone near him. From a distance, Charlie can see that Jacob's face is flushed, and he appears sweaty and anxious. His vital signs are as follows: BP 160/85 mm Hg, temperature 102.3°F (39.1°C), heart rate 110, respirations 25, and oxygen saturation 96 percent on room air. Which of these vital signs should be most concerning to Charlie? What can he do to obtain additional information?
2. Laurel is obtaining vital signs on a 75-year-old patient during a wellness visit at the doctor's office. She notices that the oxygen saturation probe is reading the patient's SpO_2 level as 87 percent. Assessing the

patient, Laurel notes her patient appears comfortable and in no distress; the patient had just been telling Laurel about her granddaughter. What possible reasons can there be for this SpO_2 reading? What should Laurel do?

3. Markus enters the room to take his patient's vital signs and notices that the patient's family is visiting and that they have brought him his favorite chicken noodle soup from home. The patient is laughing and talking with his family. What should Markus consider when taking his patient's vital signs?
4. Ahmad has orders to take a series of blood pressures on his patient while lying in bed, sitting at the side of the bed, and standing next to the bed. The doctors are checking to see if the patient's blood pressure drops as they go from a lying, sitting, to standing position, called orthostatic pressures. When giving directions to his patient, what should Ahmad be mindful of in order to get the best possible readings? What safety considerations should Ahmad keep in mind when performing this assessment?
5. Aly is checking her patient's dorsalis pedis pulse and cannot find it either by palpation or with a Doppler. What should she do?
6. Manuela's patient is being sent home with a heart monitor and new medication to address a new diagnosis of hypertension and tachycardia. The patient is being directed to record their blood pressure and heart rate once a day. What are some of the important teaching points that Manuela should include in her discharge teaching for this patient?
7. Lucy's patient has been educated about the importance of taking their blood pressure medication. At their follow-up appointment, however, the patient states that they have not been taking their blood pressure medication because they "took it for a week" and when they checked their pressure, "it was fine." What are some questions that Lucy can ask her patient? What can she do to educate them further about their hypertension and blood pressure medication?

Competency-Based Assessments

1. In pairs, identify each of the following pulses and check your partner's pulse: carotid, radial, brachial, popliteal, posterior tibial, dorsalis pedis.
2. In pairs, select an appropriately sized blood pressure cuff and demonstrate the proper application of the cuff to your partner's arm. Explain the importance of selecting the correctly sized cuff for a patient.
3. In pairs, demonstrate the proper technique for obtaining a tympanic temperature.
4. Explain how an oxygen probe monitors your oxygen saturation.
5. Demonstrate proper technique for obtaining a patient's respiratory rate.

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CHAPTER 8
Admission, Transfer, and Discharge

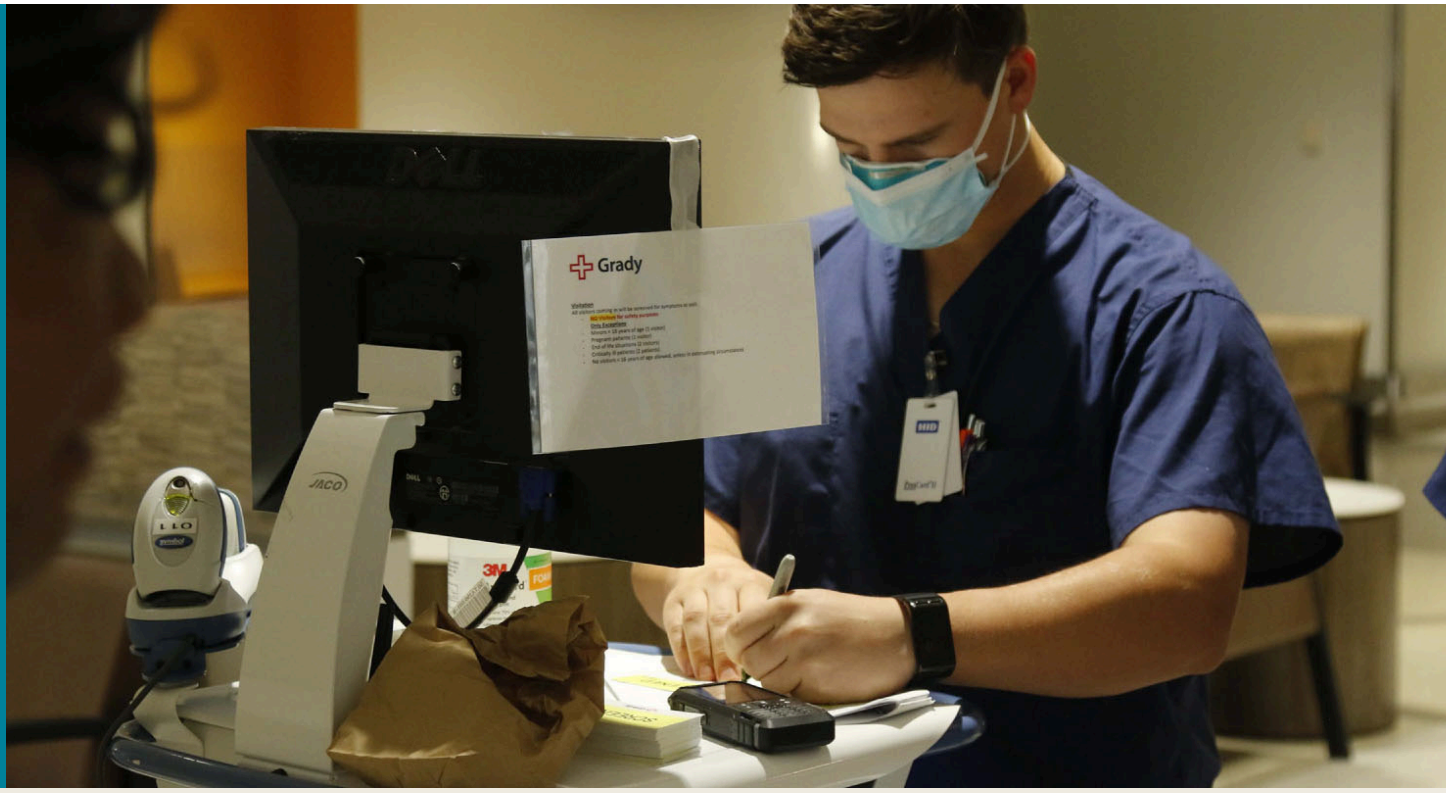


FIGURE 8.1 Discharge planning is initiated at the time of admission and continues throughout a patient's hospital stay. The admission process requires that the healthcare team discuss and agree upon goals for discharge. (credit: "Assisting Grady Hospital" by U.S. Army National Guard Sergeant Jeron Walker/Flickr, Public Domain)

CHAPTER OUTLINE

8.1 Patient Admission
8.2 Patient Transfer
8.3 Patient Discharge

INTRODUCTION Admission, transfer, and discharge are key events in the healthcare delivery process, and the nurse is most often the frontline healthcare provider in all three of these events. Admission oversees the patient's entry into the healthcare system. The information learned and rapport developed upon admission are vital to planning a patient's course of treatment. Transferring a patient involves accurate communication of the patient's status between healthcare providers. The nurse must be concise and accurate when exchanging information. The patient exits the system upon discharge. It is crucial for the discharging nurse to explain the patient's medications and follow-up plan, providing further education if necessary. Research shows that the effectiveness of the discharge process increases patient satisfaction and improves quality of life for patients and their families (Carroll, 2007). There is a large potential for serious errors and patient harm to occur due to mistakes made during admission, transfer, and discharge, so it is imperative that these processes are done conscientiously and thoroughly.

8.1 Patient Admission

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify different types of patient admissions
- Describe nursing preparation in the admission process
- Recognize how to establish an effective nurse–patient relationship during the admission process

There are many situations that require admission to a healthcare facility. These situations can range from a calm and planned procedure to a traumatic and life-threatening emergency. Nurses play a vital role as the initial point of entry into the healthcare system because they are responsible for the initial assessment, evaluation, and documentation of a patient's healthcare status, needs, and concerns. The information gained through the admission process sets the stage for the patient's course of care. It is the role of the admitting nurse to use clinical judgment skills and strong communication techniques to obtain necessary information about the patient and their condition (Figure 8.2). Therefore, it is crucial that the nurse conducting the admission is organized and thorough.

FIGURE 8.2 Nurses are often the first interaction patients experience with the healthcare system, and it is a nurse's responsibility to begin the admission process. (credit: Untitled by "RDNE Stock project"/Pexels, Public Domain)

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 1

A 65-year-old patient presents to the emergency room with reports of severe chest pain radiating to the left arm and new onset shortness of breath. Patient appears pale, diaphoretic, and visibly anxious.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, coronary artery disease **Family history:** Mother deceased, father alive with severe dementia; two healthy sons in their early 40s. **Social history**: Previous divorce, married to current husband, George, for twenty years. **Allergies:** Latex **Current medications:** • Aspirin 81 mg PO once daily • Metformin 500 mg PO twice daily • Lisinopril 10 mg PO once daily • Atorvastatin 30 mg PO once daily
Flow Chart	**0815: Assessment** Blood pressure: 160/100 mm Hg Heart rate: 110 beats/minute Respiratory rate: 24 breaths/minute Temperature: 98.6°F (37°C) Oxygen saturation: 92 percent on room air Pain: 7/10 (chest pain that is "tight")
Provider's Orders	**0817: New orders** Page cardiology team for urgent consult. Administer 325 mg aspirin orally. Conduct 12-lead ECG stat. Administer supplemental oxygen to maintain saturation > 94 percent. Establish IV access and administer IV nitroglycerin per protocol. Conduct cardiology lab panel and HbA1c. Admit patient.

1. Recognize cues: What cues are present that confirm the need for admitting this patient to the hospital?
2. Analyze cues: Based on the recognized cues and provider orders, what do you think is going on with the patient?

Types of Admissions

There are different types of admissions to ensure that patients are routed to the proper level of care. It is important that patients go to the right point of entry to the healthcare system—for example, a doctor's appointment, an urgent care clinic, or an emergency room visit—to receive the best and most efficient medical treatment required. Admission placements can change quickly; for example, an admission to an ambulatory clinic for monitoring during administration of a medication can become emergent if the patient's vitals become unstable. Situations such as this are not uncommon. With the ongoing evolution of medical care and the growing complexity of patient illnesses and comorbidities, the role of nursing in the admission process is vital to detecting these changes quickly. Nurses must understand the different types of admissions, assess their patients' situations accurately, and advocate for escalation to a higher level of care when necessary.

Acute Care Admissions

Acute care admissions begin in hospital settings, most often in the emergency department. The **acute care** is for patients who require inpatient monitoring and medical care under professionally trained healthcare providers. Their medical situation has been assessed as one that could potentially endanger their life if the problem is left unaddressed (Table 8.1). Some examples include difficulty breathing, chest pain, a fever over 103°F (39.4°C) that is unrelieved by over-the-counter medications, uncontrolled bleeding, or an injury that resulted in a loss of consciousness. Symptoms that are less likely to require an acute care admission include chronic headaches, a laceration requiring stitches, a severe cough, or abdominal pain with vomiting. In many cases, however, symptoms

such as these may also warrant an acute care admission; many other elements such as the patient's medical history, current medications, and vital signs all factor into an acute care evaluation.

Mild Symptoms (Nonacute)	Severe Symptoms (Acute)
Hives (red, swollen, itchy areas on the skin)	Loss of consciousness
Skin rash (persistent, dry, itchy skin)	Shortness of breath or wheezing
Redness of the skin or around the eyes	Swelling of the lips, tongue, and/or throat
Itchy mouth or ears	Trouble swallowing
Diarrhea	Bluish discoloration of the skin
Stomach pain	Drop in blood pressure
Nasal congestion or sneezing	Chest pain
Slight, dry cough	Weak pulse
Odd taste in mouth	

TABLE 8.1 **Mild Symptoms (Nonacute) Versus Severe Symptoms (Acute)**

Emergency department nurses that assess patients for acute care admission employ a prioritization system called triage. When a nurse evaluates patients according to the severity of their symptoms and ensures that those with the most serious and potentially life-threatening symptoms are seen first it is called **triage**. If a nurse has an asthmatic patient with mild wheezing but stable vitals and a patient with mild chest pain and very unstable vitals, the nurse will see the patient with the chest pain first. The admission process also involves additional nursing responsibilities including completing an admission history, performing a physical assessment, completing a medication reconciliation, developing the care plan, and documenting a belonging inventory.

PATIENT CONVERSATIONS

Triage in the Emergency Department: Who Is the Priority?

Scenario: It is a busy night in the Emergency Department (ED) and Jacqui is the triage nurse. Two patients come in, one after the other, and are directed to the waiting area near security. One patient is wheezing and holding an inhaler. The other is pale and sweaty and looks distressed. Jacqui approaches the wheezing patient.

Nurse: Hi there. My name is Jacqui and I'm the nurse that is here to assess you. What is your name? What brings you in tonight?

Patient 1: My name is Leah, and I can't breathe. I have asthma and my inhaler isn't working. I need help now.

Nurse: It's okay, Leah, you are in the right place, try to remain calm. I'm going to put this monitoring equipment on you, and it is going to measure your heart rate, blood pressure, and level of oxygen. While the machine is doing this, I'm going to talk to this other patient, and I'll be right back.

[Then nurse brings a second set of monitoring equipment over and approaches the second patient.]

Nurse: Hi, my name is Jacqui and I'm your nurse right now. Are you feeling okay? You look pale; are you in pain?

[While introducing herself, the nurse places the monitoring equipment on the patient.]

Patient 2: I don't know how I feel, my chest aches and I'm sweaty. I feel like something is very wrong and I'm scared so I came here.

Nurse: What is your name? On a scale of 1 to 10, how badly does your chest hurt? 1 is no pain at all, and 10 is the worst pain you've ever been in.

Patient 2: My name is Paul, and my pain is like a 7 or an 8. My chest aches a lot and my heart feels funny and I . . . I just don't feel good at all.

[The nurse looks at Paul's vitals and sees he is severely hypertensive (186/108), tachycardic (143), and his oxygen saturation is 86 percent on room air. She glances at Leah's vitals and sees her blood pressure (132/90) and heart

rate (118) are slightly elevated, and her oxygen saturation is 93 percent on room air. Jacqui knows Paul's symptoms are more serious, and immediately calls for assistance on the hospital phone. Two nurses come into the ED; one is pushing a wheelchair.]

Nurse: Paul, I'm glad you came in. We need to take you into the ED immediately for testing and further monitoring. We will take you in this wheelchair to your room, and the doctor will be in shortly.

[The nurse looks over at Leah.]

Nurse: Hey Leah, I will be right back. This nurse will be keeping an eye on you, and someone will come talk to you soon, okay?

[The nurse helps Paul into the wheelchair and escorts him back.]

Scenario follow-up: Paul is exhibiting the classic signs of a potential myocardial infarction, or heart attack. His vitals are not normal and are unstable enough to quickly decline into a life-threatening emergency. Leah's symptoms are also not normal and need to be addressed, but at this time Paul's symptoms have the greater potential to decline into an emergency. Jacqui triages her patients and prioritizes Paul to be seen before Leah.

Observational versus Inpatient Admissions

Observational admissions are typically one- or two-night stays where the patient needs to be closely monitored by a professional for a limited amount of time. Situations for observational admission could include vital signs monitoring during administration of a medication that can have severe side effects (such as chemotherapy) or potential for an allergic reaction (such as intravenous immunoglobulins), monitoring after setting a broken bone, monitoring bleeding from a severe laceration that has been sutured, or monitoring after a procedure where the patient was sedated. Sometimes patients will be kept in observation awaiting diagnostic test results, such as computed tomography (CT) or magnetic resonance imaging (MRI) scans.

Inpatient admissions are for problems that require more than just observation. Examples may include abdominal pain of unknown origin with concurrent changes in vital signs, or intravenous antibiotic administration for a serious bacterial infection. These patients have the potential to decline to a life-threatening level if not monitored by a healthcare professional.

Unplanned Admissions

Many admissions to the hospital are unplanned and are usually an emergency, such as a motor vehicle accident, trauma, or a collapse in the field due to a myocardial infarction (heart attack). Strokes are unplanned admissions that require rapid assessment and intervention; many hospitals have a stroke protocol that streamlines their admission into the system and often dictates what treatments must begin immediately (Figure 8.3).

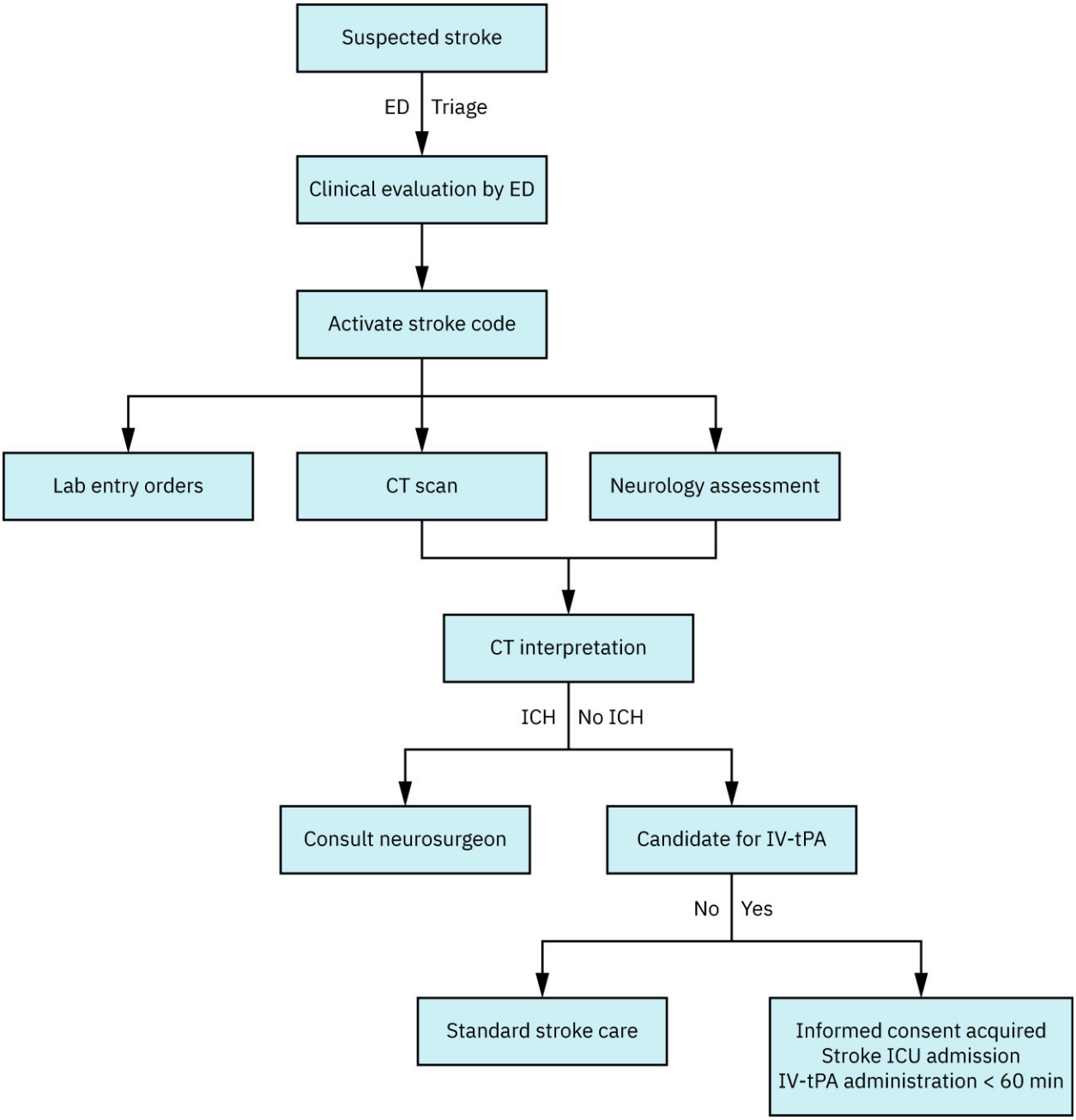


FIGURE 8.3 In an emergency, time is critical. Having available protocols or decision trees, such as this example protocol, helps clinicians rapidly obtain the correct tests and medications for their patients. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Exacerbation of chronic conditions such as asthma or heart failure can also result in an unplanned admission. A patient may be at a clinic for a routine appointment but on assessment their vitals are found to be unstable, at which time the clinic staff will call an ambulance or 911. Generally, unplanned admissions are routed through the ED of a hospital. Sometimes unplanned admissions may be transferred from other healthcare facilities, such as a rehab facility or nursing home, directly to an inpatient unit. Admitting an unplanned patient requires rapid assessment and action on the part of the entire healthcare team.

Planned Admissions

Of course, not all entries into the hospital system are emergent. One example of a planned admission is childbirth, which includes a mother in labor, a scheduled cesarean section, or an induction. Many planned admissions are prearranged surgeries, such as hip and knee replacements (arthroplasties). A patient may work with their cardiologist and cardiac surgeon to receive a planned coronary artery bypass graft (CABG) or to have a stent placed

to relieve vessel blockage. These surgeries are planned because they are nonurgent at the time but can become life-threatening in the future. Sometimes patients can even be sent as an admission direct from a doctor's appointment because their provider deemed their admission necessary, such as a patient with heart failure who is fluid overloaded and needs IV diuretic therapy. Because these admissions are planned, the patient's entry into the system is generally organized and structured.

Thirty-Day Readmissions

Admissions to the hospital that happen within thirty days of a prior admission are monitored by the Centers for Medicare and Medicaid Services (CMS). Only certain conditions are monitored under this thirty-day rule and include heart failure, recent CABG surgery, knee/hip surgery, acute myocardial infarction, pneumonia, or chronic obstructive pulmonary disease (COPD). This thirty-day measure was started to ensure that patients with these conditions were not being readmitted due to careless or poorly administered care.

Hospital Readmissions Reduction Program (HRRP)

By monitoring readmissions through the Hospital Readmissions Reduction Program (HRRP) and giving hospitals financial incentives to prevent readmissions for these conditions, only patients who genuinely require further hospitalization are readmitted, thus improving the overall quality of care (Centers for Medicare and Medicaid [CMS], 2023a). HRRP, a program run by CMS, manages hospital reimbursements based on the number of readmissions reported. Hospitals are reviewed according to their performance on these metrics and reimbursement is determined accordingly. If a facility has high readmission rates for patients with conditions monitored under this program, then CMS may not reimburse the hospital for care provided. Linking reimbursements to readmission rates encourages healthcare facilities to be thorough and efficient when admitting and treating their patients and planning their discharge care.

Hospital Value-Based Purchasing (VBP) Programs

Similar to HRRP, hospital value-based purchasing (VBP) programs seek to reduce readmissions and improve patient care through financial incentives at the hospital. VBP functions by basing Medicare payments on the quality of the care provided instead of the quantity (CMS, 2023b).

VBP in hospitals begins with their Inpatient Quality Reporting (IQR) measures. To qualify for VBP, hospitals must submit data to CMS that show they are adhering to the measures required to keep patients safe. Each measure is scored, weighted, and then generated as a Total Performance Score (TPS). These scores are then used by CMS to determine payment adjustments for that hospital. The hospital receives the payment amount, and the cycle of incentivized VBP begins again (Figure 8.4).

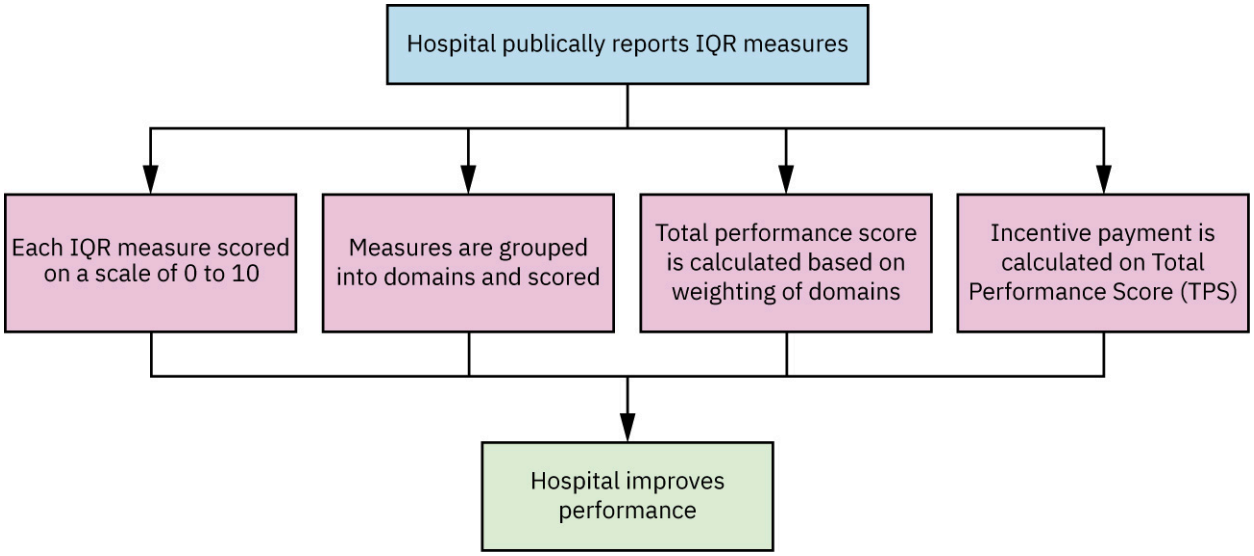


FIGURE 8.4 Hospital value-based purchasing (VBP) programs seek to reduce readmissions and improve patient care through financial encouragement at the hospital. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Ambulatory Care Admissions

The **ambulatory care** is care given in outpatient settings, which includes doctor's offices, clinics, and outpatient

surgery centers. Nurses admitting patients in the ambulatory setting generally obtain a set of vitals and conduct a short assessment. If there are no complications, the patient goes home after the visit or procedure is completed. Examples of outpatient surgery include a tumor biopsy, laser eye surgery, or cataract surgery. Sometimes patients need to be admitted from these settings to the acute care setting, perhaps for a complication related to the surgical procedure or for an exacerbation of a chronic problem during the procedure, such as asthma, diabetes, heart failure, or hypertension. Admissions from these settings are often serious or emergent, and it is important to ensure that information to the admitting nurse is conveyed clearly and all details are given. Reports that are organized and structured help ensure the patient's safe transition to a higher level of care.

LINK TO LEARNING

The Agency for Healthcare Research and Quality (AHRQ) has a toolkit for ambulatory settings (https://openstax.org/r/77AmbulaToolkit) to ensure there are no gaps in patient care during this transition. The toolkit includes a rationale, a short step-by-step guide to implement these tools, an assessment template, a PowerPoint presentation for healthcare team member training, and a checklist for patients to empower themselves when receiving care in an ambulatory setting (Agency for Healthcare Research and Quality, 2017b). These tools are comprehensive enough to offer a more consistent and standardized flow for patient safety in ambulatory care while still being customizable for a facility's individual needs.

National Patient Safety Goals for Ambulatory Care

The Agency for Healthcare Research and Quality (AHRQ) has noted that efforts to maintain patient safety have mainly been focused on acute care and inpatient settings, and that ambulatory settings provide "unique" challenges to patient safety (Agency for Healthcare Research and Quality, 2019). The Joint Commission (TJC), a United States healthcare regulatory nonprofit, ensures continuous quality improvement and excellence in patient care. TJC partnered with AHRQ to create national patient safety goals for ambulatory care (Table 8.2). These standards ensure patient safety when transitioning from ambulatory to acute care (TJC, 2023).

Goal	Guidelines to Goal
Identify patients correctly.	Use at least two ways to identify patients, ideally name and date of birth.
Use medicines safely.	Label all medications without a label before a procedure. Be cautious with patients on blood thinners (such as heparin or warfarin). Reconcile medications as best as possible with the patient and communicate information clearly and completely. Ensure the patient is educated on their medications
Prevent infection.	Use guidelines from the Centers for Disease Control and Prevention (CDC) for handwashing.
Prevent mistakes in surgery.	Ensure correct surgery is being done on the correct patient and at the correct place on the patient's body. Mark the correct place where the surgery is to be done. Pause before the surgery and do a final check to ensure no mistakes are being made.

TABLE 8.2 **Ambulatory Health Care National Patient Safety Goals (2023)**

These goals are very similar to those that have been and are still used in inpatient and acute care settings. The application of these goals to an ambulatory care setting raises the standards of patient care throughout healthcare facilities nationwide, ensuring that patient safety is at the forefront of all patient care at all points of admission into the system.

LINK TO LEARNING

The National Patient Safety Goals for hospital admissions (https://openstax.org/r/77HospSafeGoals) are described on The Joint Commission's website.

Long-Term Care Admissions

Patients with chronic health problems who no longer require inpatient acute care but cannot be managed at home are often admitted to facilities for continuing care. A **long-term acute care (LTAC) facility** is very similar to acute care facilities in that it will take on acute patient tasks such as ventilator weaning, wound care, and/or intravenous (IV) antibiotics. The difference between LTAC and acute care facilities is that an LTAC facility is approved for longer periods of stay. LTAC facilities care for patients with acute care problems that require long-term care; examples of these admissions may include tracheostomy care, ventilator weaning, feeding tube maintenance, or patients with long-term wound care needs. A **long-term care (LTC) facility** and a **nursing home**, on the other hand, are not acute care facilities. Rather, they are permanent residences that provide medical assistance and care to their residents, just not at the acute care level. The main difference between an LTC and an LTAC facility is the length of stay. An LTC facility is approved for a longer admission time; LTC facilities are licensed for patients to stay for approximately thirty to ninety days compared to an LTAC facility that has a maximum reimbursable stay of twelve days or less. As with any other medical admission, it is important that patients are routed to the appropriate facility for their level of care. Other types of long-term admissions include home health care and assisted living, each with individual state-mandated guidelines.

Federal Guidelines for Nursing Home Admissions

CMS and the U.S. Department of Health and Human Services (HHS) offer guidelines for admission to nursing homes and other types of LTC facilities. These guidelines help prevent unnecessary admissions to nursing homes and ensure that people who can be cared for safely in their own home can remain there. To this end, Medicare has federal guidelines that Medicare-certified nursing facilities must use when assessing patients for admission. A form (generally state-specific) outlines a Level 1 and Level 2 Preadmission Screening and Resident Review (PASRR) assessment. The overall goal of these guidelines is to ensure patient safety while still meeting patients' personal goals and needs.

LINK TO LEARNING

The CMS website provides guidelines and documents about nursing home (https://openstax.org/r/77NursHomeGuide) admissions and operations. There are also links to guidelines governing various other types of LTC facilities.

Nursing Preparation in the Admission Process

What an admitting nurse assesses and learns upon admission is important to all members of the healthcare team in planning the patient's course of treatment. It is also an opportunity to develop a rapport with the patient and their family. There is a lot to learn about a patient in the first stages of caring for them, so it is important to be organized in the admission process.

Many hospitals have an admission template in the electronic health record (EHR), which guides the questions and assessments needed when admitting a patient. During the initial stages of admission, the nurse may get a report from an emergency medical technician (EMT) or a nurse from the ambulatory facility. It is important to be prepared and have an organized set of questions that cover all the necessary information. Using a report sheet can be helpful; some hospitals have them predesigned (Figure 8.5).

Nurse Report

Room _____ Date _____

Patient	Age	Sex	HD:	LOS:	Admitted
Diagnosis	Procedure				
Comorbid conditions/Hx	Code status			Allergies	

Neuro AO*3 2 1 Confused	Cards SR ST SB AF Paced EF% VTE
Resp_LPM NC RA CPAP	Gt Cont/Incont
GU Cont/Incont Foley	Skin wound
Drain devices	Tests Imaging

Discharge Plan	Teaching/Learning
Variance to Discharge Plan : Barrier	Consults
Resolution Consults	Special needs

FIGURE 8.5 Nurses use an admission report sheet to get an accurate report on their patient. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Regulatory Guidelines for Patient Admission

Guidelines from CMS exist regarding hospital inpatient admissions. CMS guidelines tie back into reimbursement for service. TJC and other regulatory agencies, such as HHS and the American Hospital Association (AHA), establish strict standards and guidelines for healthcare facilities and institutions. These organizations, along with CMS, are in place for patient safety, and hospitals found in violation can be severely fined. The TJC standard is that each patient's need for admission must be assessed by a registered nurse (RN). These guidelines ensure that patients are admitted to inpatient care under a commonly held standard of necessity. To understand the clinical decisions nurses make on important assessments, refer to a learning framework such as the Clinical Judgment Measurement Model (CJMM).

LINK TO LEARNING

The National Council of State Boards of Nursing (NCSBN) website discusses the Clinical Judgment Measurement Model (CJMM) (https://openstax.org/r/77NCSBNCJMM) framework for nursing students to learn clinical decision-making. Utilizing this framework provides measurable decision points for making reasoned clinical judgments. It takes what often seems like a subjective, experiential, and instinctive process and turns it into a defined learning format.

Preparing the Room

A key part of a successful admission is ensuring the room is stocked with all the necessary equipment. Ensure basic supplies are available—linens, pillows, a hospital bed. Check that vital sign and monitoring equipment are functioning and that all connecting cords and sensors are present. Ensure the call light is working. Have basic toiletries available for the patient. Depending on the patient's level of mobility, the nurse may want to have a walker, urinal, or bedside commode present.

Preparing a room for an admission also depends on the condition of the patient being received, such as critical versus stable. Consider a patient in heart failure being admitted from their doctor's office for shortness of breath. Because they are having difficulty breathing, ensure an oxygen hookup and tubing are available. If it seems likely that IV medications are going to be required, have IV pumps and tubing available, as well supplies to place additional IVs if necessary.

Also, consider the patient's mental status. If they are confused or at risk of a fall, place them in a room close to the nurse's station, apply bed alarms, and/or place nonskid pads on the floor. Preparing for an admission may also involve delegating, or assigning specific jobs or tasks to coworkers, especially if the patient is an acute admission.

Specialty Equipment

Sometimes special equipment is required for an admission; when receiving a report on a patient, it is important to ask if the patient has any specific needs. In a critical care unit, the nurse may need a ventilator or specialized oxygen equipment such as a high-flow nasal cannula (Figure 8.6). If the patient has specialized lines, such as arterial lines, a Swan-Ganz catheter, or an intra-aortic balloon pump (IABP), ensure the equipment they are coming with is compatible with the admitting hospital's equipment.

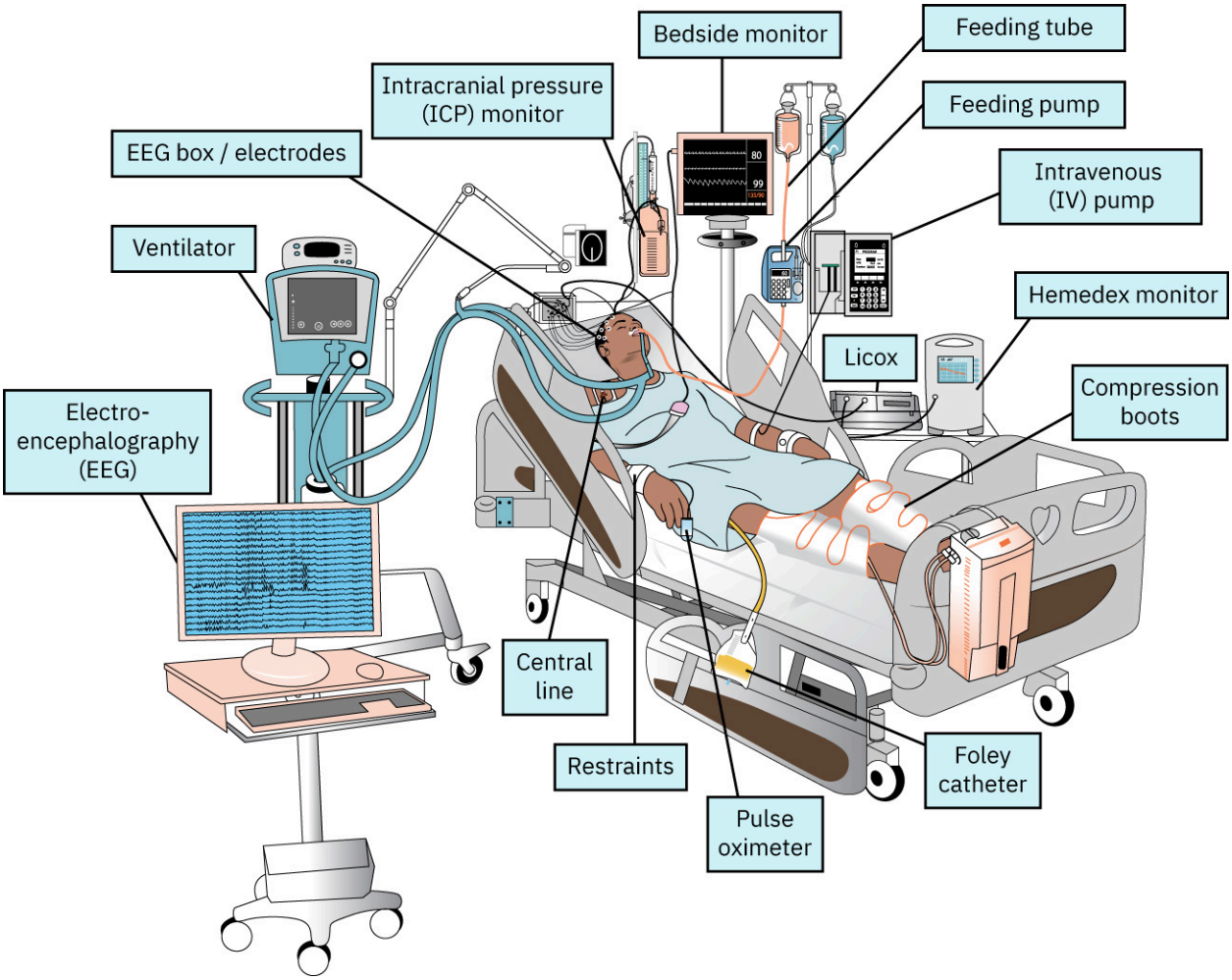


FIGURE 8.6 Nurses in intensive care units (ICUs) must learn to use a wide range of medical equipment to monitor critically ill patients. Often, specialized training and yearly continuing education are required to use these machines daily. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

It is good nursing practice to have the proper supplies and tools to convert the patient to the hospital's approved equipment available or have a backup on hand in case the equipment malfunctions. Does the patient need a bariatric bed? Even if one is not available until after the patient arrives, ordering one before the patient arrives reduces the time the patient has to be in the wrong-sized bed and minimizes the risk of skin injuries and breakdown.

Personal Preparation for Increased Workload

Admitting a patient on top of caring for current patients can be a difficult process for new nurses. Experience is the best teacher, and being well organized is essential. Think ahead:

- When is the patient arriving?
- Is the room set up with the necessary equipment?
- Is any special equipment necessary?
- Will you need additional help to move the patient?
- Am I caught up on tasks for my other patients?
- Will the family be accompanying the patient?

Review the tasks that must be done for current patients to ensure they are comfortable and that their needs are met before the admission arrives. Administer scheduled medications, if possible. Check that IV drips are sufficiently full. Obtain help from colleagues to monitor current patients while handling a new admission. Review what admission tasks can be delegated (such as weighing or bathing an admission) and notify the appropriate unit staff (such as the nurse's aide or patient care technician).

Preparing for Admissions Report

The nurse should have an organized and standardized report sheet prepared ahead of receiving report that can be clearly and quickly referenced for information about the patient. This also helps to ensure all relevant information is obtained from the nurse giving the report. Missing information can have negative repercussions on the unit and/or hospital, such as an unreported skin wound or decubitus ulcer. Skin issues such as these that are present on admission are treated differently with CMS from ones that develop while the patient is on the unit, and they can result in increased costs, decreased reimbursement, and/or the healthcare facility assuming liability for the injury.

It is also important to think through what the relevant questions and concerns are for the admission: Why is the patient being admitted? What medical conditions does the patient have, and what information does the nurse need about them? Asking the right questions during the report ensures the patient is safe for transport and that the nurse is well prepared for the admission. Standardized reports, such as an SBAR, are discussed in Chapter 2 Communication.

Informed and Voluntary Consent

Patients, their chosen decision-maker, or **power of attorney (POA)**, must consent to any procedures done while admitted to the hospital. A POA is a legally binding agreement that documents that the patient is giving the authority to manage personal matters (such as medical care, financial business, or property) to another person. When giving consent, the patient acknowledges what procedure they are going to have, what the benefit is, and what the potential risks and side effects are. This is informed consent, meaning that the patient is aware of the risks and benefits of the procedure and has accepted those risks and benefits. This includes major procedures such as surgery and minor ones such as invasive line placement or blood product administration. The **voluntary consent**, on the other hand, is simply agreeing to treatment. The distinction between the two is a fine one, but very important.

Generally, it is the role of the doctor, resident, or midlevel advanced practice provider (APP) to obtain consent, though nurses are often asked to witness consent being given. It is not the nurse's role to obtain consent, but the nurse can alert the doctor and ensure consent is obtained while the patient is still conscious, or while the patient's decision-maker or POA is present at bedside. Nurses must ensure that the patient and family understand what was discussed during the consent process. They can also ensure a qualified translator is present if the patient and the doctor do not speak the same language.

Preparing Interprofessional Team Members of Patient Admission

It is good practice, especially if the admission is emergent, to alert all members of the interprofessional team of a patient's arrival. Departments such as the cardiac catheterization lab, radiology, and/or perfusion may need to be notified. If the admission is an emergency, such as a stroke, the facility will have protocols in place to alert the necessary staff—hematology, neurosurgery, and radiology, to name a few. Depending on the patient's situation, other members of the interprofessional team may include nutritionists, physical therapists (PTs), occupational therapists (OTs), social workers, and discharge planners. Sometimes spiritual counselors, chaplains, or other therapists are involved as well. Ensure the unit clerk knows an admission is coming so they can enter the patient into the system, and make sure the charge nurse is updated. Pharmacy may also be alerted to an incoming admission, often if the patient has had a stroke and/or is critical enough to require rapid availability and administration of certain medications. It often falls to the nurse to alert all necessary team members to an admission, so be aware of the facility's resources and how to find them before the admission arrives.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Teamwork and Collaboration

Definition: Function effectively within nursing and interprofessional teams, fostering open communication, mutual respect, and shared decision-making to achieve quality patient care.

Skill: The nurse will:

- Demonstrate awareness of your own strengths and limitations as a team member, and communicate effectively within your own scope of practice.
- Clarify roles and accountabilities to ensure patient safety and an effective, efficient admission.

Knowledge: The nurse will:

- Demonstrate your own strengths, limitations, value, and knowledge when functioning as a team member.
- Describe scope, practice, and role of team members.

Attitude: The nurse will:

- Acknowledge your own potential to contribute as a functioning member of the team.
- Appreciate the importance of collaboration among team members.

Preparing for Optimal Patient Safety

Knowing a patient's level of mobility and function at home helps the nurse keep a patient safe while in the hospital. This is a key part of report and the admission process. If the patient is older, has a history of falling, and/or has impaired mobility and requires a walker or cane, ensure the patient understands they must call for assistance every time they need to get up, and reinforce this often if necessary. If the patient is confused due to dementia, Alzheimer disease, or **sundowning** (a phenomenon where adults [often older] become confused when the sun goes down [Canevelli et al., 2016]), consider utilizing a bed or chair alarm. These devices monitor the pressure of the patient's weight on its surface, and if that weight lessens or disappears, an alarm goes off. If the patient becomes increasingly confused, reorient them kindly and frequently.

Another good practice for patient safety is to review all orders placed by the provider for the patient's care. Is the patient to go for a procedure early in the morning and therefore has orders to not eat or drink anything? Have parameters for their vital signs been placed, indicating when to alert the provider if the patient's vitals cross them? Knowing these orders guides the care the nurse provides for the patient. For instance, the nurse may have to teach the patient about the importance of not eating or drinking before a procedure.

Once the patient is settled and aware of the current plan, ensure everything the patient needs is within reach before leaving the room: set up their bedside table with water and/or snacks if allowed, any personal equipment such as glasses, hearing aids, or a cup for dentures if necessary. Ask if they have a cell phone and want it near them, or if they would like it charged. Ensure the call light is within reach and that the patient knows how to use it. If available, place mats or padding on the floor. Ensure the room is clean and organized, and no excessive cords or wires are on the floor as potential hazards.

If the patient cannot speak or cannot communicate in words or sentences, some hospitals have communication boards with pictures and phrases to help patients who cannot articulate their needs (Figure 8.7). These boards generally are flat, plastic, or laminated sheets with pictures on them. Some have words, others can simply be facial expressions or pictures of things (a phone, chair, or toilet, for example). The patient can point to the picture or word-and-picture that expresses what they want, and the nurse will be able to respond accordingly.

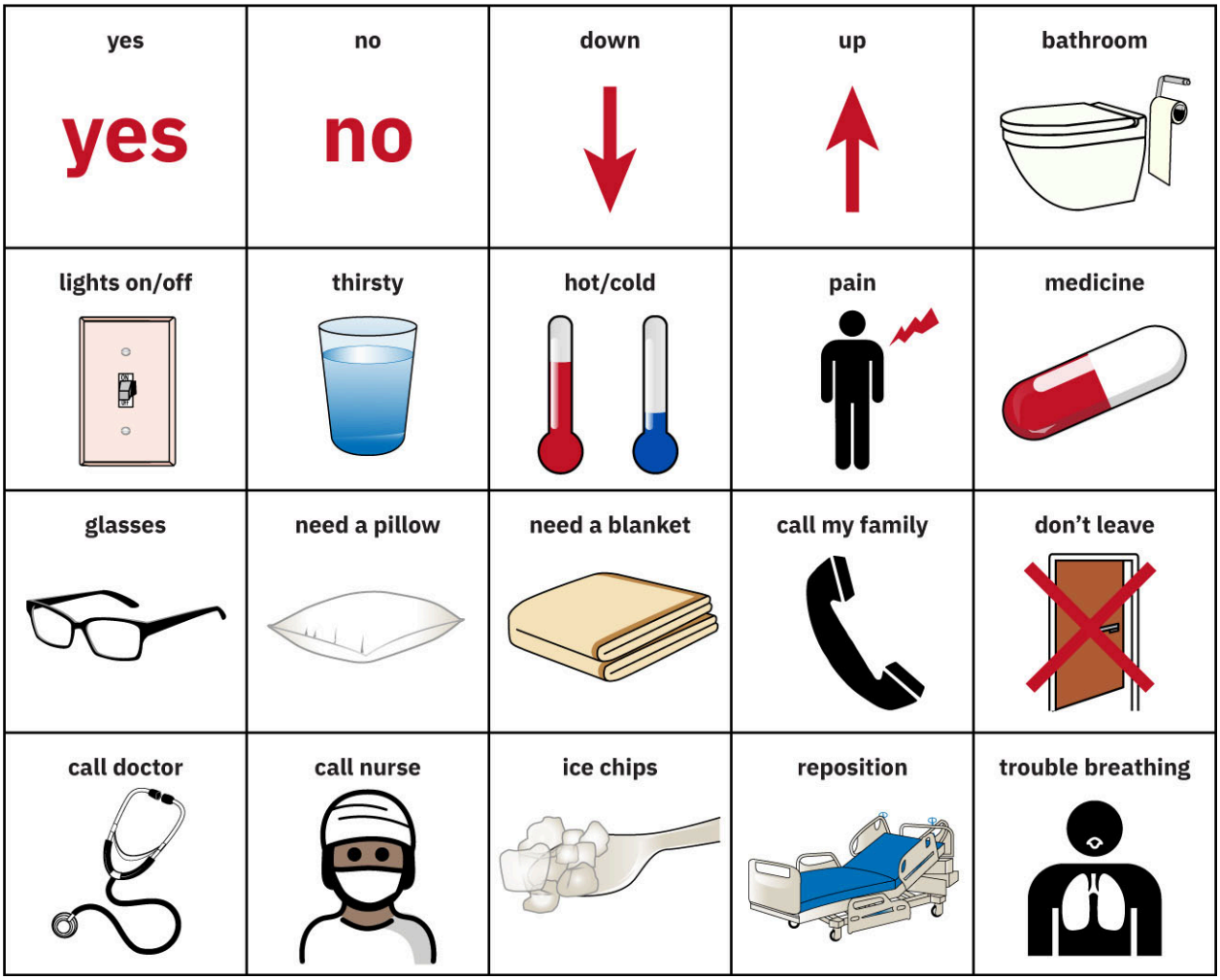


FIGURE 8.7 A communication board like this example can be used with patients who have difficulty conveying their needs. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

REAL RN STORIES

Keeping a Patient Safe

Nurse: Ann, RN
Clinical setting: Assisted living facility
Years in practice: 2
Facility location: Chicago, Illinois

When I was a relatively new nurse, I was caring for an older White female in her mid-70s who had been admitted from her assisted living facility for new onset atrial fibrillation. She was fully alert and oriented and had been so all day. She was really the nicest lady, so kind and friendly! We had a great day chatting about her grandchildren and great-grandchildren. Around 5:30 p.m., I went into the room with the patient's evening meds and found her sitting in her chair with a frown on her face and staring out the window. I asked her if she was okay and if anything was wrong. She kept staring out of the window, but snapped back sharply, "Do I look okay to you? Stupid girl. Go away."

I was so shocked; this was not the patient I had taken care of when I came on shift at 7 a.m. Instead of being kind and friendly, she was mean and withdrawn. I thought maybe she was sundowning, so I carefully began an assessment. I found that she was no longer oriented, she thought she was at the grocery store and that the car was late to take her home to "get the laundry and see the baby." As we were talking, she became increasingly agitated, wringing her hands and shaking her head. I tried to gently reorient her by saying "Mrs. Mueller, do you know where

you are? You know you are in the hospital, right?" Well, that was the wrong thing to say. She became even more agitated. She called me a liar for saying she's in the hospital, and that she was going to call the police because I won't let her "see the baby."

I asked a coworker to keep an eye on her while I went to speak with the doctor. I told him about her mental status change. I asked, "Do you want to give her something to calm down? She is safe now but at this rate she could become unsafe." The doctor replied, "I'd prefer not to give her any medication at this time; she is probably sundowning because she is in an unfamiliar place, and it will eventually pass. The meds may make her sundowning worse anyway. Let me know if she starts to get combative."

With no meds available to help my patient calm down and get reoriented, I had to figure something out. I remembered something my nursing preceptor told me when I first started. I went to the linen cart and brought out a pile of pillowcases and towels. I went to the patient and said, "I am so sorry, ma'am, you were right, there is a lot of laundry for the baby. Can you help us fold it?" She glared at me suspiciously but allowed me to set her up in her chair with a table and the linens in front of her. I snuck a bed alarm onto the seat and told her she could page me (with her call light) if she needed anything. To my amazement it worked! She calmed down and quietly began folding the stack of towels and pillowcases. She said she was glad I had finally seen reason and stopped being so stupid. I went back to the nurse's station and made sure I could see her from my computer while I finished my day's charting.

Preparing to Establish an Effective Nurse–Patient Relationship

Admitting a patient to the hospital is the nurse's best opportunity to begin a positive and effective nurse–patient relationship. Verbal and nonverbal communication is key to this process. The verbal communication involves using words and language to convey meaning, whereas **nonverbal communication** involves reading the meaning behind gestures and movement. This often sets the tone for the patient's interactions going forward at the hospital. Research shows the nurse–patient relationship can reduce the length of hospital stays, improve patient satisfaction, and increase the quality of nursing and medical care (Molina-Mula, 2020). Be professional, friendly, and culturally respectful when introducing yourself. Establishing trust and respect between the patient and nurse encourages communication between all parties. Engage **active listening**: make eye contact, be present in the conversation, and let the patient speak without interrupting them. Show the patient that staff are available to help and that the patient is an important part of the care team. Often, nurses are the main communicator between the patient and the physicians and specialty teams. The nurse's ability to communicate effectively and compassionately with their patient is a key to facilitating clear and open communication between the patient and all members of the healthcare team.

CULTURAL CONTEXT

Cultural Considerations When Admitting New Patients

Living in a diverse society, nurses need to be considerate of patients' backgrounds and cultural norms. Not every culture greets people with a handshake, while other cultures find it rude if you don't offer your hand. Some cultures find direct eye contact rude. In some Asian cultures, there is a strong sense of age- and gender-centered hierarchy. "Elders" are not to be contradicted, and while a patient may agree to a medication, they may have to ask their spouse or eldest male family member for approval.

Some cultures and religions are very uncomfortable with casual physical touch; it is good to talk through an assessment with patients and ask if something is okay to do. For example: "Mrs. X, I need to listen to your heart. To do so I need to place this stethoscope under your shirt. Is that okay?"

Some religions and religious sects will refuse to have nurses or doctors of the opposite sex. When that happens, do not be offended; let the patient know you understand and will try to see if their requests can be accommodated.

In general, when dealing with diverse populations, be professional and empathetic. Do not make assumptions. Be observant. Mistakes are likely to be made, but the important thing is to be humble, apologize if necessary, and try again. Approach interactions with people that are different from you with intentionality, respect, and kindness, and

you will continue to learn and do your best to bridge these divides.

Reduce Patient Anxiety

Being admitted to the hospital can be a very frightening experience for the patient as well as their family members. This may be the first time the patient has ever been admitted, or they may be sicker than they have ever been. This understandably can make patients anxious, and this anxiety can manifest in many ways. Anxiety, panic, feelings of helplessness, and loss of control can result in the patient showing maladaptive health behaviors (Otto, 2018). It is important to identify these behaviors and reactions for what they are and to provide the reassurance the patient needs. Give the patient choices as much as possible, staying within the limits of proper patient care and maintaining their safety. Regaining a small sense of control by being able to make a choice as simple as when they want to take their nighttime sleeping pill can help ease patient anxiety and increase their comfort. Ultimately, clear communication is a key factor in relieving patient anxiety; assessing a patient's anxiety level upon admission enables the nurse and healthcare team to develop a plan to address it sooner rather than later (Baldwin, 2019).

PATIENT CONVERSATIONS

Addressing Patient Anxiety with Intuition and Therapeutic Communication

Scenario: Jamal Brown is a 58-year-old male who has been admitted to acute care from his doctor's office; he has heart failure, shortness of breath, and oxygen saturations in the mid-80s, and he is on 2 L of oxygen via nasal cannula. Until his diagnosis of heart failure, Jamal was very active and independent. He does not like feeling vulnerable or helpless. He has just been wheeled in by emergency medical services (EMS) and transferred to the bed. Anh is his admitting nurse.

Nurse: Hi, Mr. Brown. My name is Anh, and I will be your nurse tonight. I've got a few questions to ask you. Do you prefer to be called Mr. Brown or Jamal?

Patient: Jamal is fine. I really need help though. Is the doctor coming in soon? Where is my daughter? Is she coming?

Nurse: Yes, the doctor will be in shortly. Your daughter called and she is on her way. Are you in any pain right now?

Patient: [frustrated] Didn't my doctor tell you when they called to say I was coming? I'm not in pain, I can't breathe. How old are you? Do you even know what you are doing?

Nurse: Yes, they told me. I just wanted to know if anything else was bothering you.

Patient: [frustrated] That's stupid, you already know why I'm here. I thought this was a good hospital. I want a nurse who knows what side is up. Go away.

Nurse: [patiently] I understand all of this is really scary, Jamal. I want to reassure you that you're in a safe place and we are all here to help you. Please just give me a moment to ask a couple of questions until the doctor comes in.

Patient: [angrily] No! I feel awful and you're making me feel worse. I want a new nurse when he comes in. Get out.

Nurse: I can step out if you want a minute to yourself. I can see from our monitors though that your blood pressure is a bit high, your heart rate is fast, and your oxygen is just a little over 90 percent, which is a bit low and could be why you feel short of breath. I'm going to increase the oxygen flow in your nasal cannula to 4 L. Does that feel any better?

Patient: [breathing a bit more slowly] Yes, that does feel a bit better. I don't know why my breathing is so bad when it's my heart that is sick. Why is this happening?

Nurse: When you have heart failure, you can accumulate a lot of fluid in your body because your heart can't pump as well as it should, and that can make it harder for you to breathe. Plus, coming to the hospital is scary, and that doesn't help. We will help you through this. Do you want to hold off on the rest of the admission questions until your daughter gets here?

Patient: Yes, please, if that's okay. She always knows the right things to say.

Nurse: That's not a problem. Here are your belongings along with your cell phone. I'll step out and take care of a couple things; just know that you're on our hospital monitors now [points at screen] and we will be watching and making sure you're okay. Call me if you need anything, otherwise I'll be back to check on you in ten minutes.

Patient: [grateful] Thank you, Anh. I'm sorry I yelled at you; I'm really scared. I appreciate you being so understanding.

Nurse: It's all right, Jamal. Here's your call light, I will be back soon.

Scenario follow-up: Anh could sense Jamal's anxiety both in his verbal and nonverbal communication (tone of voice). Anh understands that while the admission process is important, it is okay to give the patient some space to cope with what is happening. The patient is still safe because he is hooked up to the telemetry monitoring so Anh can watch his vitals while giving him some time. Also, Anh knows that waiting for his daughter to arrive is another way to ease his anxiety; once she is at the hospital, Anh can try the admission assessment again.

Orientation of Routines in Care

Even if the patient has been in the hospital before, it is always good practice to explain the care routines that happen on the unit. These routines may differ greatly between units in the same facility—acute care units may take vitals every four to eight hours, whereas in the ICU vitals are measured every hour. Assessment times can vary as well, from every hour to as long as every eight hours. Some assessments must happen hourly, such as those for patients who have had a stroke or have neurological disorders, or every two hours, such as peripheral vascular pulse checks. Assessments can also vary in the degree of involvement: Is there an automatic blood pressure cuff or does the nurse have to manually take the blood pressure? Is the patient asked questions they must answer, or can they be asleep? Routine tests and procedures also can vary in their necessity or frequency. When are labs drawn? Are x-rays daily or as needed? Daily hygiene and cleanliness should also be discussed; patients must be bathed or can receive assistance with bathing daily.

Another step in orienting the patient and their loved ones to the healthcare facility is informing them about visiting hours and policies regarding who can come and how many at a time. Policies can differ from one unit to another in the same facility; visiting hours on an acute care unit are very different from those on a critical care unit where the patients are sicker and require closer monitoring. Ensuring everyone is clear on the policies of the unit helps prevent potential misunderstandings that can increase patient and family anxiety. Other details that are helpful to share with the family of patients in the hospital are when meals are delivered, what dining and amenity options are available, or how to get information about the patient's status.

Encouraging Involvement in Decision-Making

Health care is a team-oriented process, and the patient is perhaps the most important part of that team. Nothing is done without the approval of the patient or their designated decision-maker; thus, it is important that patients and their family be engaged with healthcare providers. Decisions regarding the care plan should be clearly discussed with the patient, and the patient should feel empowered to ask questions and express their concerns. It is the role and responsibility of the entire healthcare team (doctors, nurses, therapists, technicians) to ensure the patient can make the most educated decision they can.

Initiation of Discharge Goals

One of the most important parts of the admission process is discharge planning, which begins when the patient is admitted. Consider all details, such as the examples listed here, that can be observed upon admission and can be discussed among the healthcare team as the patient's hospital stay progresses.

- Does the patient seem like they understand what their disease process is and what is happening to them? Will this be a problem when they are discharged?
- Do they need more education and what kind?
- What resources are available for follow-up?
- Can they access their medications? Do they understand what their medications are for? Can they afford their medications?
- Does social work or case management need to get involved?
- Will the patient need a home health nurse to check their blood pressure or blood sugar, or do a dressing

change?
- Will they need rehabilitation, or physical or occupational therapy?
- Are they safe at home, or are they at risk?
- Are there any noticeable red flags that are concerning, perhaps in what the patient says or one of their family members or caregivers says?

Keep the patient's whole picture in mind and remember that discharge planning begins upon admission.

8.2 Patient Transfer

LEARNING OBJECTIVES

By the end of this section, you will be able to:
- Describe steps for patient transfer to and from an external acute care facility
- Describe steps for patient transfer within the same facility
- Recognize the process for patient transfer to an extended care facility
- Identify how the nurse can ensure patient needs are met during transfer

Patient transfers occur between healthcare facilities, and even within the same facility. These transfers happen depending on the patient's condition, and information between facilities and units must be clear and accurate.

There are many different units with varied specialties within the same hospital. Consider a patient who was admitted for several large lacerations on their body because of a construction accident. They had serious bleeding and required surgery to repair the damage. The patient's vitals are tenuous and require blood product administration and surgery, so they are admitted from the emergency department (ED) directly to the operating room (OR). From the OR they may go to the **intensive care unit (ICU)** for close monitoring. The patient's condition improves, and they are allowed to transfer to the step-down unit, and from there to the medical-surgical unit where they are eventually discharged back home. A **step-down unit** is an inpatient unit in many hospitals that serves as a transition point between intensive care and the **medical-surgical unit**, also known as the general medical unit, where the least critical patients who still require inpatient acute care are housed. The difference between these units lies in the **acuity**, or the severity and complexity of patient illness, and in patient care routines such as the frequency of vitals, assessments, and visitation limitations as discussed in 8.1 Patient Admission. For an initially emergent admission, it is vital that the patient's medical information and condition are quickly and accurately conveyed between each of these points of care.

All aspects of the patient's medical story are important, but nurses and healthcare providers must know what information is most important to the people currently caring for the patient and focus their transfer report accordingly. Priorities may change. For example, in the ED or ICU, the patient may be in a lot of pain and require significant pain medications and frequent assessments. Interventions such as physical therapy and rehabilitation for improving mobility are important but not necessary at this point. Once the patient begins to heal and is more stable, their care priorities may change. The nursing and medical staff must be able to adapt to the patient's changing needs as they transfer from different units and facilities. Details such as wound care, a skin tear obtained on the unit, or consistently high blood sugar levels also need to be conveyed. Each point of transfer is another step in the patient's healthcare journey, and each point has the potential for crucial information to not be conveyed, negatively affecting patient care.

Steps to a Patient Transfer

In an acute care setting, the process of patient transfer begins with decisions made by the patient's primary team of providers. This can include doctors, surgeons, and/or specialists. Nurses and advanced practice providers such as physician assistants (PAs) and nurse practitioners (NPs) may also be a part of this team. Other providers can be social workers and case managers, who coordinate with insurance and sometimes Medicare and Medicaid to ensure the patient's care is covered by the relevant entity. Pharmacy may be involved as well to give their input on medications the patient may need.

Once a decision is made to transfer a patient, multiple calls are made to the receiving unit or location. The doctors call and discuss the case with the receiving doctors. The transferring charge nurse speaks with bed management and the charge nurse on the receiving unit to arrange for report. Social work and case management may be involved if the patient is being transferred externally to a different facility. Once all approvals are in place, the nurse or charge

nurse contacts the unit clerk and arranges for transportation, either via patient transport if the transfer is within the facility to another unit, or via EMS or an ambulance to an outside facility.

Patient Transfer between Facilities

Sometimes a patient is transferred from a community hospital to a larger facility for a higher level of care or for care that the smaller facility with fewer resources cannot handle. Sometimes transfers occur due to insurance issues. Whatever the case, larger hospitals—often in cities or sizeable metropolitan areas—are often affiliated with teaching universities or medical schools and thus have many resources at hand. When transferring a patient to a higher level of care, it is important to anticipate the questions the nurse will have and to try to have the information readily available if not already part of report. Transfers between healthcare facilities, also known as an **interfacility transfer**, are key points where information may be missed because many hospitals are not on the same charting or record-keeping system. A standardized report covering every possible, necessary piece of data ensures nothing is missed.

When receiving a transfer, it is key to assess the patient thoroughly, paying particular attention to important tasks such as checking the skin and bony prominences for bruises, cuts, scrapes, skin tears, or pressure ulcers. Check for any wounds, and if present, the dressings on the wounds. Any access lines such as IVs, gastric tubes, and urinary catheters should be carefully documented; per facility policy, some lines may need to be switched out. Drains should be documented and assessed. These points are all assessed under quality improvement measures and monitored by TJC, and if they are missed or not documented and addressed upon admission, the injury can become the responsibility of the facility and can negatively affect their reimbursements from CMS.

REAL RN STORIES

Paying Attention to the Details

Nurse: Liz, RN
Clinical setting: Acute care hospital
Years in practice: 8
Facility location: Tulsa, Oklahoma

It was 6 p.m. on a Friday evening and I was informed by my charge nurse that I was getting an admission from an assisted living facility. The patient was a 67-year-old male with no known allergies, being admitted for altered mental status and low blood sugar. His history included hypertension, diabetes, and high cholesterol. The nurse at the assisted living facility was on the phone ready to give report. As I started talking to her, I felt like something was off because she seemed distracted, and her details did not make sense. She said the patient is generally alert and oriented, but tonight was found sitting in his chair in front of his dinner tray sleepy, confused, and lethargic. His blood sugar was 55, so the nurse said she gave him 8 ounces of apple juice. That made sense, so I asked if the juice had improved his blood glucose. She replied "What? What do you mean improved?" I said, "Did you recheck his blood sugar fifteen minutes later to make sure that the juice helped? "No," she replied, "he responded to me when I asked if he was okay, so I figured he was fine. I have six other patients, so I couldn't go back and check." I requested she get the patient care technician (PCT) to check the patient's sugar while she continued to give me report.

Next, I asked if the patient had received his evening insulin. She said he had and that he was eating dinner when he was found lethargic. I asked if his sugar had been checked before the meal, and she said no. That was a *big* red flag for me: blood sugar should always be checked before administering insulin. I started to get frustrated, but I remained calm and professional. I then asked how much the patient had eaten today and when he was found. She said he had a big breakfast, was tired and skipped lunch, and his dinner tray had only been about 15 to 20 percent eaten. To me, this sounded like the patient had gotten too much insulin. The PCT came back to say that the patient's blood sugar was 60. I told the nurse the patient clearly needed some more juice; she instructed the PCT to give the patient another two 8-ounce containers of juice, and then continued with report. Later when the patient arrived, his blood sugar was in the 80s and he was more alert. I was so glad I asked the nurse to recheck the sugar; if I hadn't, the patient might have been in critical condition or worse before he arrived at my hospital.

Patient Transfer within Facilities

Transfers within an acute care facility are some of the most frequent patient transfers that occur when a patient transitions from one level of care to another. Consider a patient who is transferred from the ED to the ICU and how nurses ensure the patient's information is complete, ranging from the reason they are admitted to the condition of their skin after a four-hour operation. The key to having complete information is consistent assessments, standardized charting, and efficient reports between nurses upon each transfer. Information must be complete, focused, and relevant. If the patient is transferring from the OR to the ICU, the nurse needs to know what IV medications the patient is on and what their labs and vital signs are. Is there any damage to their skin? Do they have any wounds? Do they have surgical lines or drains? Their level of mobility or whether they were continent before the surgery is good to know but can be conveyed via nursing documentation in the patient's chart. Later, when the patient transfers to the general medicine floor or to an outpatient rehab, report should focus on the relevant information the nurses will need there. Some necessary information will remain the same, such as vitals, labs, and skin condition. Information that was less relevant before, such as continence and mobility, become more relevant when the patient transfers to decreasing levels of acuity. In short, transfers between units must be complete but focused, thorough, and well documented.

Report between Units

Report between units is the point where information is conveyed from one unit to the next. Different levels of care require different areas to emphasize when giving report. If the patient is being transferred for observation, it is important to know the basics of their condition, the medications they require, and the status of their mobility and orientation. Understanding the patient's medical conditions and needs when transferring them is vital to giving the receiving nurse a report with all the necessary information to care for the patient safely.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Reformulating SBAR to ISBARR

To help facilitate safe patient transfers, evidence-based communication methods, such as **SBAR** (Situation, Background, Assessment, Recommendation), have been used. While SBAR works, the system can always be improved (Muller et al., 2018). Research has been done to improve the SBAR format to include an introduction when beginning to give report and a readback at the end (Figure 8.8).

ISBARR Report

Use this format to report your concerns about a patient's condition to a health care provider. Before calling the provider, assess the patient and review the progress notes from the past 24 hours.

I **Introduction**	My name is _____ and I am a nurse calling from _____
S **Situation**	I am calling about: *Patient name and location* The problem I am calling about is: *State the problem, how severe it is, and when it started.* The most recent vital signs are: *BP* _____ , *pulse* _____ , *respiratory rate* _____ , *O_2 sat* _____ , *temperature* _____ The patient is *stable/appears to be getting worse*
B **Background**	Pertinent background information includes: *Medical diagnoses:* *Code status:* *Recent lab/diagnostic work:* *Allergies:*
A **Assessment**	I have just assessed the patient and I am concerned about: *State assessment findings that you are concerned about*
R **Recommendation**	I am asking for you to: *State what you would like the provider to do, such as reassess the patient, order a lab/diagnostic test, prescribe or change medication, etc.*
R **Repeat Back**	I am repeating back your order to confirm you would like to: *Repeat back the order*

FIGURE 8.8 ISBARR is one way to organize communication about a patient in a concise manner. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Transfer of Personal Belongings

The transfer of patient belongings may seem minor, but it is a crucial part of the transfer process. Ensuring the patient's possessions go with them preserves positive relationships and maintains a good rapport with the patient and their family. Items such as cell phones, tablets, phone chargers, eyeglasses, dentures, and earbuds frequently get lost in the transfer process. Canes, walkers, and crutches are also important belongings to keep track of for patients, as they are expensive and are often purchased through the patient's insurance. Personal mementos, such as religious icons, greeting cards, and photos, are sometimes displayed in a patient's room and should also be considered part of the patient's transfer. If the patient is too ill to participate, make the primary family contact aware of the patient's transfer so that expensive and valuable possessions such as cell phones and wallets can be located and perhaps taken home for safekeeping. Patients and their loved ones appreciate it when these details are as looked after and cared for as the patients themselves.

Family Notification of Transfer

Ideally, the patient's family is closely involved in the care plan developed with the healthcare team and they are aware of the plan to transfer, but this does not always happen. Ensuring that the patient's family is aware of the transfer ensures clear communication and positive relationships with the patient and family. Urgent notification of family is sometimes necessary as in the case of a decline in patient status requiring return to surgery or transfer to the ICU. For nonemergent transfers, if the family visits in the morning and it is several hours before the transfer is to

occur, it is acceptable to inform them of the transfer at that time. However, if the family is unable to visit until closer to the transfer time or afterward, a simple phone call update is strongly suggested. It is a small amount of time that results in a large amount of appreciation and comfort for the family.

Transfer to an Extended Care Facility

When a patient no longer needs acute inpatient care but still has significant medical needs that their family cannot attend to, the patient may be admitted to an extended care facility. This includes nursing homes, LTC facilities, and LTAC facilities. Again, as with other transfers, it is important the patient's entire story is communicated; however, report should be focused and specific on what the transferring facility needs to know. Facts that are most important, besides vitals, involve orientation, mobility, medications, and wounds. Report should be thorough, complete, and focused.

Mode of Transportation

There are many ways that a patient can be physically transferred from one facility to another. Depending on their acuity, they may be sent via EMS in an ambulance, or even a critical care specialist ambulance if the patient has a ventilator or certain IV medications that require special training. If the patient requires transfer from a very rural or remote area, the patient may be flown in via helicopter. Special teams of doctors and nurses staff these flight ambulances; they are trained in critical care life support and the use of medications, machines, and devices to sustain the patient until they arrive at their receiving facility. Patients may also be transferred via private ambulance, usually if the patient or the family wants a transfer to a particular facility. These transfers are usually arranged by the transferring facility, although sometimes the family arranges the service or transfers the patient themselves, though rarely. Regardless of the mode of transport, it is important that the nurse coordinates the patient's departure with all involved parties: the doctors should be aware, the charge nurse and unit clerk must be notified, report must be given, belongings must be packed, and the must be patient prepared (dressed, cleaned, ambulated/toileted).

Transfer of Advance Directives

The patient's code status and advance directives should also be clearly conveyed as part of transfer report, especially if the patient is being sent to an outside facility. The advance directives are rules that are legally set by the patient that dictate their end-of-life care. It is vitally important that this is communicated *clearly*, with no room for questions or error. Not communicating that a patient does not want chest compressions in the event their heart stops can cause great distress to the patient and family, as well as potential legal ramifications for the facility.

Ensuring Patient Needs Are Met during Transfer

Leaving the hospital for somewhere new can bring on a lot of anxiety for patients and family members, especially if the patient's mobility or overall health has been impacted by their inpatient stay. There may even be fear or anger.

Consider where the patient is going. Report to an assisted living facility may be very different from report to an LTC facility or an inpatient rehab floor. Is the patient going home? Are there new medical devices going home with the patient? Who needs to be educated? What can the family or patient expect? What are the plans for follow-up? The rapport built with a patient will factor into how the nurse can help the patient transition to this next phase in their healthcare journey.

Patient Comfort

Patients may be very anxious upon transfer to a new unit. Their health may have drastically changed for better or worse since admission and this new transition can cause fears, anxieties, or even trauma to resurface. Nursing can play a large role in easing this process for patients as well as their family members. The nurse may need to provide medication before the transfer such as anti-anxiety or pain medications.

Be transparent about the process and the schedule. If a patient is leaving an acute care facility for an LTC facility, arrangements may take a while to find the right facility and ensure all medications and follow-up appointments and care are set up. Setting up post-hospital care with insurance, Medicare, or Medicaid can also be a long, arduous, and frustrating process. Educate the patient and family about what is happening. Do not scare them but be realistic about how long the process can take. Acknowledge and validate their feelings. Provide active listening and be empathetic.

Assist the patient by packing all belongings and ensuring nothing is forgotten. Assist the patient with any needs or

bodily functions before transfer. Do they want to bathe or brush their teeth? See if the family wants to bring the patient clothes. Does the patient want help getting dressed? Are there any hospital supplies that can be sent with the patient, such as dressing change supplies or extra hygiene products? These are small and considerate touches that can help ease the transition for the patient and their loved ones.

Patient Safety

Patient safety is of the upmost importance during the transfer process. Scenarios, such as medication errors, unassessed wounds, falls, or skin breakdown from incontinence, can occur if a proper and thorough report is not given to the admitting facility. Nurses must include all pertinent information when giving a hand-off report, and this includes educating the patient and family about the transfer process. The following questions, in addition to standard hand-off report, can ensure information regarding patient safety is considered:

- What is the patient's mobility status?
- Is the patient continent?
- Are they confused? Are they sundowning?
- Has patient and family education been completed?

CULTURAL CONTEXT

Cultural Considerations Regarding Patient Safety

Some cultures are very uneasy about letting anyone care for their loved ones other than direct family members. Asian and South Asian cultures may tend to feel it is a familial and filial duty to care for elders when they are not well. Not to take on that responsibility may possibly be seen as disrespectful, which can conflict with some Western and American perspectives. It can be difficult to reconcile these traditions with the level of care a patient requires, especially if it is care that the family may not be able to handle due to language barriers or financial concerns.

One way to open the conversation in such a situation is to arrange a family meeting with a translator (if needed) and the primary doctor or surgeon that has cared for the patient. Emphasize that keeping the patient as safe and healthy as possible is the common priority of everyone there. The ultimate decision and outcome may not be ideal or what was expected but it is the healthcare provider's role to use their medical knowledge to educate and guide as best as possible.

Patient Teaching

Patient teaching largely depends on where the patient is being transferred to, and what the level of care is going to be. For example, consider a patient who is being treated for esophageal cancer and is going to an assisted living facility with a new **percutaneous endoscopic gastrostomy (PEG) tube**, a type of feeding tube inserted into the patient's abdomen that enables them to receive tube feedings instead of being fed orally. The patient and family have never seen or heard of anything like this before and they are terrified. Teach the patient and their family about this tube, describing how to care for the tube site and how to work the feeding pump. Educate the patient and family on how to know when the PEG tube is normal and when they should call for assistance. The nurse should also get case management and social work involved to ensure the patient will have all the necessary supplies at their next facility, and that the details of the patient's insurance coverage is worked out.

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 2

Refer back to Unfolding Case Study #2: Part 1 for a review on the patient data.

Nursing Notes	**0830: Assessment** 12-lead ECG performed, ST depression noted, cardiology team aware. 2 L oxygen via nasal cannula applied with improvement in shortness of breath noted. Left AC IV inserted, nitroglycerin infusing per protocol. Patient reports improvement in chest pain.
Lab Results	LDL cholesterol: 165 mg/dL (normal: < 100 mg/dL) Troponin: 23 ng/mL (normal: < 0.04 ng/mL)
Diagnostic Test Results	Chest x-ray: no acute findings
Provider's Orders	**0833: New orders** Transfer to cardiac unit for close observation.

3. Prioritize hypotheses: Why do you think the patient is being transferred to the cardiac unit? Is there anywhere else you would expect this patient to go?
4. Generate solutions: What information is the most important for the emergency room nurse to include in the report to the cardiology unit nurse?
5. Take action: The emergency room nurse prepares to take the patient to the cardiology unit. What are some considerations the nurse should think about before initiating the transfer?
6. Evaluate outcomes: After taking the patient to the new unit, what outcomes would indicate that the transfer was successful?

8.3 Patient Discharge

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the steps for discharge from a healthcare facility
- Understand the issues with patients leaving against medical advice
- Explain the process of discharge from home health agencies

Discharging a patient from a healthcare facility is the final transition point in a patient's journey through the healthcare system, although there may be other points or stops in a patient's healthcare journey. During admission, a healthcare plan is discussed and constructed, which is when the plan begins to come into focus; discharge is the part of the healthcare plan ensures that the patient has the education, knowledge, supplies, and necessities to maintain their health. Follow-up appointments, such as with the primary team, specialty doctors, rehab, and physical therapy (PT) and/or occupational therapy (OT), get arranged. A thorough and well-planned discharge plan helps the patient progress through the healing process as smoothly as possible. Discharge planning is also the first step in care coordination and a vital part of patient-centered care.

Discharge from a Healthcare Facility

Discharge from a healthcare facility has many layers and procedures. Inpatient doctors collaborate and give their approval that all necessary patient benchmarks have been met: Has the patient been transitioned to medications that are available and safe for them to take outside of an acute care setting? Are the patient's vital signs stable or within normal limits for them? Does the patient have a place to go? Does the patient have the resources to either properly care for themselves or have someone care for them?

Specialty teams that have been consulted during the patient's care must also agree that the patient is ready for discharge. For example, the renal/nephrology team may require the patient to attend hemodialysis; once the patient is able to tolerate outpatient dialysis, the team gives approval and arranges follow-up for the patient after discharge. The endocrine team may have concerns about a patient's blood sugar management. The cardiology team may want

to have the patient wear a heart monitor to watch for arrhythmias. If the patient has diabetes, a specialist may want to speak with the patient and family about glucose monitoring or skin and wound care. Dietary needs might need to be considered. Social work may need to get involved to ensure the patient gets the support they need. There are many aspects to consider when arranging discharge.

Guidelines for Discharge Planning

The importance of discharge planning cannot be understated. A readmission within thirty days of discharge can incur financial penalties for the healthcare institution, which includes reduced or no reimbursement for healthcare costs incurred (Patel, 2023). Yet, no formal standards exist for discharge planning. Successful discharge planning involves the patient and their family from the beginning; again, this is why discharge planning begins upon admission. The plan must be based on collaboration with all individuals involved, and depends on follow-up, ongoing guidance, and education.

LINK TO LEARNING

The Agency for Healthcare Research and Quality (AHRQ) has an excellent resource for healthcare providers for implementing discharge planning systems (https://openstax.org/r/77DischargePlan) at healthcare facilities. It includes roles for all members of the healthcare team, rationales for each role, and tools to help implement the guidelines. Medicare also has a handbook for patients and their families (https://openstax.org/r/77PatFamHandbk) to guide their involvement in the discharge process.

Interdisciplinary Team Decisions

From morning huddles to daily rounds, all members of the healthcare team discuss their patients. Nursing generally reviews the patient load on their floor as a unit before handing out assignments for the shift. For physicians and surgeons, this process is typically called **rounds**, and their action is called rounding. Rounds involve a brief recap of the patient from admission and the most recent update on their condition. This may occur in a huddle, similar to what nursing does, or the physicians may physically walk the unit to each patient room. Research shows that conducting rounds in front of the patient and their family increases their involvement and improves outcomes (Strathdee et al., 2023). Respiratory therapy (RT), PT, OT, pharmacy, and all specialists (such as cardiology and nephrology) review their patients within their discipline as well.

However, all these disciplines need to collaborate to benefit a patient. Consider a patient admitted for abdominal surgery. According to the surgical team and internal medicine, the patient needs acute rehabilitation. Social work says an assisted living facility is needed to accommodate those needs. The nurse also informs the team that the patient has expressed concern about their dressing changes once they leave rehab. The patient only trusts their daughter to change the dressings, but she lives two hours from the patient's home and cannot come every day. Also, the patient is showing a lot of reluctance to the dietary changes that come with managing their diabetes despite nursing's efforts to educate. Each of these issues is intertwined with the other. What can be done? Are there other learning materials that can be given to the patient? Can a nutritionist speak with the patient about ways they can incorporate their current diet into a healthier diet? Can social work help coordinate a wound care nurse to come help with the dressing changes on the days the daughter cannot come? Successful discharge planning depends on the effectiveness of these interdisciplinary team conversations and decisions.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs.

Skills: The nurse will:

- Discuss patient needs and requirements for discharge by evaluating the patient's health situation from the patient's point of view.

- Value and appreciate the patient's own knowledge and experiences regarding their health.
- Respect that the patient and their family may have different values regarding the patient's health and preferences regarding their level of involvement in the patient's care.

Knowledge: The nurse will:

- Include multiple dimensions of patient-centered care.
- Respect how different cultures, economic backgrounds, and ethnicities serve as foundations for personal values.

Attitude: The nurse will:

- Seek to enhance personal knowledge in all aspects of human diversity.
- Try to see healthcare needs through the patient's eyes.
- Respect the patient's expertise with their own healthcare needs and symptoms.

Characteristics of Effective Interdisciplinary Teams

An effective interdisciplinary team (IDT) in health care is much like any effective team in any profession. They should be cooperative, professional, respectful, thorough, and thoughtful. The team comes together with the same priorities for the patient, and the value comes from their different specialties, which lend different perspectives on the patient's needs. The most necessary element of an interdisciplinary team is strong, competent leadership (Table 8.3). This can come from the doctors and surgeons or can be a collaboration with nursing and social work.

Characteristic	Example of Behavior
Positive communication strategies	Communicate clearly and professionally. Show mutual respect for all members of the team. Respond in a timely manner to queries.
Appropriate skill combination	Ensure all necessary members of the team are informed.
Supportive team climate	Inform fellow team members when changes to the patient's plan of care are made (do not assume they will see it in the chart). Be proactive and considerate.
Appropriate resources	Ensure necessary supplies are available, and/or specialists are available to provide their input.

TABLE 8.3 Characteristics of Effective Interdisciplinary Teams

REAL RN STORIES

Being an Effective Team Member

Nurse: Lia, RN
Clinical setting: Surgical intensive care unit
Years in practice: 11
Facility location: A large metropolitan area near Skokie, Illinois

I think the best interdisciplinary team I have ever been a part of was on the surgical intensive care unit. The hospital was the biggest hub for organ transplants in the tristate area. We did kidney, kidney-pancreas, and liver transplants on my unit; on the cardiothoracic intensive care unit (CTICU), they did heart and lung transplants. It was such fun and inspiring work, I just loved it.

The kidney and liver surgeons did their rounds together and were all seated around the table. Sitting on the

periphery were the residents, the transplant social worker, the case coordinator, and the transplant pharmacist. Nursing had a designated space by the door because we only stepped in to discuss our patients before returning to the floor. On the morning I'm thinking of, I had just gotten report on a patient we were very familiar with. She was a female in her mid-40s who had nonalcoholic steatohepatitis, also known as NASH; basically, this was liver disease not caused by alcohol. She was very sick and had been in and out of our unit for years. It was a great day because she had been admitted two nights prior, and the day before she had finally gotten a healthy liver! She had gotten to our unit late in the night and had stayed on the ventilator all night. In the morning on rounds, we were going to discuss her case.

The transplant residents gave the surgeons a brief but detailed report on how the patient had done overnight, including her vitals, her labs, urine output, and so forth. She had been a bit unstable on arrival, but as the night went on, her vitals improved and nursing had been able to wean off much of the IV drip support and sedation. Nursing reported that with the sedation weaned, she had passed her breathing test, indicating she could be extubated (taken off the ventilator) to breathe on her own. The surgeon agreed, and one of the residents quietly picked up their hospital phone to alert respiratory therapy to prepare the patient for extubation. The residents and surgeon discussed the plan for the next few days, and articulated benchmarks with labs and vitals to look for to indicate positive progress. Pharmacy then said that the patient's levels of antirejection meds were good per the morning labs. Social work gave an update on the family, and case management provided the rehabilitation facility the family had chosen for the patient after discharge. The surgeons turned to me at that point and asked for nursing's update. I said that the patient was calm and oriented now that sedation was weaned and agreed that she was ready for extubation. Vitals were good, and her surgical incisions and drains were all in good condition. I answered a couple more questions about her vitals and input/output, and then I was dismissed. One of the transplant residents left with me to supervise the extubation; by the time I got back to my patient's room, respiratory therapy was there preparing to extubate.

I loved being a part of the transplant IDT rounds. It was such a positive team atmosphere. Everyone pitched in and knew their part, and when something needed to happen, such as an extubation, it felt like an organized, well-oiled machine. Even though the patient was still at least a week or more away from discharge, we were actively planning for it. It felt so hopeful. When we had great success stories like this one, it just felt like we were truly making a difference.

Leadership and Structure

Generally, the **primary team** is the one that leads the discharge discussion. This is the team that admitted the patient; perhaps it is the internal medicine team and they coordinate with specialty teams, such as cardiology, endocrine, or renal. Sometimes the patient is admitted under a specialty team such as cardiology. The patient may have an extensive cardiac history and requires cardiology's management, or maybe they were admitted from their cardiologist's office.

Once the primary team approves the patient for discharge, other members of the IDT begin their tasks to prepare the patient. Pharmacy looks at the patient's medication list and ensures there are no duplicates; they may have questions or discuss issues regarding the patient's medications with the doctor. A large burden of planning patient discharge often comes down to nursing and social work. Once the necessary elements the patient needs are confirmed, nursing implements the discharge plan, conducts the required education, and finds resources/staff/specialists to educate and inform the patient and their family. Nursing and social work may work together to ensure the patient gets their necessary supplies and medications.

Identifying Patient Needs

The type of needs a patient had when admitted to the hospital more often than not have changed, sometimes drastically, by the time they are to be discharged home. Needs such as pain management may have been addressed by the inpatient stay, but now a patient may require teaching and resources to manage a new health problem. Does the patient need to go to an LTAC facility, but there isn't one close to where they live, or that takes their insurance? Is the patient newly diagnosed with diabetes and now needs to know how to test their blood sugar? Was a PEG tube placed, and now the patient's family member requires teaching on how to set up the feeding pump? Does the patient need further education on diabetes management? Does the patient understand why they need to take their medications as prescribed?

These are just a few examples of the patient issues, needs, and planning/logistics problems that may arise upon discharge. Many of these issues are related to the patient's health literacy, or their ability to learn how to understand and manage information and teaching about their medical condition (Centers for Disease Control and Prevention [CDC], 2023). Understanding what patients need upon discharge and their level of health literacy helps the IDT know how best to address those needs. PT teaches patients how to use canes or walkers to get around. OT teaches patients how to get in and out of cars, or how to shop at the grocery store without straining a surgical incision. Nursing (sometimes with help from pharmacy) teaches patients about new medications and potential side effects. Nursing may also teach about how to set up a feeding pump and proper care of a PEG tube site. Specialty educators such as a diabetes nurse educator may spend multiple sessions while the patient is in the hospital, teaching them how to manage their diabetes, how to take their blood sugar, how to dose their insulin, or how to follow a specialized diet.

Risk of Caregiver Role Strain

Caring for a chronically and/or critically ill family member can take an emotional and physical toll on a person. Anyone can become a caregiver to a loved one. A caregiver could be the teenaged children of a seriously ill adult or the ill adult's older parents with health issues of their own. A caregiver could be someone caring for their spouse while simultaneously holding down one or more jobs and caring for children. Sometimes the caregiver does not have a network of family or friends to help with caregiving, which means the person is doing everything with no interruption or relief.

It is difficult to see someone ill, and the demands of caring for a sick individual can be overwhelming, especially if the caregiver is unprepared. Family should be assessed as caregivers well before discharge, and the resources of the family should be seriously considered when creating a discharge plan for a patient. Could the family need respite care, a temporary caregiver (sometimes a nurse or a patient care aide) who can step in and take over the patient's care while the primary caregiver takes a break? Respite care can be for a few hours; sometimes it can be for a whole day or more.

Sometimes the lack of social support and community for a patient can make it difficult to ensure they have a successful discharge. What kind of care does the patient need? Do they need in-home care, a nurse to stop by, or a day-care facility for the patient to go to during working hours? In extreme cases, a patient may need to go to an LTC or LTAC facility because they need medical devices or care that no one around the patient is able to provide. The more nurses can address myriad aspects of a patient's care, the better the patient will do after discharge.

LIFE-STAGE CONTEXT

Caregiver Role Strain

Caregivers who are young, such as teenagers or adults in their 20s, or those with young children and families of their own can have a very difficult time coping with a new caregiver role. It can be difficult or frustrating to put personal needs aside and put someone else's needs ahead of your own. Resources such as support networks, respite care, and psychological counseling are available to help ease potential caregiver role strain.

As healthcare providers, it can be hard to see patients and their loved ones go through such pressure. It is important to be respectful as well as thoughtful and imaginative in ways that nurses can help ease the strain of young caregivers. Thinking ahead to what a family with considerable caregiver responsibilities may need helps a lot.

Development of Patient Goals

Part of a patient's recovery involves establishing goals for the patient to work toward, and how the healthcare team can help the patient achieve those goals. Sometimes goals can come spontaneously from the patient themselves: they want to attend a grandchild's graduation, or they want to stop being on so much insulin. Nurses work with patients to translate goals into achievable statements. One way to help a patient articulate their goals is by using the SMART goal mnemonic (Table 8.4). When executed properly, SMART goals help patients articulate what they want to achieve and give them a plan to reach this goal in an effective manner.

	S Specific	M Measurable	A Attainable	R Relevant	T Timely
Definition	Add in as many details as possible.	Create a goal that is trackable.	Reflect on whether the goal is reachable.	Think about why this goal is important to you.	Keep yourself accountable.
Ask yourself . . .	What will I do? Why and by when?	How will I measure my goal?	Can I accomplish this goal within a certain timeline?	Does this goal align with my values and other goals?	By when do I want to accomplish this goal? How long will it take?
Example	I want to stop having to inject insulin every day. To do that, I have to get my blood sugar consistently under control, which my doctor says is less than 180 two hours after eating. To get my sugar under control, I have to improve my diet, which means I need to eat more vegetables and fruits, and cut back on processed foods.	My blood sugar after meals must be checked with my glucometer and should be less than 180 two hours after eating. I will check my sugar as directed by my doctor and keep a record of my results.	The changes I need to make to achieve this goal are also changes that will make me healthier in the long run, so outside of this goal it is a good choice for my overall health.	Being a healthier person will help me live a longer and better life.	Change doesn't happen overnight, but in six months I would like to see my blood sugar consistently at 180 or less when checked two hours after eating.

TABLE 8.4 SMART Goals

Putting goals together often becomes an interdisciplinary and collaborative process because the patient's baseline level of function, their support system, and their financial and community resources all need to be taken into consideration.

LINK TO LEARNING

The National Lipid Association's resource sheet for clinicians on helping patients make SMART goals (https://openstax.org/r/77SmartGoalsNLA) is helpful because lifestyle modifications are some of the hardest modifications to make. This resource is very clear and offers tips on how nurses can help patients to name and reach realistic goals.

Patient Education

Making SMART goals goes hand in hand with patient education about their health and their health literacy, which is a

person's ability to learn and utilize information and resources regarding their health in order to make educated decisions (CDC, 2023). Nurses help patients increase their health literacy.

Determining how best to provide the patient with the necessary educational resources is part of the nurse's job. Ask the patient how they like to learn. Some patients are visual learners, so diagrams and handheld/tactile teaching materials are the best. Others prefer to read their information but perhaps do not have an appropriate literacy level for the materials available. Collaborate with the patient to figure out the best way they understand their health. One technique, often used in nursing and medical schools, is called "See one, do one, teach one." For example, to prepare for discharge, the patient or family member may watch the nurse make a dressing change, then do one themselves with supervision, and then do one on their own. This teaches the patient how to care for their own medical needs after they leave the healthcare facility.

LINK TO LEARNING

This video provides details about the teach-back method (https://openstax.org/r/77TeachBackVid) for teaching others.

Established rapport with patients and their family members aids in educating patients and improving their health literacy. Communication should be easier because patients will feel comfortable asking questions. The key to patient education is teaching them to take ownership of their health.

Teaching and Evaluation of Discharge Plan

Nurses review discharge orders with the patient and their family member or designated learner. The **designated learner** is the person, either the patient, someone chosen by the patient, or a family member, who receives the education necessary for the patient's discharge plan. All the discharge plans are summarized in the discharge summary, which is usually a formatted printout from the patient's chart that reviews the patient's reason for admission, the medications they were on before admission and the ones they are on currently, and scheduled appointments for follow-up (Figure 8.9). Pharmacy or the doctor often reconciles the medications beforehand to ensure all medications and dosages are correct and there are no duplications. Nurses may also check in with case management to ensure that all the medications on the discharge plan are going to be obtainable by the patient or covered by their insurance. The discharge plan also discusses any specific instructions the patient may need, such as how to make dressing changes, directions on wound care, caring for lines and drains, and instructions for follow-up as an outpatient. All members of the IDT collaborate to create the discharge plan, and because nursing is most often the last to be face-to-face with the patient, nurses must ensure the plan is clear, and if not, find ways to help clarify the discharge instructions. Nurses can remind patients that most discharge instructions will also be included in the online patient portal for easy access at a later time.

Discharge Summary Format	
Patient name:	
Admission date:	
Discharge date:	
Attending physician:	*(the physician in charge of the patient's care)*
Admitting diagnosis:	*(the primary reason for admission to the hospital)*
Discharge diagnosis:	*(complete list of active problems, including the admitting diagnosis, that were addressed during the patient's hospital stay)*
History of present illness:	*(short summary of the events that brought the patient to the hospital for this particular stay)*
Procedures:	*(names and concise descriptions of any procedures the patient underwent)*
History and hospital course:	*(a summary of clinical course beginning from the time of admission and covering the major events throughout their stay)*

FIGURE 8.9 Discharge summary paperwork is a vital part of summarizing a patient's hospital stay and instructing them on how to care for themselves going forward; it can also be overwhelming. Thus, the ability of the IDT to meet the patient at their level of health literacy and teach them about their condition is essential to a safe and proper discharge. Remember that this summary will be used by fellow healthcare providers; use a problem-oriented approach and write a separate paragraph for each problem included. Be sure to provide what the problem was attributed to, interventions performed, events that occurred, and outcome(s). Do not simply list lab values. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

After the nurse reviews the discharge plan with the patient or designated learner, any necessary teaching must take place. Teaching can cover a wide array of topics, from explaining how to perform tasks such as wound dressing changes, monitoring vital signs at home, or explaining new medication regimens or diets. Discharge teaching must be documented in the patient's chart and include what and how something was taught, as well as how evaluation of the learning took place. Most facilities conduct follow-up surveys via phone call or questionnaire to evaluate how effective the transition from discharge is. Follow-up surveys usually discuss the patient's hospital stay, the discharge process, and any recommendations for improvement. Getting feedback from the patient's perspective is always encouraged when making process improvements.

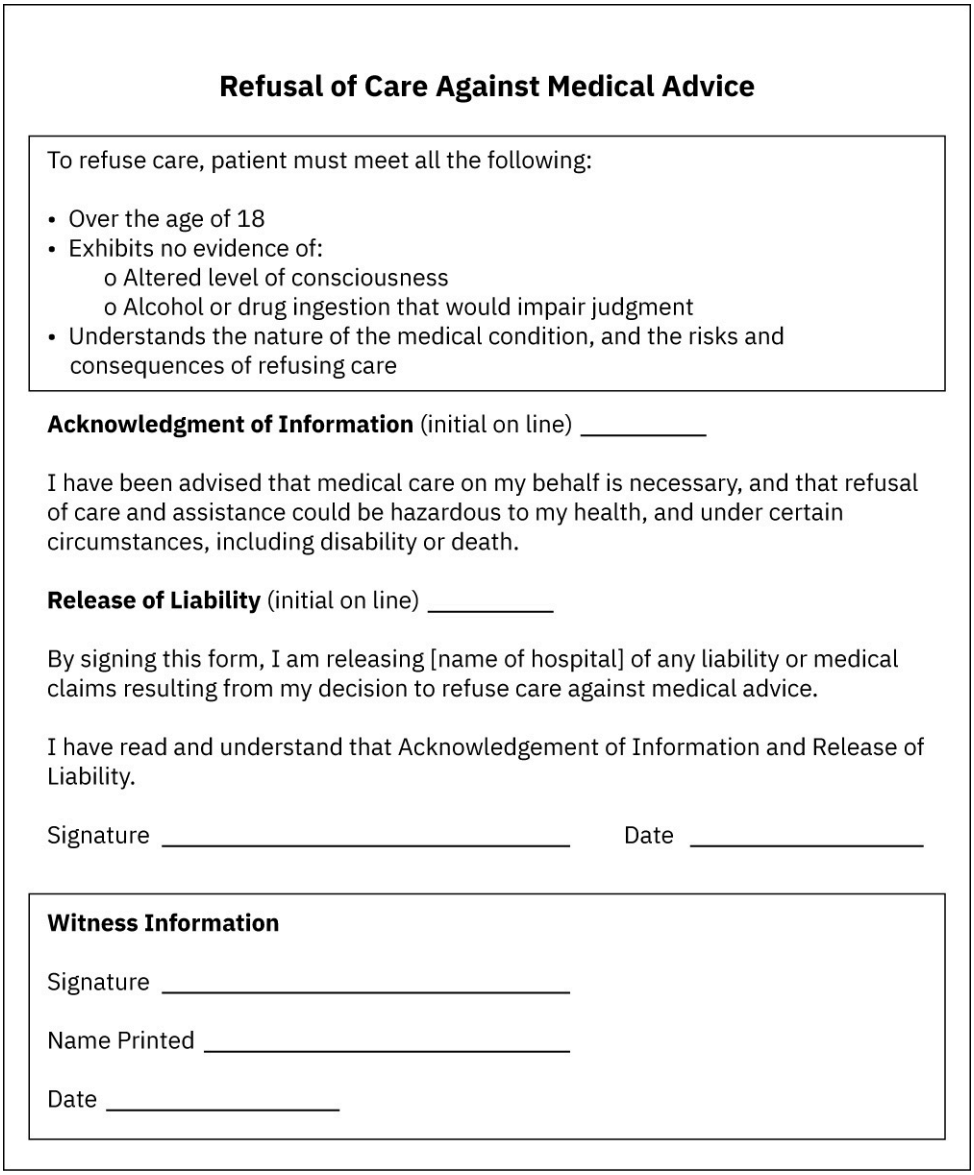
Leaving Against Medical Advice (AMA)

Sometimes, the plan of care created with the medical team during an inpatient or hospital stay does not coincide with patient expectations. If this is the case and the patient no longer wishes to receive care from the healthcare facility or provider, the patient may decide to leave without the doctor's approval and a formal discharge, known as leaving **against medical advice (AMA)**. If a patient insists on leaving AMA, it is the duty of the nurse and staff on duty to ensure the patient is fully informed regarding the risks of leaving AMA, and if they insist on leaving, that they leave as safely as possible.

Patient's Right to Leave AMA

Treatment is always with patient consent, so if a patient has problems with the planned course of treatment, they are under no obligation to continue with it. The medical team can work with the patient to educate and reassure, or

to reevaluate the plan depending on the patient's needs and preference while keeping the patient's best interests at the center of the discussion. However, if the medical team and the patient cannot come to an agreement, the patient may leave the hospital or healthcare facility AMA. Legally, in most cases, the patient cannot be compelled to stay for treatment they do not want, and they always have the right to leave AMA. If a patient insists on leaving AMA, there is a form to sign for hospital records. This form acknowledges that the patient was told they are not ready to leave the hospital, and that they have been advised that leaving can be detrimental to their health (Figure 8.10). It is preferred that patients sign the AMA form but not required.



Refusal of Care Against Medical Advice

To refuse care, patient must meet all the following:

- Over the age of 18
- Exhibits no evidence of:
  - o Altered level of consciousness
  - o Alcohol or drug ingestion that would impair judgment
- Understands the nature of the medical condition, and the risks and consequences of refusing care

Acknowledgment of Information (initial on line) _____

I have been advised that medical care on my behalf is necessary, and that refusal of care and assistance could be hazardous to my health, and under certain circumstances, including disability or death.

Release of Liability (initial on line) _____

By signing this form, I am releasing [name of hospital] of any liability or medical claims resulting from my decision to refuse care against medical advice.

I have read and understand that Acknowledgement of Information and Release of Liability.

Signature _____ Date _____

Witness Information

Signature _____

Name Printed _____

Date _____

FIGURE 8.10 This example of an AMA form documents that the patient understands that their healthcare team does not recommend they leave the hospital at this time. Forms like this are then placed in the patient's medical record. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

PATIENT CONVERSATIONS

Turning a Difficult Conversation into an Opportunity

Scenario: Joseph is a 65-year-old male who is housing insecure. Joseph also has diabetes and has a very hard time controlling his blood sugar and diet largely because of his housing insecurity and learned behaviors from that insecurity that he has gained over the years. Joseph was picked up by the police two nights ago for sleeping on the

street and brought to the hospital after he showed signs of severe hyperglycemia. Joseph also has long-term damage from his diabetes, including impaired vision and peripheral neuropathy (nerve damage). Today, he is very angry with his nurse, Jason, because he does not want to adhere to the diet he has been prescribed.

Patient: This is ridiculous! I want what I ordered for lunch! What is this garbage?

Nurse: Unfortunately, Joseph, you cannot have what you ordered for lunch because it will make your blood sugar skyrocket. You ordered a hamburger, a grilled cheese sandwich, potato chips, and extra ice cream. This is not part of your diet and will make you feel sick.

Patient: Yeah? So? It's what I want and I'm just going to eat it when I leave. Maybe I should just leave now so I don't have to listen to your stupid face tell me these stupid things about my blood sugar.

Nurse: We are only trying to help you feel better, Joseph. You were feeling pretty terrible when you were admitted two nights ago.

Patient: Yeah, that's true. But I didn't ask to come here. I didn't ask for any of this. You know what? Forget this. I'm out.

Nurse: What do you mean "I'm out?" Can you be more specific?

Patient: I mean I'm OUT. I'm LEAVING.

Nurse: Well, I can talk to the doctor, but I don't think you're ready to be discharged yet. Your blood sugar is still very high. At the last check it was over 300.

Patient: Didn't you hear me? I don't CARE. I want to leave because I hate this place.

Nurse: It is your right to leave whenever you want, Joseph. But if you leave, you know you aren't going to feel better. You may get to eat the food you want, but after that you are just going to feel worse. I'm trying to help prevent you from feeling that way.

Patient: ...

Nurse: Staying with us can only help you feel better. And if you feel better and learn the ways that you can *stay* feeling better, maybe you won't have to be here as often. Will you consider it?

Patient: [grudgingly] Maybe. If I do want to leave, can I just leave?

Nurse: I hope you don't, but if you insist, yes, of course, you can leave. I would appreciate it if you'd let me know if you are going to leave, though. I'll bring you a paper to sign that says that you are leaving against medical advice (AMA). Once you sign it, you are free to leave if you wish.

Patient: Really? I just have to sign a stupid paper. That's it? Why do I have to sign anything then? You aren't going to arrest me?

Nurse: No, of course not! As a patient you have every right to refuse care. The paper is just for our records to show that you made your own decision to leave. I'm just trying to explain to you the reasons for your care decisions, and why it is better for you if you stay. Maybe if you understand why you'll be more willing to try our ideas?

Patient: Maybe. Can I have a snack and some soda pop while I think about it?

Nurse: Sure, no problem. Thank you for considering, Joseph.

[The nurse leaves the room and goes to the kitchen to get Joseph a package of saltines and some sugar-free ginger ale. He pours the ginger ale into a pitcher with some ice and brings it back to Joseph with a cup and the crackers.]

Scenario follow-up: Jason explains what AMA means to Joseph calmly and professionally. He knows that he may not change Joseph's mind, but he is giving him the tools he needs to make the decision for himself.

Mental Capacity to Leave AMA

There are, of course, exceptions to leaving AMA. These exceptions can include the patient not having the ability to make that choice for themselves. Perhaps they are not fully oriented—they don't know their name, where they are,

or the date—or their departure is impossible or incredibly unsafe (such as the patient is in critical condition and connected to lifesaving medications or machines). Sometimes, a patient may be a direct threat to themselves or someone or something else. In those instances, documentation by the nurse and treatment staff is important. On occasion, security services may be warranted to ensure the safety of the patient and staff. In extreme cases, a patient may be detained under a mental health hold to ensure their safety and the safety of the people that will be around them outside the healthcare facility. In general, however, most patients are legally decisional and can decide to cease treatment and leave at any time. Nurses must document the patient's mental status and any interaction with the patient regarding the patient's desire to leave AMA.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: What Are Some of the Advance Warning Signs of an Impending AMA Departure?

Observant staff can usually pinpoint warning signs and behaviors that indicate the potential for a patient to leave AMA. This can include anger, agitation, combative behavior, and outright threats to leave the hospital. Constant arguing with nurses, doctors, and staff can also be a sign. Overt signs can include the patient physically dressing to leave or packing their belongings. Reasons for leaving AMA can include frustration with the plan of care often because the patient feels their needs are not being met and requests are not being heard. Other examples include family or work obligations. Sometimes this may also come in the form of requests for second opinions or referrals to alternate healthcare facilities. Remember, in these situations, safety is paramount—safety of the patient, safety of other patients, and safety of the staff and healthcare personnel around the patient.

Interventions to Avoid Leaving AMA

Empathetic, therapeutic communication is a key part to preventing an AMA discharge. Therapeutic communication is the use of both verbal and nonverbal clues to communicate with another person. It is the nurse's job to try to find from where the patient's dissatisfaction stems. Is the patient confused about what the medical team is saying? Is fear or anxiety a root cause of their dissatisfaction? Sometimes a patient threatening to leave AMA is just frustrated because they are in pain, or they felt their questions were not answered adequately. Leaving against medical advice (AMA) puts the patient at risk for adverse outcomes. Healthcare providers and nurses mitigate these risks as much as possible before a patient leaves the hospital by being thorough and detail oriented and using therapeutic communication skills. Many nurses are now trained in forms of conflict resolution and nonconfrontational methods of defusing potentially volatile situations.

Health care is a dynamic profession that changes with every patient encounter, and as frontline healthcare providers, nurses are the first to identify a patient situation as well as potential ways to address the issue. Does the patient understand the treatment plan? Does the patient understand what may happen if they leave before the doctor says they are ready and safe to leave? Sometimes, a patient's dissatisfaction can be resolved by getting a different healthcare provider (another doctor, nurse, or social worker) to speak with the patient to try to encourage them to stay.

Nursing Documentation for AMA Discharge

Documentation of an AMA discharge is very important because of the risks of leaving AMA. Thus, it is incredibly important for nursing to properly document the AMA departure. While it isn't an absolute necessity, it is helpful if the patient signs the AMA form. Otherwise, the nurse should enter a progress note into the patient's chart documenting the issues and conversations leading up to the AMA discharge. These documented notes can ultimately be subpoenaed and used in court, so it is important to be factual, professional, and clear.

Leaving AMA means the patient's medical condition continues to be untreated or inappropriately addressed. This can lead to a worsening of the problems that got the patient admitted in the first place and can ultimately lead to increased mortality. If at all possible, attempt to give the patient at least some of their discharge instructions. Leaving AMA with unresolved medical issues also affects the hospital/healthcare facility. Depending on the severity of the issues, the patient may be readmitted soon after the discharge, and it is possible the facility will not be fully reimbursed for the costs of the patient's care. Ensure that all documentation of the patient's care and the situation surrounding the AMA discharge is complete and professionally written.

Discharge from Home Health Agencies

A **home health agency (HHA)**, or a service that provides medical care in a patient's place of residence, has strict rules regarding the discharge process. Often, patients need additional medical care but not enough to stay admitted to an acute care facility. Instead, HHAs are utilized. HHAs provide a full range of services, such as food preparation, assistance with hygiene, wound care, and medication setup. Nurses also complete weekly or biweekly assessments to monitor for decline or improvement in health status. Nurses working for HHAs develop individualized schedules for each patient based on the discharge orders and services needed, but can also serve as an on-call healthcare professional to provide an assessment to determine if a trip to the hospital is warranted. The HHA nurses have instant communication with the provider caring for the patient, which allows for needs to be met in the comfort of the patient's residence. Most patients are approved for a sixty-day or thirty-day period of care.

Discharge from an HHA takes place when all treatment goals of the plan of care have been met. For discharge from an HHA to occur, an admissions RN must reevaluate the patient. In this meeting, all discharge teaching and an evaluation of the patient's response to learning must be documented in a timely manner. If determined goals have been met, the patient may be discharged from the HHA's services, but just as in an acute care facility, if the patient's condition changes, they can be readmitted or have the current plan extended if needs are identified.

LIFE-STAGE CONTEXT

The Importance of Being Clear: Home Health Agency Discharge

When discharging an older adult from an HHA, it is imperative that discharge teaching be done just as if the patient were leaving an acute care or extended care facility. Learning needs must be assessed. Does the patient tend to get confused or forgetful? Does the patient fully understand the medications they are taking and when they should take them? Is the patient's living space safe for them without home health monitoring? Sometimes it is appropriate for a secondary learner to be present when doing discharge teaching to ensure a caregiver also understands what needs to be done and how to do it.

Summary

8.1 Patient Admission

There are many different types of patient admissions to healthcare facilities. It is important to ensure the patient is admitted to the correct level of care. Acute care admissions are for patients who require inpatient monitoring and/or a professional level of care. Observational admissions are typically for one or two nights. Admissions to the hospital can be planned or unplanned. Some come from an ambulatory care setting, while others arrive from home or via EMS.

The admitting nurse must be organized and structured in their approach to admitting a patient. The admitting nurse must receive a complete and accurate report, ensure that their other patients are safe and their needs are met, and make their coworkers aware of an impending admission and their role, if necessary, to help with the admission. Maintaining patient safety in the hospital is very important. The nurse must be observant and thoughtful in preparing the room, tailoring it to their patient's specific needs.

Developing a rapport with the patient is key to ensuring the patient makes the most informed decisions possible regarding their care. Orienting the patient to the hospital and the routines of care is also important in ensuring patient safety and comfort. Encourage patient participation in their care while in the hospital.

8.2 Patient Transfer

Patient transfers are an important transition point in care. They can be from one facility to another or within the same healthcare facility. There are many steps to a safe patient transfer that must be considered, and all members of the healthcare team should participate. Transfer to a higher level of care or within an acute care facility is very different from transfer to an extended care facility. All information is part of the patient's history, but the nurse ensures that report is focused on the level of care the patient needs at the facility to which they are transferring. Emphasize the information the receiving unit requires and ensure the rest of the information is available in the chart. Transfer is one more step in the healthcare journey from entrance to exit, so it is important that all details are conveyed and accurately communicated.

8.3 Patient Discharge

Discharge planning begins the moment a patient is admitted to a facility. Ensuring goals are being developed in the beginning allows all team members to be involved in the patient's care early on. Discharging patients from a healthcare facility is an important step in the healthcare process and requires education and collaboration to create a successful discharge plan that is tailored to the patient's specific physical, medical, psychosocial, and educational needs. Care coordination among all interdisciplinary team members from start to finish ensures that quality, effective patient-centered care has been provided. Sometimes a patient may discharge themselves, leaving the hospital AMA; in cases like this, it is important to educate the patient about the ramifications of their actions, and if the patient still decides to leave, the nurse must document the discharge professionally and thoroughly. There are numerous reasons for a patient to choose to leave against medical advice (AMA), and many times it is not because they do not want to receive care. Sometimes, it is because they have no other choice; for example, a single parent needs to take care of their children, or the financial provider of the family cannot miss work. The process for discharge from a home health agency is similar to that from any other healthcare facility. The patients' needs must have been met, goals have either been achieved or there has been major progression toward being achieved, and services have been deemed no longer necessary. Regardless of where discharge is occurring, the nurse needs to remember the importance of well-performed and documented patient education.

Key Terms

active listening a communication technique in which the listener intentionally places all their attention on the person speaking; this can include multiple forms of verbal (not interrupting, asking pertinent questions) and nonverbal communication (facing the person, eye contact)

acuity the severity and complexity of patient illness

acute care a type of inpatient medical care for patients who require monitoring and medical assistance from professionally trained healthcare providers

against medical advice (AMA) when a patient under inpatient medical care voluntarily leaves the hospital even

though the medical team does not recommend it; also the name of the documentation form that is placed in the patient chart if the patient insists on leaving the facility

ambulatory care patient care given in outpatient settings, which includes doctor's offices, clinics, and outpatient surgery centers

designated learner the patient or family member who accepts the discharge teaching and instructions given to the patient upon discharge

home health agency (HHA) a service that provides medical care in a patient's place of residence

intensive care unit (ICU) an inpatient hospital unit for patients who are critically ill and require very close monitoring

interfacility transfer the transfer of patient care between medical facilities; this can include from one acute care hospital to another, or from an LTAC or LTC facility to an acute care inpatient unit

long-term acute care (LTAC) facility a type of care for patients with long-term acute care needs

long-term care (LTC) facility (also, nursing home) a type of permanent medical facility that provides subacute care

medical-surgical unit an inpatient hospital unit for patients with medical needs that cannot be addressed in an ambulatory setting but are not severe enough to warrant critical care admission

nonverbal communication the use of gestures and facial expressions to convey meaning

nursing home a long-term care facility that provides permanent residence and medical assistance to its residents

percutaneous endoscopic gastrostomy (PEG) tube a tube that is inserted into a patient's abdomen to enable them to receive tube feedings; typically needed when a patient is unable to swallow food safely

power of attorney (POA) a legally binding agreement that documents that an individual gives authority to manage personal matters (such as medical care, financial business, or property) to a chosen representative, often a significant other or close family member

primary team the team that admits the patient and leads the discharge discussion

rounds a daily routine in the inpatient setting that involves a recap of the patient's hospital course from admission to the most recent update on their condition

SBAR the Joint Commission's best practice standard, an evidence-based communication tool that stands for Situation, Background, Assessment, Recommendation

step-down unit a transitional inpatient unit, usually when the patient is well enough to leave the intensive care unit but still requires more monitoring than a patient on the medical-surgical unit

sundowning a phenomenon where adults (often older) become confused when the sun sets

triage a method of evaluating patients according to the severity of their complaints and ensuring that patients with the most serious and potentially life-threatening symptoms that can be helped are seen first

verbal communication the use of words and language to convey meaning

voluntary consent documented consent from a patient that they agree to treatment

Assessments

Review Questions

1. A 45-year-old male complaining of "heaviness" in his chest and feeling "really tired" would likely need what kind of admission?
   a. ambulatory care
   b. observational
   c. acute care
   d. long-term care facility

2. A nurse in the emergency department is having a busy night and has to triage four patients. Which patient should be prioritized to be seen first?
   a. 89-year-old female with a hip fracture
   b. 55-year-old male who fell and hit his head, briefly losing consciousness
   c. 37-year-old male with a history of diabetes with blurred vision
   d. 18-year-old female who twisted her ankle during track practice and is crying in pain

3. A patient needs to go to the operating room for a procedure. Who on the healthcare team is required to obtain

informed consent from the patient for this procedure?

a. the nurse
b. the power of attorney
c. the chaplain
d. the provider

4. What is the term for the phenomenon of older adults becoming confused in the evening?

a. sundowning
b. dementia
c. Alzheimer disease
d. sunsetting

5. When does discharge planning begin?

a. two days before discharge
b. after the patient's procedure
c. when the patient is admitted
d. one day before discharge

6. A nurse works in an intensive care unit in a large metropolitan hospital. What patient information should be first considered when receiving report on a ventilated, unconscious patient transferring from an external acute care facility?

a. mobility status
b. continence
c. latest vital signs and labs
d. discharge plan

7. A patient has improved greatly and is transferring from the intensive care unit to the step-down unit. What is the least important patient detail to convey in report to the step-down unit nurse taking the patient?

a. mobility status
b. continence
c. latest vital signs and labs
d. list of the patient's belongings they brought with them to the hospital

8. What does SBAR stand for?

a. Situation, Background, Assessment, Recommendation
b. Status, Background, Action, Review
c. Situation, Brief history, Action, Response
d. Status, Barriers, Assessment, Recommendation

9. It is 9 a.m. and a nurse receives a tentative plan that a patient might transfer from the step-down unit to the general medicine floor this evening at 5 p.m. The patient's family is very involved, but because of work is unable to visit until at least 6 or 7 p.m. What time would be a good time to notify the family of the patient's transfer?

a. as soon as possible
b. 5 p.m.
c. when the definitive transfer order arrives
d. whenever they arrive

10. What is an example of a well-written SMART goal?

a. In two weeks, my blood pressure will be in a healthy range.
b. In two months, my blood sugar will be in a healthy range between 120 and 180 before eating meals.
c. In six months, I want to eat a healthier diet with fewer processed foods to reduce my blood sugar before meals to consistently read below 180 in order to lead a longer and healthier life.

d. In one year, I want to lose thirty pounds by running and exercising three times a week.

11. What patient should the nurse recommend have a secondary learner on hand when discharging from home health teaching?
   a. 65-year-old native English speaker with a learning disability
   b. 34-year-old student from China who is fluent in English and attends an American university
   c. 45-year-old native English speaker from a rural area
   d. 75-year-old immigrant from Mexico who cannot read English but speaks English fluently

12. A patient is leaving AMA. What is the most important thing to do before they leave?
   a. obtain prescriptions
   b. call security
   c. tell them they are making a mistake
   d. ensure they sign the AMA form and place it in the patient's chart

Check Your Understanding Questions

1. What is the difference between an acute care and ambulatory admission?

2. Why are guidelines from organizations such as CMS and TJC necessary regarding the healthcare admission process?

3. What is the benefit to preparing an SBAR report?

4. What are the steps required in preparing a patient transfer to another unit? How does that differ from transferring to another healthcare facility?

5. Describe the steps for discharge from a healthcare facility.

6. Does a patient leaving AMA need to sign the form? Why or why not?

7. Why are healthcare providers not allowed to prevent an alert, oriented, and decisional patient from leaving AMA?

Reflection Questions

1. What are three ways a nurse can develop a rapport with a patient?

2. Why does discharge planning begin with admission?

3. What are potential problems that can occur when patient transfers are not managed efficiently or well?

4. What does it mean when a patient leaves AMA? What are the potential issues surrounding an AMA discharge, and what can the nurse do to try to mitigate the circumstances?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #2: Part 1.
Do you think the patient should be admitted as observational or inpatient? Provide a rationale for your answer.

2. Refer to Unfolding Case Study #2: Part 2.
Give an example of an SBAR handoff from the emergency room nurse to the cardiology unit nurse.

What Should the Nurse Do?

1. Mehul works on a medical-surgical unit and is informed by his charge nurse that he is receiving an admission. The patient has diabetes and is being admitted from their nursing home for severe hypertension and hyperglycemia. From report, Mehul also knows that the patient has class 3 obesity (as determined by the BMI index) and has difficulty with mobility and performing his activities of daily living (ADLs) such as showering and going to the bathroom without assistance. Given this information, what kind of specialty equipment

should he have available?

2. A nurse is admitting a patient who has a history of falls and is being admitted for yet another fall at home. The ambulance has picked up the patient from their home in the suburbs and will be at the hospital in an hour. The patient is a 95-year-old female who lives with her adult daughter. She is generally alert and oriented but gets "pleasantly confused" at night. The patient is usually able to get around with a walker without falling, but in the past few months she has been more unsteady on her feet and has fallen twice. This evening the daughter heard a "thump" and found the patient lying on the floor next to her favorite chair. EMS was called and brought the patient in for observation. The nurse must set up the patient's room. What equipment and supplies should be available? What safety measures should be installed in the patient's room?
3. A nurse has gotten report on a patient who is transferring to the acute care general medicine unit from a nursing home. The report seems complete, but when the patient arrives, the nurse finds several discrepancies. What should the nurse do?
4. A nurse is transferring an 85-year-old patient, Marcia Hartman, to an external nursing facility. She was admitted to the hospital after falling at home and hitting her head. She had extensive bruising on her skin, and lacerations on her arm and leg where she fell. She also fractured her hip and had to have minor orthopedic surgery to fix it. She is mildly confused, but pleasant. She knows her name and her birthday but can be forgetful about where she is and what time it is. She is ambulatory again after her surgery, though fairly deconditioned; Marcia is able to get up with a walker and with two people assisting her. She usually doesn't try to get up without calling for help, but now and then the nurses have caught her trying to get out of bed or the chair. This most often happens when she needs to go to the bathroom, which after meals can be quite frequent. Her incision site from the surgery is mostly healed, she has a few surgical tape strips that hold her incision together, and she has no complaints of pain. What bothers her more are the lacerations and bruising; she gets very angry when nurses or doctors try to examine them. She denies that she is in pain when she gets angry, saying she's not a wimp. She responds well to acetaminophen, though, especially before going to bed. Her family is very attentive; they were extremely concerned when she was admitted, and they call frequently for updates. How would a nurse structure an SBAR report for Marcia?
5. The nurse is discharging an older patient from an acute care facility home under the care of an HHA. The patient has diabetes and a history of not managing their blood sugar very well. What are some questions the nurse would want to ask in order to assess health literacy and learning needs of this patient?
6. A primarily Spanish-speaking patient is being discharged with home health care. The patient has a surgical dressing that needs changing twice a week, but the home health nurse can only come once a week. The patient does not have reliable transportation to get their medications from the pharmacy because they live in a rural area. What should the nurse do to help ensure the patient receives their medications and necessary wound care? Whom should the nurse talk to? What other considerations should be taken into account to ensure this patient's safety?

Competency-Based Assessments

1. A nurse works in a critical care unit that has two patients and is about to receive a third from the ED. Their current patients are stable and are almost ready for transfer out of the ICU. One patient needs blood sugar checked in an hour; the other patient needs their evening meds. Both tasks need to happen before dinner is brought to the patients. The admission is coming in thirty to forty-five minutes. The patient is being admitted for severe hyperglycemia and will likely need an insulin drip. Describe how the nurse would ensure their patients' needs are met, and delegate specific tasks if necessary to colleagues in order to prepare for the admission.
2. Describe the differences in report between a nurse giving report to the ICU versus to a medical surgical floor.
3. Describe a complete discharge report.
4. Demonstrate how a nurse would conduct discharge teaching for a patient. How should a nurse educate a patient about their medications and ensure the patient understands instructions for following up with their healthcare provider?

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CHAPTER 9
Safety and Security

FIGURE 9.1 Nurses are often the first line of defense when it comes to identifying and preventing potential safety risks, such as falls or medication errors. (credit: "Holding Dad's Hand," by Deb/Flickr, CC BY 2.0)

CHAPTER OUTLINE

9.1 Safety: Individual and Environmental
9.2 Safety: Violence
9.3 Security: Privacy and Informatics

INTRODUCTION Nurses play a critical role in promoting safety for patients in various healthcare settings. From hospitals and clinics to long-term care facilities and homes, nurses are responsible for ensuring that their patients are receiving care in a safe and secure environment. Nurses also have a vital role in educating patients and their families on how to maintain safety both inside and outside the healthcare setting. Education can include providing information on how to prevent the spread of infections, how to properly use medical equipment, and how to manage chronic conditions to prevent complications. Nurses must also advocate for their patient's safety and privacy rights, ensuring patients are not subjected to any form of abuse or neglect and that personal information is kept confidential. By taking an active role in promoting safety and privacy, nurses can create an environment of trust and security that is essential for effective patient care.

Nursing students are preparing to enter a field that is dedicated to improving the health and well-being of others. However, it is important to remember that the nurse's safety and privacy are just as crucial as those of patients. In today's world, violence and threats to personal safety are unfortunately common occurrences which makes it essential for nurses to obtain the knowledge and tools to manage these situations effectively. This chapter explores the critical aspects of individual safety, privacy, and management of violence that every nursing student should be aware of to provide the best care possible while keeping themselves and their patients safe.

9.1 Safety: Individual and Environmental

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify safety concerns regarding the individual
- Identify safety concerns related to the environment
- Recognize how social determinants of health relate to one's safety

Nurses play a pivotal role in ensuring the safety and well-being of patients, as well as their own personal safety. In health care, there are many potential hazards and risks that can threaten patient safety, including medical errors, falls, infections, and medication errors. Similarly, these hazards may exist in the homes of patients and the environments in which we live and work. Nurses must be knowledgeable about these risks and take proactive measures to prevent them. Additionally, nurses are responsible for maintaining their own physical and emotional health, as they are often exposed to high levels of stress and emotional strain in their work. In this way, safety and health are intertwined, and nurses must prioritize both in their daily practice.

Choices and actions regarding safety can be influenced by many factors; this might include situations we are in, where we live, our income, and our education. These factors are known as the social determinants of health (SDOH). This section explores various aspects of individual safety and the tools nurses need to use to respond to safety concerns.

Individual Safety

Safety is a basic human need and always receives priority in patient care. In prioritizing patient needs, nurses refer to Maslow's hierarchy of needs (Figure 9.2), often concentrating on the lower two tiers of the pyramid, as security is closely linked with basic physiological requirements.

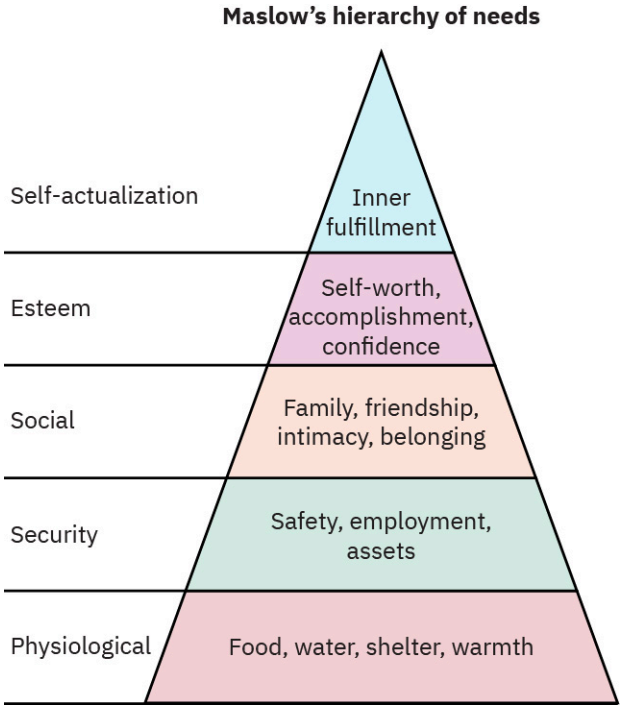


FIGURE 9.2 Maslow's hierarchy of needs suggests that security and safety are fundamental requirements for individuals to fulfill their basic physiological and psychological needs. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Consider the following scenario: You are driving back from a relaxing weekend at the lake and come upon a fiery car crash. You run over to the car to help anyone inside. When you get to the scene, you notice that the lone person in the car is not breathing. Your priority is not to initiate rescue breathing inside the burning car but to move the person to a safe place where you can safely provide CPR. This is an illustration of how safety is intertwined with nursing care.

The term **individual safety** can be defined as the state of being free from physical or psychological harm. Individual safety is a fundamental concern across the life span. Individual safety concerns are unique to each developmental stage and are influenced by many different factors, including individual differences, environmental factors, and cultural norms. To promote and maintain individual safety, consider the developmental stage of the individual and plan interventions that address safety concerns in a holistic manner. For example, Barbara is an 85-year-old female living alone. Having encountered several falls, her family expresses concern for Barbara's safety and urges her to consider relocating to an assisted living facility. Barbara wants to remain in her home where she feels safe; there are no concerns regarding her competency to make decisions regarding her care. This is an example of a situation where nurses must balance the developmental needs of the patient within a holistic framework. While Barbara might have experienced a few instances of falling, there are no other indications that she is not safe in her home, and she may only need minimal assistance to maintain her residence. The nurse works to balance the safety of a patient with the patient's need for independence.

Individual safety encompasses various aspects of safety, such as occupational safety, environmental safety, and personal safety, and all are crucial for maintaining good health:

- The goal of **occupational safety** is to protect workers from injury, particularly those who work in high-risk industries such as health care. Workplace injuries and illnesses cost U.S. businesses approximately $170 billion per year (Occupational Safety and Health Administration [OSHA], n.d.).
- The practices and measures taken to promote **environmental safety** are geared to protecting and preserving the natural environment, ecosystems, and human health from potential hazards and harmful impacts to health. Exposure to environmental hazards such as air pollution, water pollution, and hazardous waste can have significant impacts on an individual's health. For example, one study found that exposure to air pollution is associated with an increased risk of heart disease, stroke, and respiratory illnesses (Landrigan et al., 2018).
    - Test one
    - Test two
- The goal of **personal safety** is to keep oneself free from injury. This includes taking measures to prevent accidents and injuries in everyday life, such as wearing seat belts while driving, using protective equipment during sports and recreation, and avoiding risky behaviors such as smoking and drug use.

Personal safety and individual safety, while not synonymous, share similarities. Individual safety pertains to safety measures designed to establish frameworks supporting individuals' safety, while personal safety is reflected in the choices individuals make to implement safeguards for themselves. For example, as the COVID-19 pandemic waned, masking requirements were loosened; however, there was still recognition of the need to provide guidelines for those who were more at-risk. The guidelines advocating for mask usage in certain situations demonstrate individual safety, whereas personal safety involves the individual's decision to wear a mask. In nursing, individual safety and occupational safety go hand in hand. The physically demanding nature of nursing work and the exposure to infectious diseases put nurses at a heightened risk of workplace injuries. Individual safety measures adopted by nurses play a crucial role in safeguarding them during the execution of their healthcare duties, ensuring their well-being to continue providing care for patients.

Risk Factors Affecting Individual Safety

Individual risk factors are considered correctable or modifiable because they are often influenced by behaviors, choices, or lifestyle habits that individuals can consciously change or improve. For instance, nurses are advised to wear gloves during tasks involving potential blood exposure. If a nurse is observed not adhering to this practice, education and reinforcement of proper procedure can be implemented to modify their behavior. Individual risk factors frequently contribute to healthcare-related issues. Addressing these individual risk factors is crucial for maintaining an individual's safety.

Risk factors can fall into two categories: modifiable and nonmodifiable. A **modifiable risk factor** refers to a factor that can be altered or controlled by an individual or society. Modifiable risk factors include behaviors and lifestyle choices, such as diet, exercise, smoking, alcohol consumption, and exposure to environmental pollutants. They can be modified through education, lifestyle changes, and policy interventions, among other means. A **nonmodifiable risk factor**, on the other hand, cannot be controlled or altered by an individual or society. Nonmodifiable risk factors include genetic predispositions, age, gender, and certain geographical and climatic conditions. These factors are beyond an individual's control and may be inherent or innate, making them less responsive to intervention. In

general, modifiable risk factors tend to be more responsive to intervention and change, whereas nonmodifiable risk factors require a different approach to manage their impact on one's health.

Age and Developmental Considerations

Age and developmental factors play a crucial role in individual safety, influencing an individual's ability to comprehend and respond to potential hazards. Nurses should be knowledgeable about safety risks associated with age and developmental stages, as the types and frequencies of accidents vary among different age groups (Centers for Disease Control and Prevention [CDC], 2020a).

Regardless of a person's age or developmental stage, nurses must be ready to discuss mental health, family, and social connections with every patient. Nurses can prepare for these conversations by having community resource information readily available to direct any patient in need to the right entity for help. Nurses do not have all the answers, but they should always be knowledgeable about where to refer patients for help.

Children

Drowning is the leading cause of death in children ages 1 to 3 years. Motor vehicle accidents (Figure 9.3), falls, choking, and accidental poisoning are also safety concerns for this age group. Infants and toddlers are curious, but they lack the judgment to recognize the dangers of their actions, so childproofing the home and providing adult supervision are essential for this developmental age group (CDC, 2023c).

FIGURE 9.3 An infant car seat is used to protect infants in the event of a motor vehicle accident. Nurses help educate parents about the proper use, positioning, and installation of car seats. (credit: "ARISE Newborn in Car Seat 144049.jpb," by Arise project, CC BY 4.0)

For children ages 4 to 11 years, motor vehicle injuries are a major cause of unintentional injury, along with drowning and poisoning. This age group is more aware of dangers and limitations, but adult supervision is still important. The nurse should educate parents of school-aged children about safety seats, booster seats, or shoulder seat belts while riding in the car (CDC, 2023c). Bicycle accidents are also a common concern in this age group. Many bicycle accidents involve the head or face because of the lack of helmet use. Nurses should provide education to school-aged children regarding bicycle safety and helmet use (Figure 9.4).

FIGURE 9.4 Bicycle helmets are a key means of protecting oneself from injury, regardless of age. (credit: "Amelia and Reese Riding," by Donnie Ray Jones/Flickr, CC BY 2.0)

LINK TO LEARNING

The CDC provides educational materials and comprehensive information about concussion and traumatic head injuries (https://openstax.org/r/77headsupindx) for parents, coaches, players, and healthcare providers as part of their "Heads Up" program.

Because this age group is beginning to enjoy more independence, education on how to recognize and respond to potentially dangerous situations with strangers should also be provided. Parents should also be educated about the AMBER Alert system that can be activated if a child is missing and believed to be kidnapped or in danger. The AMBER Alert system uses the resources of law enforcement and the media to notify the public about a possible abduction or a missing child in danger.

Nurses must also be aware of signs of maltreatment and child abuse because millions of children are affected each year. Child abuse includes physical, sexual, and emotional abuse and neglect. After abuse or violence, many children develop mental health problems, including depression and post-traumatic stress disorder (American Academy of Child and Adolescent Psychiatry [AACAP], 2021). These children may also have serious medical problems, learning problems, and problems getting along with friends and family members. Every state has laws that require healthcare professionals to report suspected child abuse no matter what form this abuse takes (AACAP, 2021).

LINK TO LEARNING

Read more about trauma and child abuse within the Trauma and Child Abuse Resource Center (https://openstax.org/r/77traumaabuse) provided by AACAP.

Children between the ages of 6 to 11 years are often an at-risk group when it comes to safety, as they are not yet fully developed physically, mentally, or emotionally and have a greater risk of accidents such as drowning, burns, poisoning, or other injuries. These risks may occur in the form of accidents or sports injuries at home, at school, or in their communities. Children in this age group are more likely to experience social issues such as bullying, peer

pressure, and some forms of social exclusion. They are also at risk for physical and emotional abuse in the home, and this needs to be considered when performing assessments. These can be difficult safety concerns to manage as the child may be reluctant to discuss these issues, and early indicators for parents and caregivers may come in the form of behavior changes.

Nurses must take a role in educating parents and caregivers about safety protection for children. It is important for parents and caregivers to take appropriate precautions to protect children, such as supervising them, teaching them about safety, and providing a safe physical environment, along with addressing bullying and any suspicions of abuse.

Adolescents

Motor vehicle accidents are a leading cause of death for adolescents. Teens ages 16 to 19 years are three times more likely to be in a fatal crash than drivers older than age 20 years. Adolescent males are twice as likely to die in a motor vehicle accident than females of the same age (CDC, 2023c). Texting while driving is a common cause of distracted driving and accidents in adolescents. Because much of an adolescent's time is spent away from home, it is difficult for parents to control many of the decisions that adolescents make. Nurses can assist in providing safety education to adolescents by teaching them how and why we use seat belts, why speed limits must be obeyed, and why they should never text while driving (CDC, 2023c). Substance use is another significant concern in the adolescent population and is discussed in 9.2 Safety: Violence.

LIFE-STAGE CONTEXT

Risk-Taking Behaviors of Young People

It is said that the young often feel they are invincible. As a result, they may make choices that are not in their best interests to "fit in" with their peers. Adolescents lack developed judgment skills at this age and tend to engage in risk-taking behaviors, for example, smoking and trying alcohol or drugs. Adolescents may take risks when performing activities such as skateboarding. Often, they fail to grasp the significance of potential negative outcomes from these activities. This is part of the expected developmental stages for adolescents where they are learning and discovering who they are. This can be difficult for parents and healthcare providers, and it is important to know that adolescents can be encouraged to foster this risk-taking in healthy ways, for example, via activism or athletic endeavors (UCLA Center for the Developing Adolescent, 2023).

Adults

The leading cause of death for adults in the United States is heart disease, followed by cancer and COVID-19 (CDC, 2023b). Being an adult does not mean one is immune to the need to consider individual safety. Adults may still engage in risk-taking behaviors, including the use of substances, that can put them at risk. Adults are also at risk of experiencing workplace injuries, particularly young adults who may just be entering the workforce. Some adults may be at increased risk of hazards related to financial instability and personal safety in relationships and their communities. Adulthood may also be a time when individuals begin to experience life with chronic disease, which can impact safety from a physical, cognitive, or emotional perspective (CDC, 2019a). It is important for adults to consider their individual safety risks and take precautions to maintain good health and be aware of potential risks around them.

Older Adults

Falls and motor vehicle accidents are the leading causes of injury in older adults. However, several other issues pose significant hazards for this population, such as fires, accidental overdosing on medications (due to poor eyesight and confusion), abuse, and being taken advantage of financially (CDC, 2021). Older adults are also at risk for age-related changes, such as mobility changes, that can create a safety risk. Older adults are more likely to live on their own, increasing their vulnerability, whether that be from injury or events such as elder fraud (financial exploitation or deceptive practices specifically targeting older individuals). Older adults living alone are at greater risk of experiencing depression linked to social isolation. Those living alone, especially older adults with dementia, may encounter challenges in maintaining hygiene, nutrition, and household tasks. For instance, a person living with dementia who is not eating may experience the effects of malnutrition (Alzheimer's Association, n.d.). When assessing an older adult who is living alone, the nurse should ask questions regarding their ability to complete activities of daily living.

Lifestyle and Behavior Considerations

Protecting the body from harm, injury, or death is key to maintaining physical safety. Personal actions taken toward one's health influences individual safety. Adopting healthy lifestyle practices, such as eating a healthy diet, exercising regularly, getting adequate sleep and rest, and limiting or avoiding the use of drugs and alcohol, has a positive impact on individual safety. Engaging in high-risk activities, such as bicycling without a helmet or driving without wearing a seat belt, can negatively impact safety. Individual safety must also be considered when engaging in local and global community activities. Maintaining infection prevention, following travel precautions, and proactive planning safeguards individual health and contributes to the overall well-being of communities, thereby minimizing the risk of transmitting illnesses.

LINK TO LEARNING

The World Health Organization provides information concerning risks when traveling (https://openstax.org/r/77travelrisk) in a question-and-answer format. This website provides travelers with helpful information regarding health and other risks, such as political unrest. Travelers can then take precautions or make decisions regarding planned travel to ensure they remain safe.

Health Knowledge Deficits

A **health knowledge deficit** is a lack of information or understanding regarding health-related topics that can impact an individual's ability to make informed decisions about their health and well-being. Such deficits can result in inadequate self-care, inappropriate use of medications, ineffective management of chronic conditions, and poor adherence to medical advice or treatment plans (Berkman et al., 2011). Examples of health knowledge deficits include the following:

- lack of knowledge about healthy lifestyle behaviors, such as proper nutrition, exercise, and stress management
- insufficient understanding of medical conditions, their causes, symptoms, and treatment options
- inadequate knowledge about medications, including their proper use, potential side effects, and interactions with other drugs
- poor understanding of risky health behaviors, such as smoking or excessive alcohol consumption
- insufficient knowledge about preventive measures, such as vaccines, cancer screenings, and regular checkups
- lack of knowledge about where to find accurate, unbiased, and credible health information

Addressing health knowledge deficits is crucial for promoting optimal health outcomes and reducing the risk of chronic diseases and other health problems. This can involve providing education, counseling, and support to individuals, as well as promoting health literacy and patient empowerment.

Individuals with knowledge deficits have unique safety risks to address. Those living with knowledge deficits may be at risk of physical harm due to a lack of understanding related to the actions they take. A patient with a health knowledge deficit may have difficulty understanding health teaching; for example, a patient may not understand they should not get a cast wet because water dissolves the stability of the plaster. Nurses need to assess the patient's understanding of education. This could include asking the patient to repeat the steps of a procedure back to them or demonstrating how to perform an activity. This is known as a **teach-back method**, a way for healthcare providers to present information to patients clearly and determine the patients' understanding of the information (Agency for Healthcare Research and Quality [AHRQ], 2021). The goal is to make sure patients and their families have received and understood important healthcare information. After providing information to the patient and family, the healthcare provider asks them to repeat the information back, in their own words (AHRQ, 2021). This method allows nurses to hear what the patient and family understood and clarify any misinformation. To address knowledge deficit, the nurse must teach the patient what to do and what not to do. In the earlier example of not getting a cast wet, it is possible the patient heard "don't take a bath." A better way to prevent misunderstanding is for the nurse to follow "don't get the cast wet" with "this is how you can shower or take a bath with a cast." Then, have the patient perform a return demonstration of how they would protect their cast while taking a bath.

PATIENT CONVERSATIONS

Diabetes Education

Scenario: Luisa, a 65-year-old female who was recently diagnosed with type 2 diabetes, is admitted to the hospital for uncontrolled blood glucose levels. The nurse walks into the patient's room to conduct a morning assessment.

Nurse: Good morning, Luisa. How are you feeling today?

Patient: I'm okay, just a bit tired.

Nurse: I understand. I wanted to talk to you about managing your diabetes. Do you have any questions or concerns about your condition?

Patient: Actually, yes. I don't know much about diabetes or how to manage it.

Nurse: That's perfectly okay. Diabetes is a complex condition, but with the right education and support, you can manage it effectively. Let's start with the basics. Do you know what causes diabetes?

Patient: Not really, no.

Nurse: Diabetes occurs when your body can't produce or use insulin properly. Insulin is a hormone that helps regulate your blood sugar levels. When your body can't produce enough insulin, or if it can't use it properly, your blood sugar levels can rise too high. This can cause a range of complications, including damage to your nerves, eyes, and kidneys.

Patient: I see, so what can I do to manage my diabetes?

Nurse: There are a few things you can do. First, you'll need to monitor your blood sugar levels regularly. This involves testing your blood using a blood glucose meter. We'll show you how to do this before you leave the hospital. Second, you'll need to make some changes to your diet. This means reducing your intake of sugar and carbohydrates and increasing your intake of fruits, vegetables, and whole grains. Finally, you'll need to stay active. Regular exercise can help regulate your blood sugar levels and improve your overall health.

Patient: That all sounds very overwhelming.

Nurse: I understand that it can seem overwhelming at first, but we're here to support you every step of the way. We'll provide you with resources and education to help you manage your diabetes effectively. I will bring them next time I come in your room. I will also have our diabetic educator come visit with you later today.

Patient: Thank you, I appreciate your help.

Nurse: Of course, Luisa. We're here to help you live a healthy and fulfilling life with diabetes. Do you have any other questions or concerns for me?

Patient: No, not currently. I will let you know after we go over the resources you are bringing regarding my food choices, and I will wait for the diabetic educator to come by and visit with me before being discharged. I look forward to learning more about how to better manage my health. Thank you.

Alterations in Physical Health

Health and safety are interrelated aspects of an individual's life. Health can impact safety, and safety can impact health. A person experiencing physical health challenges may face an increased risk to personal safety because of illness or injury. Changes in one's ability to perform activities safely on their own may increase risk of injury. For example, a person who now has balance issues and showers without assistance may be at increased risk for a fall.

Side effects from necessary medications which lead to alterations in physical health may also increase one's risk for injuries or accidents. Some medications are known to cause drowsiness, necessitating a warning label informing those taking it to take care when operating machinery or driving vehicles. Medications, such as those used to treat pain, may also impair an individual's judgment and response times. It is important for individuals to be aware of any risks associated with medications and to take necessary precautions to prevent injury or accidents.

LIFE-STAGE CONTEXT

Narcotic Use and Risk of Falls in Older Adults

The use of certain medications, such as narcotics, is sometimes necessary to manage pain. With aging, there is an increased likelihood of requiring medical interventions like surgery or other treatments. Consequently, narcotics may be prescribed to aid in the recovery process. Narcotics can increase the risk of falls, particularly for older adults; thus, they must be prescribed and used with caution. Patients should be educated regarding their increased fall risk and exercise caution when using these medications (Virnes et al., 2022).

Impaired Mobility

Maintaining individual safety is of particular importance for those living with mobility issues. Impairments can affect an individual's ability to move safely within their environment and community, making them more susceptible to accidents or injury. The home is often the main place where injury can occur (WHO, 2018). A well-decorated home may have rugs, a lot of furniture, and dim lighting. While attractive, these features increase the risk of falls in compromised patients. To keep oneself safe at home, it is important to do the following:

- Clear pathways going into and around the home to ensure there is no clutter or other tripping hazards, such as loose paving stones.
- Install handrails on stairs both inside and outside of the house to help with stability and prevent falls.
- Install grab bars and nonslip mats in the bathroom to prevent falls.
- Ensure the bed is kept at a reasonable height to make it easy to get in and out.
- Be careful with the use of throw rugs that can be a fall hazard.

Individuals must also consider outdoor safety in their communities. Sidewalks can pose a risk if they are uneven or have cracks or obstacles embedded into their surface. For regions that experience snow and ice, sidewalks can be particularly dangerous to navigate. Those living with mobility issues should consider how they will navigate public transportation to ensure they are utilizing services that are accessible and support their mobility. Individuals living with mobility concerns should communicate with those around them and have a plan in place in case of emergency to ensure their safety.

LIFE-STAGE CONTEXT

Mobility Concerns for Older Adults

Mobility becomes more challenging with age, putting older adults at risk for falls. Nurses should observe older patients as they walk into the room to determine any challenges with gait or balance. The nurse should consider utilizing a well-created questionnaire when preparing a patient for discharge. Each question should be clear enough to reveal any possible hazards or barriers to the patients' mobility and safety when they return home. Simply asking if they have running water and indoor plumbing is not enough. Even patients who are financially privileged can have barriers to mobility and safety. Consider a very successful patient who lives in an affluent historic district. They might not be able to walk safely outside because historic districts tend to have large trees that disrupt the sidewalk or have no sidewalks at all. Nurses must ask clear questions to obtain a clear picture of what the patient will experience when they return home.

Altered Sensory Perception

A vital aspect of functioning in everyday life is sensory perception, defined as the ability to see, hear, touch, taste, and smell. Alterations in sensory perception can have a significant impact on an individual's ability to navigate their environment. Any changes to these senses create risk for the individual; for instance, a person who cannot smell may not notice the first signs of something burning in their home. Table 9.1 describes some common sensory perception impairments and how to address them.

Sensory Impairment	Impact	Ways to Address
Visual impairments, including full or partial blindness	May not have the ability to safely navigate personal and public environments	Using a white guide cane (white indicates blind or visually impaired), guide dogs, or other assistive devices to help with navigation
Hearing impairments, including complete or partial deafness	May not hear alarms or the voices of people calling out safety warnings	Using assistive devices, such as hearing aids; having an emergency plan in place to ensure safety
Touch impairments, not able to sense or feel changes in temperature	Can create risks for burns and frostbite or other potential hazards in the environment	Monitoring external temperatures and taking measures to protect from extreme temperature changes (e.g., use a thermometer to obtain a water temperature when bathing to prevent burns from hot water)
Taste and smell impairments	Impact ability to sense hazards, such as a gas leak or food that has spoiled	Asking a caregiver to smell foods to ensure they are not spoiled; having a trained therapy dog that can detect harmful odors, such as gas leaks in the home

TABLE 9.1 Common Sensory Perception Impairments

Alterations in Psychosocial Health

An individual's **psychosocial health** refers to the psychological and social aspects of that individual's overall health and well-being. It encompasses the interplay between a person's mental health and their relationships with others and the world around them. Psychosocial health is crucial for a person's overall health, as it impacts their ability to cope with stress, form relationships, and make decisions. A person with good psychosocial health tends to have a positive outlook on life, feel socially connected, and be able to adapt to life's challenges in a healthy way. Poor psychosocial health can lead to a range of health alterations, encompassing mental health conditions like depression and anxiety, social isolation, substance misuse, and physical health issues such as high blood pressure and heart disease. A lack of social support and poor coping skills can also lead to a higher risk of chronic diseases, such as diabetes and obesity.

Stress

Stress is a natural part of life; we all experience stress at varying points. However, too much stress can create unsafe environments for individuals. Chronic stress can affect an individual's physical, emotional, and mental well-being, which may decrease their ability to respond to potential hazards or make safe decisions. See Table 9.2 for examples of how different types of stress impact one's health. An individual living with anxiety may have difficulty completing a task that requires focus and attention, thus leading to increased risk of an accident. Those living with diagnoses such as phobias or depression may find their judgment clouded, making it difficult to adequately access risk.

Type of Stress	Example	Impact on Individual Safety and Health
Physical stress	Overexertion	• Increases the risk of high blood pressure, stroke, and heart disease • Weakened immune system due to chronic stress, increasing the risk of illness • Symptoms can include shortness of breath or chest pain
Mental health stress	Loss of one's job	• Increases the risk of depression, anxiety, and other mental health conditions • Can impact an individual's ability to think clearly and make safe decisions • May be situational or related to a mental health diagnosis • May experience trouble concentrating on work • May be more emotional or quick to anger • May find themselves unable to engage in activities
Social or behavioral stress	Loss of an important relationship	• More likely to engage in impulsive behaviors as a coping mechanism • May include reckless driving, using substances, or engaging in risky sexual behavior • May arise from experiences at school or in the workplace (e.g., bullying) or may be linked to an identifiable diagnosis; results in challenges in social engagement • May withdraw or rely on drugs or alcohol to manage feelings in social situations

TABLE 9.2 **Stress and Impact on Individual Safety**

To effectively manage one's psychosocial health to prevent injury, individuals should understand their own response to stress as well as steps they can take to mitigate risk factors. One can manage this by practicing self-care techniques, reducing stress, and addressing the emotional and psychological factors that are harming health. Self-care can include meditation, exercise, yoga, spending time in nature or with friends, and sleep. Remaining healthy from a psychological and emotional perspective also means seeking help and support when needed.

Cognition

The mental processes that enable individuals to think, learn, remember, and make decisions to act are referred to as cognition. Alterations in cognition can result in changes in an individual's ability to think clearly and act appropriately. Conditions like dementia or mild cognitive impairments can hinder an individual's ability to recognize potential hazards and make safe decisions, as they may be unaware that their actions pose risks. This is important for caregivers and family members to understand. The patient is not purposely engaging in risky, careless behavior, and their actions do not indicate a lack of intelligence. They are experiencing a change in their mental processes and must be treated with respect while the situation is being resolved. The use of medications like pain relievers and sedatives, intended for pain management or sleep assistance, can negatively impact an individual's cognitive abilities and judgment. Sleep deprivation, which may occur during illness or if an individual is a caregiver, can impair an individual as much as using substances. Lack of adequate sleep can make it difficult to think clearly and make safe decisions.

Individuals concerned about cognitive changes can take measures to ensure a safe environment. These include getting sufficient sleep and rest, conducting medication reviews with a pharmacist, minimizing or discontinuing use of substances that may impact cognition (e.g., sedatives and narcotics), maintaining open communication with caregivers and family members, and establishing an emergency response plan. Caring for a loved one with dementia can increase stress for caregivers, and in turn, increase the risk of illness for them. Families should seek professional intervention when a loved one is diagnosed with dementia to ensure both the patient and family receive

adequate support and services. This may include respite services, providing caregivers with opportunities to take a break and participate in self-care activities. Professional assistance may be required to begin the process of in-home care or long-term placement in a care facility.

Suicide Risk

Suicide is a leading cause of death and a significant public health concern. Most institutions require nurses to complete a suicide risk assessment for all patients, utilizing evidence-based tools to evaluate their potential risk of self-harm (CDC, 2021). For any patient who is at risk of suicide, the nurse must include the patients' support system and initiate a safety plan. Suicide risk can be influenced by several factors, including mental health conditions, life events, and having access to substances or physical objects that could be used to cause harm. Individuals at risk of suicide may be more likely to engage in risky behaviors due to an underlying mental health crisis.

Environmental Safety

The environment plays a crucial role in health and well-being. Environmental factors such as air quality, water quality, and exposure to hazardous materials can all have a significant impact on individual health. It is important for individuals to be aware of local environmental conditions and concerns and to take the necessary steps to reduce the risks.

The environment can encompass several things: it can be used to describe one's home and surroundings, a neighborhood, or a work setting. The environment can also describe work settings or the community as well as the land we live on, the water we drink, and the air we breathe. Each of these environmental settings has an impact on individual and collective health. For example, a train derailment may cause the release of toxic chemicals into the land and water surrounding a community. A patient in the suburbs might have access to a walking path through a large park where vehicles are prohibited, while a patient in a more urban area may have to continually cross streets with dangerous traffic. Crime rates and the availability of community support can influence safety; for example, a patient in an area with frequent street crime may feel uncomfortable taking a daily walk or going to the pharmacy. Geography can also impact safety. For example, those living in rural communities may have less access to the infrastructure and resources necessary to remain safe. The geographical remoteness of these areas often results in longer response times for emergency personnel to reach the location of an incident, which may be critical in situations where immediate medical attention or intervention is required. Living in areas where the air quality is poor or where there is a greater risk of natural disasters, such as wildfires or flooding, impacts personal safety.

Factors Affecting Environmental Safety

Environmental factors can be broadly classified into two categories: modifiable and nonmodifiable factors. Modifiable environmental factors are linked to pollution levels and occupational exposure through the influence of individual choices and behaviors. Lifestyle and behavior choices, such as transportation methods, use of energy sources, and adherence to safety practices in the workplace, for instance, can directly impact pollution levels and occupational exposure. These factors can be influenced through various means, including policy interventions, education and awareness campaigns, and personal behavior changes. Nonmodifiable environmental factors, on the other hand, are determined by geography, climate, genetics, and age. Examples of nonmodifiable environmental factors include natural disasters, genetic predisposition to certain diseases, and the age-related decline in immune function. In general, modifiable environmental factors are more responsive to intervention and can be altered to promote health and prevent disease. While some environmental factors, such as exposure to toxic chemicals or infectious agents, can have an acute and immediate impact on our health, others may have more insidious effects that only become apparent over time, such as prolonged exposure to certain environmental factors that lead to chronic diseases and other health problems (Table 9.3).

Factor	Potential Outcomes	Interventions
Air quality	Can cause health problems, such as respiratory disease, cardiovascular disease, and cancer. Air pollution or poor ventilation can increase the risk of suffocation. For instance, a person with severe asthma may experience a life-threatening respiratory episode if exposed to an irritant.	Monitor air quality and avoid exposure if the air quality is poor. Individuals with known respiratory disease may require the use of medications to assist in breathing when the air quality is poor and should be educated to stay indoors as much as possible.
Water quality	Exposure to contaminated water can cause gastrointestinal issues, skin irritation, and neurological damage.	Monitor water quality alerts, test the quality of well water, use water filters, and take precautions when traveling.
Natural disasters	Individuals who live in areas that are more likely to experience flooding, fires, hurricanes, or earthquakes are at higher risk for harm.	While these events are out of the individual's control, it is important to take action to minimize potential harm.
Hazardous materials	Exposure to hazardous materials such as lead, asbestos, or chemicals can cause serious health implications or death.	Be aware of safety labels on chemicals and cleaning products, reduce exposure to harmful substances, and properly dispose of any hazardous materials.
Political and social factors	Living in areas where there is political unrest, wars, or terrorism increases an individual's risk.	These events are out of the control of the individual, but it is important to be prepared to minimize their risk.

TABLE 9.3 Factors Affecting Environmental Safety

Risk for Falls

Falls are a common and serious problem for many individuals, and even more so for older adults. Falls can result in serious injuries such as broken bones, head injuries, and even death (AHRQ, 2023). Physical factors such as poor balance, weak muscles, and limited mobility can increase the risk of falls. Each year, 3 million older people are treated in emergency departments for fall injuries, and over 800,000 patients a year are hospitalized because of a head injury or hip fracture resulting from a fall (CDC, 2023a). "Prevent residents from falling" is one of the National Patient Safety Goals for nursing care centers (The Joint Commission, 2023). Many older adults who fall, even if they are not injured, become afraid of falling. This fear may cause them to limit their everyday activities. However, when a person is less active, they become weaker, which further increases their chances of falling (CDC, 2020a).

LIFE-STAGE CONTEXT

Preventing Accidents in Older Adults—Implementing a Unique Model

The CDC (2020b) developed a program called "STEADI: Stopping Elderly Accidents, Deaths & Injuries" to help reduce the risk of older adults falling at home. This model was created in response to fall risk as well as a desire to implement a strengths-based model to assist older individuals to stay safely at home. The model consists of three screening questions to determine risk for falls:

- Do you feel unsteady when standing or walking?
- Do you have worries about falling?
- Have you fallen in the past year? If yes, how many times? Were you injured?

If the individual answers "Yes" to any of these questions, further assessment of risk factors is performed. This additional assessment supports nurses and other healthcare providers in implementing measures to support people in remaining safe in their homes.

Many conditions contribute to patient falls, including the following (CDC, 2020a):

- lower body weakness
- vitamin D deficiency
- difficulties with walking and balance
- medications, such as tranquilizers, sedatives, antihypertensives, or antidepressants
- vision problems
- foot pain or poor footwear
- environmental hazards, such as throw rugs or clutter that can cause tripping

Most falls are caused by a combination of risk factors. The more risk factors a person has, the greater are their chances of falling. Many risk factors can be changed or modified to help prevent falls.

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 3

Refer back to Chapter 8 Admission, Transfer, and Discharge for Unfolding Case Study Parts 1–2 to review the patient data. A 65-year-old patient was admitted to the cardiology unit for observation after a suspected myocardial infarction. The patient went to the cardiac catheterization lab, where two coronary artery stents were successfully placed. The patient has just returned to her room after the procedure. During morning rounds, the team noted the patient appears restless and agitated. She repeatedly attempts to get out of bed without assistance, despite reminders to call the nurse before getting up.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, coronary artery disease **Family history:** Mother deceased, father alive with severe dementia; two healthy sons in their early 40s **Social history:** Previous divorce, married to current husband, George, for twenty years **Allergies:** Latex **Current medications:** • Aspirin 81 mg PO once daily • Metformin 500 mg PO twice daily • Lisinopril 10 mg PO once daily • Atorvastatin 30 mg PO once daily
Flow Chart	**1200: Assessment** Blood pressure: 135/82 mm Hg Heart rate: 97 beats/min Respiratory rate: 20 breaths/min Temperature: 98.6°F (37°C) Oxygen saturation: 95 percent on room air Pain: 5/10 (headache)
Nursing Notes	**1200: Assessment** Patient reports headache pain rated 5/10 on numerical scale. Oxycodone previously administered at 1030 for postprocedure pain.

1. Recognize cues: What cues are most concerning to the nurse at this time?
2. Analyze cues: Based on the recognized cues, what safety concerns should the nurse have?

3. Prioritize hypotheses: What factors do you think may be contributing to the patient's inability to remain safely in bed?

Risk for Fires

Fires are frightening and pose a significant risk for serious injuries, loss of property, and even death. The kitchen poses the highest likelihood of fire hazards within a home. These can occur from improperly using equipment, leaving cooking food unattended, having flammable materials near stoves or open fires, and not turning off appliances when they are not in use. Another common fire hazard can occur from smoking in bed, falling asleep while smoking, and improperly disposing of smoking equipment. Heating sources also pose a risk to safety, particularly items such as unattended space heaters, fireplaces, and candles. By taking steps to reduce the risk of fire and having fire safety equipment present in the home and workplace, individuals can decrease their risk.

Risk for Poisoning

Poisoning is a serious public health issue and can result in serious injury or death, particularly in small children. Household hazards such as cleaning products, laundry products, or medications can pose a poisoning risk. Additionally, consumption of contaminated food or beverages can lead to food-related poisoning, while exposure to lead or carbon monoxide in homes or workplaces can result in fatal outcomes. There are numerous steps individuals can take to ensure their own safety and prevent illness, injury, or death from poisoning. One of the first steps is education. Patients must be taught which products in the home may be toxic if they are ingested, such as household cleaning products or laundry pods. These products contain warning labels, and any products that are considered toxic or harmful should be stored in a safe place away from children and pets. Keep poison control numbers nearby in case of emergency, and recognize when to get assistance.

Risk for Suffocation

Suffocation occurs when an object impairs an individual's airway. Infants and young children are most susceptible to the risks of suffocation. Choking hazards, like small toys or food, pose a risk of becoming lodged in a child's airway. Additionally, suffocation may occur if an infant or young child's airway becomes obstructed during sleep, commonly attributed to bedding. Nurses can educate parents on safe sleeping practices to reduce the risk of suffocation for infants. This includes placing the infant on their back to sleep, using firm mattresses, avoiding pillows or additional bedding, refraining from co-sleeping, ensuring the infant is at a comfortable temperature, and keeping soft or loose objects away from the sleeping area (Moon, 2022).

Other risks for suffocation for children include scarves or ties from clothing, such as hoodies, becoming caught and playing with items that might become caught around their throat. Ensure children do not have coats or mittens with strings that might get caught while playing on outdoor equipment causing suffocation and ensure individuals do not perform risky activities with items around their neck or mouth (Nemours KidsHealth, 2023).

Adolescents and adults also experience suffocation risks, most often from inhalation or aspiration of foreign substances or food and inflicted injury from strangulation or hanging (Sasso et al., 2018). Educate adolescents not to engage in dangerous or life-threatening activities, such as social media trends that may be dangerous and are not proven safe. For adults, ask if they indulge in air deprivation or suffocation games. Discuss educational resources to help educate patients on suffocation prevention while engaging in sexual activity. These conversations might be awkward and embarrassing, but they are necessary to ensure the safety of patients.

Risk for Exposure to Substances

Substance use has a negative impact on health and can also increase the individual risk for harm or illness. Substances to which individuals may be exposed include alcohol and drugs (both legal and illegal). Unfortunately, some patients become dependent on drugs that may have been prescribed to manage pain, such as opioids, leading to substance use disorders. As substance use disorder evolves, patients seek out more ways to obtain drugs to manage the symptoms of withdrawal. The effects of substance use are discussed in greater detail in 9.2 Safety: Violence.

Risk for Impaired Thermoregulation

The ability of the body to maintain its internal temperature within a narrow range is called thermoregulation. Impaired thermoregulation refers to a condition where the body's ability to regulate its internal temperature is

compromised. When thermoregulation is impaired, the body may struggle to maintain its temperature within the normal range. This can lead to either hypothermia or hyperthermia, both of which can be dangerous and potentially life-threatening.

A condition that occurs when the body loses heat faster than it can produce it is called hypothermia. This can result in a dangerously low body temperature and can be life threatening. Individuals should do the following to reduce the risk of hypothermia:

- Dress appropriately for the weather to reduce the risk. In severe cold, individuals should avoid being outdoors if possible.
- Stay active to generate body heat and reduce the risk of hypothermia.
- Avoid alcohol and drugs, as they can impair judgment and increase the risk of hypothermia. For example, a person who is impaired by either alcohol or drugs may choose to go outside when the weather is extremely cold and may not recognize how cold it is, perhaps losing consciousness or falling asleep in the cold, leading to hypothermia.

A condition that occurs when the body produces or retains too much heat is hyperthermia. This can result in a dangerously high temperature and can be life threatening. To reduce the risk of hyperthermia, individuals should do the following:

- Stay hydrated to help regulate body temperature.
- Avoid strenuous activity in hot weather to reduce risk, and if possible, stay in air-conditioned areas during extreme heat.
- Wear appropriate clothing, such as lightweight, light-colored clothing in hot weather.

Workplace Safety Concerns

The workplace can present a variety of safety concerns, ranging from physical hazards such as slips, trips, and falls, to chemical exposure to ergonomic concerns and stress. The repetitive nature of work can lead to workplace injuries. The design and arrangement of workspaces, tools, equipment, and tasks to optimize comfort, efficiency, and safety for employees is called **ergonomics**. Ergonomics involves assessing how people interact with their work environment and identifying potential hazards or discomforts, such as uncomfortable chairs, poorly designed workstations, repetitive motions, heavy lifting, and inadequate lighting that can result in musculoskeletal injuries or other health problems. To implement ergonomic principles, workplaces should provide training and education to employees, offer support and resources for stress management, and create a positive organizational culture that prioritizes employee well-being.

Employees should stay vigilant about workplace safety hazards and understand their employers' legal obligations to ensure a secure work environment. Reporting safety issues to the relevant authorities, engaging in mandatory safety training, and adhering to prescribed safety procedures are crucial. Additionally, workers should be mindful of workplace stressors and seek methods to alleviate physical, mental, and emotional stress.

Never Events

Adverse events that are clearly identifiable, measurable, serious (resulting in death or significant disability), and preventable are called **never events**. In 2007, the Centers for Medicare and Medicaid Services (CMS) discontinued payment for costs associated with never events, and this policy has been adopted by most private insurance companies (AHRQ, 2019). Never events are publicly reported, with the goal of increasing accountability by healthcare agencies and improving the quality of patient care. The current list of never events includes seven categories of events:

- surgical or procedural event, such as surgery performed on the wrong body part
- product or device, such as injury or death from a contaminated drug or device
- patient protection, such as patient suicide in a healthcare setting
- care management, such as death or injury from a medication error
- environmental, such as death or injury as the result of using restraints
- radiological, such as a metallic object in an MRI area
- criminal, such as death or injury of a patient or staff member resulting from physical assault on the grounds of a healthcare setting

Table 9.4 demonstrates the various ways in which patients can be impacted by never events. To reduce the chance and impact of never events, healthcare providers should focus on preventing these events using evidence-based practices, robust quality improvement processes, and patient engagement and empowerment. Patients can take steps to avoid experiencing never events by becoming informed and engaged in their own health care by asking questions and speaking up if they have concerns.

Action	Potential Outcome
Physical	Pain, infection, or another injury that might result in long-term complications and impact the quality of life
Psychological	Anxiety, depression, and post-traumatic stress disorder may occur and be long lasting
Increased healthcare costs	Longer hospital stays, additional treatments, and rehabilitation services can cost the healthcare system billions of dollars
Loss of trust	Loss of trust between the patient and provider and the healthcare system in general

TABLE 9.4 Potential Effects from Never Events

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety

Definition: Minimizes risk of harm to patients and providers through both system effectiveness and individual performance.

Knowledge: The nurse will delineate general categories of errors and hazards in care.

Skill: Describe factors that create a culture of safety (such as open communication strategies and organizational error reporting systems).

Attitude: Seeking to value one's role in preventing error. For example, one type of "never event" is a wrong-site surgery. This refers to a surgical procedure performed on the wrong part of the body, such as the wrong limb or organ. To prevent wrong-site surgery, the Quality and Safety Education for Nurses (QSEN) project emphasizes the importance of implementing a preoperative verification process. This involves verifying the correct patient, correct site, and correct procedure before the surgery takes place. This process can involve multiple healthcare team members, including the surgeon, anesthesiologist, and nursing staff. By emphasizing the importance of a preoperative verification process and the use of standardized protocols, QSEN helps to ensure that healthcare teams are equipped with the tools and knowledge to prevent errors and provide safe care.

Near Events or Misses

A **near event** is a warning signal of a potential hazard or incident that may cause harm to patients. Near events can have significant negative impacts; however, they can also provide an opportunity for learning and improvement. A **near miss** is an error that has the potential to cause harm but is identified before it happens. Near misses, such as those involving medications, allow nurses to make changes to practice and policy. Near misses are rarely the result of poor motivation or incompetence of the healthcare professional but rather are often caused by key contributing factors such as poor communication, less-than-optimal teamwork, memory overload, reliance on memory for complex procedures, and lack of standardization of policies and procedures.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Noticing Patterns and Responding

The nurse is responsible for recognizing cues and responding to cues that are out of the norm or not expected.

In the instance of a near event involving the administration of a mislabeled medication, this would involve recognizing an error on the medication bottle and intervening before the medication is given. Upon noticing the error, the nurse should immediately stop medication administration and return to the medication cart. They should seek to understand reasons for why a near miss occurred. The nurse should speak with a supervisor to identify the issue and seek resolution to prevent such an error from occurring again.

Sentinel Events

A **sentinel event** is like a near event but is not necessarily preventable. A sentinel event is defined as an unexpected occurrence involving death or serious physiological or psychological injury, or the risk thereof. For example, injury or death from a properly prescribed and administered medication is a sentinel event. The Joint Commission mandates reporting of sentinel events and the performance of a root cause analysis by the healthcare agency. A **root cause analysis** is a structured method used to analyze serious adverse events to identify underlying problems that increase the likelihood of errors, while avoiding the trap of focusing on mistakes by individuals. A multidisciplinary team analyzes the sequence of events leading up to the error with the goal of identifying how and why the event occurred. The goal is to prevent future harm by eliminating hidden problems within a healthcare system that contribute to adverse events.

Root cause analysis uses human factors science as part of the investigation. A **human factors** approach focuses on the interrelationships among humans, the tools and equipment they use in the workplace, and the environment in which they work. Safety in health care is ultimately dependent on humans—the doctors, nurses, and healthcare professionals—providing the care. For example, when a medication error occurs, a root cause analysis goes beyond focusing on the mistake by the nurse and looks at other system factors that contributed to the error, such as similar-looking drug labels, placement of similar-looking medications next to each other in a medication dispensing machine, or vague instructions in a provider order.

Culture of Safety

A culture of safety is a workplace culture that prioritizes the well-being and safety of employees, patients, and the public. Culture can have many definitions but generally refers to a way of being or acting. A **culture of safety** is characterized by open communication, collaboration, and continuous improvement, with a focus on reducing errors, adverse events, and harm. A culture of safety significantly impacts individual safety, as it sets the tone for safety practices, behaviors, and attitudes in the workplace. One example of a culture of safety initiative is the implementation of crew resource management (CRM) training in healthcare settings. In healthcare, CRM is a human factors approach that focuses on improving communication, teamwork, and situational awareness among healthcare providers. Studies have shown that CRM training can improve patient safety outcomes, reduce adverse events, and improve overall healthcare team performance (Weaver et al., 2011).

REAL RN STORIES

Near Miss with Medication

Nurse: Sarah, RN
Clinical setting: Emergency department
Years in practice: 3
Facility location: Southern California

One night, I was assigned to a patient who required several medications, including a new medication that I had not administered before. Despite being a seasoned nurse, I was a little nervous about administering the medication correctly, but I double-checked the dose and the medication order before administering it. As I was administering the medication, I noticed the medication label looked different from the other medications I had administered before. I quickly realized that I had grabbed the wrong medication bottle and was about to administer the wrong medication to the patient. I immediately stopped the administration and reported the near-miss incident to the charge nurse. This quick thinking and attention to detail prevented a medication error from occurring. I realized that even experienced nurses can make mistakes, but the key is to double-check and be vigilant about medication administration. I also recognized the importance of reporting near misses and adverse events to ensure that the

healthcare team can learn from the incident and take steps to prevent similar errors in the future.

Just Culture

A **just culture** can be defined as a culture where people feel safe raising questions and concerns and reporting safety events in an environment that emphasizes a nonpunitive response to errors and near misses. Clear lines are drawn between human error, at-risk behavior, and reckless behavior:

- *Simple human error* occurs when an individual inadvertently does something other than what should have been done. Most medical errors are the result of human error due to poor processes, programs, education, environmental issues, or situations. These errors are managed by correcting the cause, looking at the process, and fixing the deviation.
- *At-risk behavior* occurs when a behavioral choice is made that increases risk where the risk is not recognized or is mistakenly believed to be justified. For example, a nurse scans a patient's medication with a barcode scanner prior to administration, but an error message appears on the scanner. The nurse mistakenly interprets the error to be a technology problem and proceeds to administer the medication resulting in the wrong dosage of a medication being administered to the patient, instead of stopping the process and further investigating the error message. In this case, ignoring the error message on the scanner is considered at-risk behavior because the behavioral choice was considered justified by the nurse at the time.
- *Reckless behavior* occurs when an action is taken without regard for a substantial and unjustifiable risk. For example, a nurse arrives at work intoxicated and administers the wrong medication to the wrong patient. This error is due to reckless behavior because the decision to arrive intoxicated was made with conscious disregard for substantial risk.

Creating a just culture in which employees are not afraid to report errors is a highly successful way to enhance patient safety, increase staff and patient satisfaction, and improve outcomes. Success is achieved through good communication, effective management of resources, and an openness to changing processes to ensure the safety of patients and employees.

National Patient Safety Goals

Every year, to improve patient safety, The Joint Commission publishes **National Patient Safety Goals** that include goals and recommendations tailored to seven different types of healthcare agencies based on patient safety data from experts and stakeholders. The seven healthcare areas include ambulatory healthcare settings, behavioral healthcare settings, critical access hospitals, home care, hospital settings, laboratories, nursing care centers, and office-based surgery settings. These goals are updated annually based on safety data and include evidence-based interventions. The National Patient Safety Goals for nursing care settings (otherwise known as long-term care centers) are described in Figure 9.5.

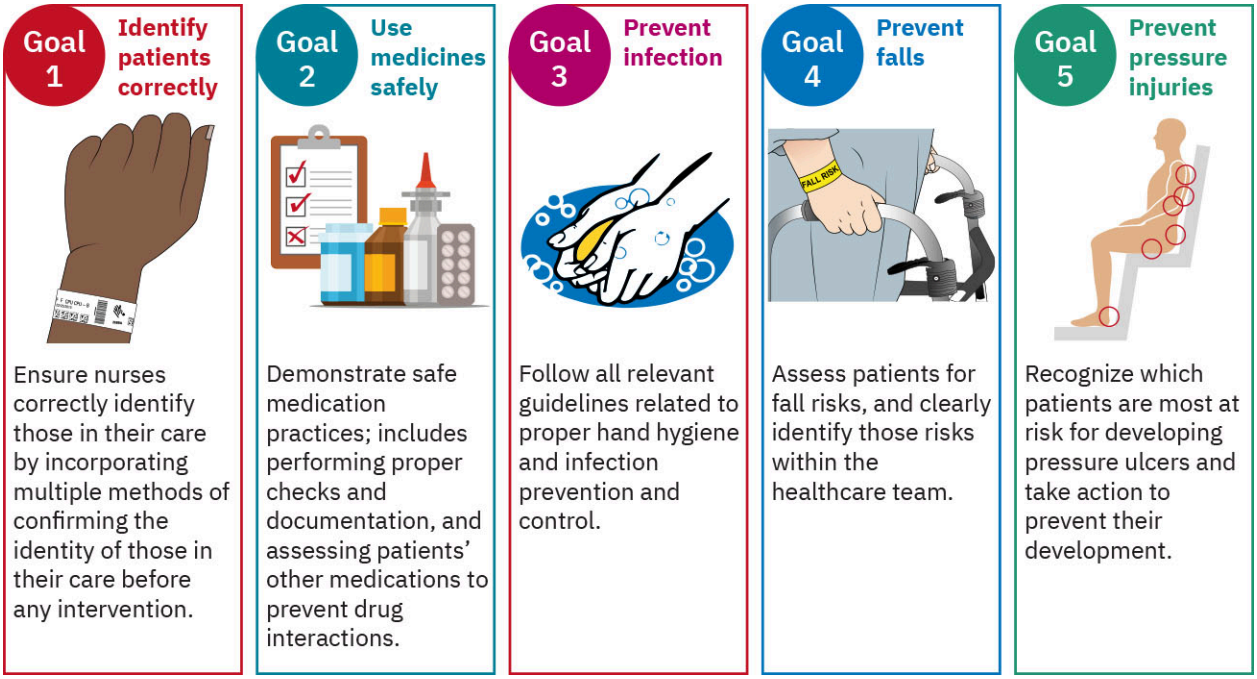


FIGURE 9.5 It is important for nurses to be aware of the current National Patient Safety Goals for the settings in which they provide patient care and adhere to the associated recommendations. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 4

Refer back to Unfolding Case Study: Unfolding Case Study #2: Part 3 for a review of the patient data.

Nursing Notes	**1400: Assessment** During hourly rounding, patient was found lying on the floor. Patient states, "I needed to go to the bathroom, but you were taking too long to come help me!" Upon further assessment, the bed alarm was turned off, and there was no evidence of the patient's call light being pushed for assistance. Patient was helped back to bed by three nursing staff and fall reported to charge nurse.

4. Generate solutions: What interventions could the nurse implement to prevent the patient from falling again?
5. Take action: What are the priority actions by the nurse at this time?
6. Evaluate outcomes: After implementing fall risk precautions for the patient, what findings would indicate that the interventions were successful?

Social Determinants of Health

The social determinants of health (SDOH) are the economic, social, and environmental factors that influence an individual's health and well-being. The term health disparity describes the differences in health outcomes that result from SDOH. The SDOH are conditions in the environment where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes. Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins (Healthy People 2030, n.d.).

At-risk populations experience increased prevalence and burden of diseases, as well as problems accessing quality health care because of SDOH. Health disparities negatively impact groups of people based on their ethnicity, gender,

age, mental health, disability, sexual orientation, gender identity, socioeconomic status, geographic location, or other characteristics historically linked to discrimination or exclusion (Healthy People 2030, n.d.). A related term is **healthcare disparity** which refers to differences in access to health care and insurance coverage. Health disparities and healthcare disparities can lead to decreased quality of life, increased personal costs, and lower life expectancy. More broadly, these disparities also translate to greater societal costs, such as the financial burden of uncontrolled chronic illnesses.

Limited Access to Food and Water

Limited access to food and clean water can have a significant impact on individual safety and well-being. Addressing this issue through policies and programs that ensure access to safe and nutritious food and clean water is essential for improving health outcomes and reducing health disparities. Limited access to food and water can lead to health issues, such as malnutrition, dehydration, foodborne illness, and waterborne illness, and impact mental and physical health in general. Some communities are further impacted by "food deserts," or areas where it is impossible for those who are poor to purchase affordable, quality, healthy food due to location and lack of adequate public transportation.

Substandard Housing

Adequate and affordable housing is a critical social determinant of health. Poor housing conditions, including overcrowding, lack of heat and running water, and exposure to toxic substances, can lead to a range of health problems, including respiratory diseases, injuries, and mental health conditions. A well-constructed questionnaire can help nurses eliminate bias while obtaining necessary information.

Limited Support System

A limited support system can have a significant impact on individual safety and well-being. Support systems may consist of family, friends, or neighbors who maintain contact with those living alone to ensure their safety and well-being. A limited support system can lead to individuals having a lack of assistance with daily activities, increased isolation and loneliness, difficulty navigating health systems, limited access to resources, and increased risk of neglect and abuse. Addressing this issue through policies and programs that support social connectedness and provide access to resources and services is essential for improving health outcomes and reducing health disparities.

9.2 Safety: Violence

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize different types of abuse to make informed clinical decisions regarding patient care
- Identify forms of family violence and provide appropriate nursing interventions for patient care
- Describe various categories of social violence

Healthcare workers play a crucial role in providing care to patients, but their job can also come with significant risks to their own health and safety. One of the most pressing risks is workplace violence, which can cause physical and psychological harm. Violence may come from patients or family members as well as from colleagues or other workers in the healthcare system. It can take various forms, ranging from verbal abuse to physical assault, and can have long-lasting effects on the individual's well-being. Additionally, healthcare workers may become aware of violence or abuse suffered by their patients. Nurses play an integral role in keeping themselves and their patients safe.

Ensuring the safety of healthcare workers is critical to the delivery of quality healthcare services. However, addressing this issue requires a multifaceted approach that involves collaboration between healthcare organizations, policymakers, law enforcement agencies, and other stakeholders. This can include implementing comprehensive violence prevention programs, providing training and education to healthcare workers, improving communications between staff and patients, and ensuring that appropriate support is available to those who have experienced violence. Nurses must participate in organizational training and be well informed about the steps to take when a potential threat is identified.

Forms of Abuse

The term **abuse** refers to physical, emotional, verbal, or sexual acts toward another which can cause harm. Abuse

can take many different forms and occur in a variety of settings, including at home, in the workplace, and in institutions such as schools or care facilities. Abuse is not limited by factors such as age, gender, or sexuality. The effects of abuse on an individual can be far reaching and devastating. Depending on the type, severity, and duration of the abuse, the impact can be physical, emotional, and psychological.

A victim of abuse may experience physical injuries, such as bruises, broken bones, or internal injuries, and may require medical attention. They may also experience emotional distress, such as fear, anxiety, and shame, and psychological trauma, such as post-traumatic stress disorder or dissociative disorders. Long-term effects of abuse can be even more profound. Victims may struggle with low self-esteem, trust issues, and difficulty forming healthy relationships. They may self-blame or feel ashamed to be in the situation. They may also be at higher risk for developing mental health disorders, such as depression, anxiety, or substance misuse. In some cases, the impact of abuse can be so severe that it can lead to suicidal thoughts or behaviors.

It is essential for anyone who has experienced abuse to seek help and support from trained professionals as well as from family and friends to begin the healing process and move forward with their lives. With the right help and support, healing from abuse is possible. In some instances, the perpetrators of abuse, such as financial abuse of elders, sexual abuse, or child abuse, may face legal charges for their actions.

Physical Abuse

The act of **physical abuse** involves any use of force or violence to cause physical harm, serious injury, or even death, such as hitting, kicking, or choking. Physical abuse may look different across the life span. For instance, there are higher rates of physical abuse reported by pregnant women (Symes, 2011). The rates of physical abuse toward those identifying as female are higher than those identifying as male; however, all genders are at risk (Symes, 2011).

A person who experiences physical abuse may have visible wounds, bruising, or unexplained injuries (Washington State Department of Social and Health Services, n.d.). Nurses should assess patients to identify signs of physical abuse, such as unexplained injuries or bruising. The patient may keep bruised areas covered or have inconsistent stories or explanations regarding how injuries occurred. Often abusers will purposely use force on bodily areas that can be covered with clothing to prevent any questions from being asked (Washington State Department of Social and Health Services, n.d.). However, the nurse should not assume a lack of an apparent wound means the patient is not a victim of abuse. Other signs of physical abuse may include social isolation and withdrawal by the victim. The nurse may suspect abuse if any of these signs are present, especially if the patient seems fearful in the presence of their abuser.

Most facilities have requirements to assess all patients for safety. If a nurse suspects someone is being abused, they can ask the patient if they feel safe at home. It is important to ensure the patient is alone when initiating any conversation about abuse to prevent angering the abuser. The victim of abuse may be too frightened to talk to anyone, so ensure there is a follow-up assessment in place. A nurse who suspects abuse should inform their supervisor and the attending provider and follow protocol to assess the patient and preserve any and all evidence for potential legal proceedings. The nurse must also be aware of reporting requirements in their state or organization, as there may be requirements to contact adult protective services.

Psychological Abuse

In **psychological abuse**, also referred to as verbal or emotional abuse, words or actions are used to manipulate or control a person's feelings and behavior. This may include name-calling, belittling, or using insults or threats, and it can lead to long-term psychological harm. It may also involve isolating a person from friends and family or controlling their access to resources, such as money or transportation. All genders are susceptible to psychological abuse (Symes, 2011).

Signs of psychological abuse may include being withdrawn or isolated, emotional reactions that are not consistent with the situation, or other behavior outside the norm for that person (Washington State Department of Social and Health Services, n.d.). The patient may also share they are experiencing psychological abuse to trusted friends or caregivers (Washington State Department of Social and Health Services, n.d.).

A nurse who suspects a patient is experiencing psychological abuse should follow similar steps to those for physical abuse. The patient should be given information that may assist them in leaving the abusive situation. Additionally, the nurse should inform the treating provider or supervisor. It is important for patients to know that psychological

abuse is as significant as physical abuse.

Financial Abuse

In **financial abuse**, a person's financial resources are exploited or misused, often by a trusted individual, such as a family member or caregiver. This type of abuse can take many forms, including theft, fraud, forcing the individual to give away money, or the misuse of financial accounts or assets. The impact of financial abuse on an individual can be severe, as it can leave them financially at-risk and potentially destitute, leading to poverty, debt, or even housing insecurity. Financial abuse can also have a significant impact on a person's mental health and well-being, as it can erode their sense of trust and security as well as their confidence in their own judgment and decision-making abilities.

Spotting financial abuse can be challenging, as it often occurs behind closed doors. Some signs that financial abuse may be occurring include sudden changes in a person's financial situation, such as unexplained bank withdrawals or transfers, missing funds or assets, or unpaid bills. Other red flags may include a caregiver who seems overly interested in a person's finances, refuses to let the person make their own financial decisions, or insists on managing all financial matters without input from the person. If a nurse suspects someone is experiencing financial abuse, seek support from trained professionals, such as social workers or elder abuse advocates, to protect the person and help them regain control over their finances.

Sexual Abuse

Any unwanted sexual behavior such as touching, groping, or rape is considered **sexual abuse** and is a violation of a person's bodily autonomy and consent. It can occur within relationships, in the workplace, or in institutions, such as schools or care facilities. Victims of sexual abuse often experience long-term psychological and emotional trauma as well as physical injuries. Sexual abuse is a criminal act in most countries and can result in serious legal consequences for the perpetrator.

Signs of sexual abuse may be physical or psychological. Physical signs of sexual abuse can include bruises around the breasts or genital area, unexplained sexually transmitted disease, genital infections, or unexplained vaginal or anal bleeding (Washington State Department of Social and Health Services, n.d.). Psychological signs may include depression, anxiety, anger, or in the case of a child or adolescent, "acting-out" behaviors. The patient may also report they have been sexually abused. If a nurse suspects sexual abuse, follow state and facility guidelines regarding reporting. Sexual abuse may require police reports, so it is essential to be aware of legally required steps nurses must take.

Substance Misuse

Substances such as drugs, alcohol, and tobacco are increasingly prevalent in many communities and can have serious consequences for health and safety. Drugs, both legal and illegal, can impair an individual's ability to make safe decisions (National Institute on Drug Abuse, n.d.). While there are variations by state, in 2022 there were 287 arrests per 100,000 citizens for driving while impaired (SafeHome, 2022). Similarly, alcohol use can impair an individual's ability to make safe decisions and result in serious health problems (Davis-Stober, 2019).

The consumption of excessive alcohol is associated with liver disease, while the excessive use of cannabis may elevate the risk of experiencing depression and anxiety. Despite the adverse effects of substance use on health, if someone chooses to use substances, it is crucial to prioritize safety. Key considerations include refraining from using substances when alone, ensuring the absence of flammable objects during use, and carrying drugs like Naloxone to address potential drug overdoses. Substance abuse heightens the risk of suffocation, primarily due to the suppression of the respiratory system by the ingested drug. Therefore, promoting safe substance use practices is imperative to mitigate the potential harm associated with these substances.

Family Violence

A form of abuse that occurs within a family or intimate relationship is called **family violence**, also known as **domestic violence**. It can take many forms, including physical, psychological, sexual, and financial abuse. Anyone can be at risk of family violence, regardless of their gender, age, or socioeconomic status. However, women and children are disproportionately affected, with women being the most common victims of intimate partner violence (Huecker et al., 2023). Family violence is cyclic, meaning that children exposed to violence in the home may themselves go on to demonstrate violence toward others. Early intervention can disrupt this cycle by focusing on

healing the victims through therapeutic interventions.

Identifying family violence can be challenging, as it often occurs behind closed doors. Some signs that family violence is occurring include unexplained injuries or bruises, isolation from family and friends, changes in behavior or personality, or a partner who tries to control or dominate their partner's thoughts or actions. Remember that family violence is never the victim's fault, and there are resources available to help those who are experiencing abuse. If a nurse suspects that a patient is experiencing family violence, seek help from trained professionals, such as domestic violence advocates or social workers, to ensure the patient's safety and well-being.

Intimate Partner Violence

In **intimate partner violence (IPV)**, there is physical or sexual violence, stalking, and psychological or coercive aggression by current or former intimate partners (Figure 9.6). Intimate partner violence is widespread in the United States and is the most prevalent adult safety issue. Victims can be female or male, and sexual orientation can be heterosexual or lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual, or others (LGBTQIA+). The nurse is often the initial healthcare professional in contact with a victim of IPV. Prompt recognition of a potential or actual threat to patient and staff safety is crucial. It is often the nurse's assessment that plays an important role in identifying a patient experiencing IPV. Compassion and understanding are important to show to this at-risk population. Effective communication is necessary to help victims come forward and share their experiences of abuse. IPV is a complex issue, and the victim may not initially consider leaving the abuser as an option.

FIGURE 9.6 Women are more likely to experience intimate partner violence and suffer greater consequences as a result. (credit: "Fast Facts: Preventing Intimate Partner Violence," by Centers for Disease Control and Prevention, Public Domain)

LINK TO LEARNING

The Danger Assessment tool (https://openstax.org/r/77dangertool) is a self-administered survey that is free to use and available in several languages (Campbell, 2004). Nurses can refer patients experiencing IPV to the National Center on Domestic Violence, Trauma, and Mental Health for resources, and the National Domestic Violence Hotline for free and confidential support (National Center on Domestic Violence, n.d.).

Child Abuse

Any form of physical, emotional, or sexual harm or neglect inflicted upon a child is **child abuse**. It can take many forms, including physical abuse (such as hitting or kicking), emotional abuse (such as verbal threats or manipulation), sexual abuse (such as inappropriate touching or sexual exploitation), and neglect (such as failing to provide for a child's basic needs, such as food, shelter, or medical care) (CDC, 2021b). Children of all ages and backgrounds can be at risk of abuse, but those who are at-risk due to factors such as poverty, disability, or family dysfunction may be at increased risk (CDC, 2021b). Identifying child abuse can be challenging, as children may be reluctant or unable to report abuse, and abusers may go to great lengths to hide their actions.

Some signs that a child may be experiencing abuse include unexplained injuries, changes in behavior or mood, reluctance to go home or spend time with a certain caregiver, or sudden changes in academic or social performance (CDC, 2021b). It is important to remember that child abuse is a crime and should be reported to authorities immediately if suspected. In the event of a child facing abuse, it is crucial to intervene to safeguard their well-being and ensure their safety. This may involve reporting the abuse to Child Protective Services, providing the child with

access to medical or mental health care, or working with law enforcement to hold the abuser accountable. It is also important to provide the child with emotional support and connect them with resources such as counseling or support groups to help them heal from the trauma of abuse.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care: As Related to Abuse

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for the patient's preferences, values, and needs.

Knowledge: Demonstrate comprehensive understanding of the concepts of pain and suffering, including physiological and psychological models of pain and comfort.

Skill: The QSEN initiative emphasizes the importance of providing safe and effective care to patients, including those who are at risk for abuse. One way nurses can promote clinical safety and apply QSEN principles related to abuse is by using screening tools to identify patients who may be experiencing abuse. For example, a nurse working in an emergency department might use a screening tool like the ICAST data tools to assess for possible child abuse (ISPCAN, n.d.). Nurses can also apply QSEN principles related to abuse by helping to promote clinical safety and improve the quality of care for patients who are at risk for abuse.

Elder Abuse

A form of mistreatment of an older adult is **elder abuse**. In most reported cases of elder abuse, a caregiver or a person in a trusted relationship is the perpetrator. For various reasons such as fear and disappointment, most of these cases go unreported. Abuse, including neglect and exploitation, is experienced by about one in ten people aged 60 years and older who live at home. From 2002 to 2016, more than 643,000 older adults were treated in the emergency department for nonfatal assaults, and over 19,000 homicides occurred (CDC, 2021a).

LINK TO LEARNING

Older patients may be targets for financial exploitation. The National Adult Protective Services Association (NAPSA) (https://openstax.org/r/77NAPSA) provides information about adult protective services and getting help in specific geographic regions.

Most victims of elder abuse are seen in the emergency department several times before they are admitted to the hospital. Nurses must be alert to any indications of elder abuse, such as suspicious injuries or behaviors, and report suspected incidents to local adult protective services agencies. Common signs of elder abuse or maltreatment include (Hartford Institute for Geriatric Nursing, n.d.):

- bruises, cuts, burns, or broken bones that are unexplainable or suspiciously explained
- malnourishment or weight loss
- poor hygiene, an unkempt appearance, unclean clothing, or dirty, matted hair
- foul odor from clothing or body
- anxiety, depression, or confusion
- unexplained transactions or loss of money
- withdrawal from family members or friends

Social Violence

The intentional use of force or power to harm individuals or groups within a community is referred to as **social violence**, also known as **community violence** (National Institute of Justice, 2021b). This can take many forms, including gang violence, hate crimes, and mass shootings. Those who are at risk of social violence may include individuals who belong to marginalized communities, such as communities of color, the LGBTQIA+ community, or those experiencing housing insecurity or living in poverty (National Institute of Justice, 2021b).

Identifying social violence can be challenging, as it often occurs suddenly and unpredictably. Some signs that social violence may be imminent include threats or acts of violence, the presence of weapons or other dangerous objects, or social media posts or other communications that indicate an intent to harm. If a nurse suspects that someone may be at risk of social violence, it is important to take action to protect them. This may involve contacting law enforcement or other authorities, encouraging the person to seek shelter or other forms of protection, or providing them with emotional support.

Addressing social violence requires a multifaceted approach that addresses the root causes of violence and promotes community safety and well-being. This may involve investing in programs that provide education, job training, and other opportunities to help individuals in at-risk communities to build better lives. It may also involve promoting policies that reduce access to weapons and other dangerous objects as well as addressing issues such as poverty, discrimination, and inequality that can contribute to social violence. Finally, it is important to provide support and resources to those who have been impacted by social violence, including counseling, mental health care, and other forms of support to help them heal from the trauma of violence.

Bullying

The term **bullying** can be defined as physical or emotional acts, such as hitting or making harmful comments, toward another person. Bullying can also involve excluding the victim from activities. Bullying is a pervasive issue that can have serious consequences for both the victim and the perpetrator. Those who are at risk of bullying include individuals who are perceived as different or vulnerable, such as individuals with a higher weight, with disabilities, or from underrepresented groups. Bullying can take many forms, including physical aggression, verbal taunts, and exclusion from social groups, and it can have a profound impact on an individual's mental and physical health. Bullying has been linked to a range of health risks, including depression, anxiety, substance abuse, and even suicide. Bullying has an impact on everyone involved, including witnesses and the person who is doing the bullying. When it occurs during childhood, it can have devastating effects and is considered an adverse childhood experience, which is a potentially traumatic event with lasting impacts through adulthood (stopbullying.gov, 2020).

Technology has added a new layer of complexity to bullying, and individuals of all ages may be the victims of **cyberbullying**, a form of bullying that occurs via social media, texting, or emails. The type of bullying that takes place face-to-face can also occur virtually, generally targeting the victim by posting photos, videos, or information intended to cause emotional harm.

It is important to identify bullying early. Signs that an individual may be experiencing bullying include unexplained injuries, changes in behavior or mood, reluctance to go to school or work, or difficulty sleeping or eating. It is also important to be aware of signs that an individual may be bullying others, such as aggression or a lack of empathy for others. If bullying is suspected, it is important to take action to address the issue.

Nurses play a pivotal role in addressing and preventing bullying within healthcare settings. A primary responsibility is advocating for a healthy work environment that prioritizes respect, collaboration, and support. Encouraging open communication, nurses foster an atmosphere where patients and colleagues feel safe reporting incidents without fear. Serving as role models, nurses should exhibit respectful and collaborative behavior, setting a positive example for their peers and other members of the healthcare team. Additionally, nurses can provide emotional support and assistance to individuals who are targets of bullying, guiding them through the reporting process and connecting them with available resources.

School nurses play a pivotal role in addressing bullying within the school environment. In addition to actively promoting awareness and education about bullying, they serve as a trusted resource for students, providing a safe space for discussions related to bullying concerns. The nurse is instrumental in prevention efforts by collaborating with school staff to implement antibullying programs. When incidents occur, the nurse supports both victims and perpetrators, offering guidance and collaborating with other staff members for targeted interventions. Their regular interactions with students enable them to identify potential signs of bullying, and they collaborate with parents and guardians to ensure a coordinated approach in addressing and preventing bullying.

Incivility

Rude or disrespectful behavior that can have a negative impact on individuals or groups is known as **incivility** (Porath & Pearson, 2013). It can take many forms, including name-calling, shouting, interrupting, and making derogatory comments. Incivility can occur in any setting, including workplaces, schools, and public spaces, and it

can have a profound impact on the mental and emotional well-being of those who are affected.

There are several types of incivility, including verbal, behavioral, and environmental. Verbal incivility involves the use of disrespectful or derogatory language, while behavioral incivility may include actions such as ignoring or excluding others or making inappropriate physical contact. Environmental incivility involves creating a hostile or unpleasant atmosphere, such as by playing loud music or using offensive scents (Cortina et al., 2008).

Anyone can be at risk of experiencing incivility, but some groups may be particularly at risk. These groups may include individuals who belong to marginalized groups, such as women, people of color, and members of the LGBTQIA+ community, as well as those who work in high-stress or high-pressure environments. It is important to identify and address incivility early to prevent it from escalating into more serious forms of aggression or violence (Porath & Pearson, 2013). This may involve promoting a culture of respect and civility in all settings, providing education and resources to help individuals recognize and prevent incivility, and holding those who engage in uncivil behavior accountable for their actions.

Workplace Violence

Any act of aggression or violence that occurs in the workplace, including physical assault, verbal abuse, threats, and harassment, is referred to as **workplace violence** (Lamborghini et al., 2020). Workplace violence can have serious consequences for employees, including physical injuries, psychological trauma, and decreased job satisfaction. Healthcare workers face a particularly high risk of workplace violence due to the nature of their work. This may include physical assaults, verbal abuse, and even sexual harassment from patients or their family members (Yusoff et al., 2023).

To identify workplace violence, it is important to be aware of the warning signs. These may include increased tension or hostility, threats or aggressive behavior, and a history of violent incidents. It is also important to create a culture of respect and zero tolerance for violence in the workplace and to provide education and training to employees on how to prevent and respond to workplace violence. Employers should have clear policies in place for reporting incidents of violence and providing support to employees who have been affected. This may include strategies such as de-escalation techniques, training in self-defense, and the use of panic buttons or other safety devices.

Horizontal Violence

A form of workplace aggression called **horizontal violence**(also called lateral violence) occurs between colleagues who are at the same level of authority or hierarchy within an organization. This type of violence can take many forms, including verbal abuse, undermining, sabotage, and exclusion. Horizontal violence can have serious consequences for the workplace, including decreased job satisfaction, increased staff turnover, and decreased patient safety. Anyone can be at risk of horizontal violence, but it is particularly prevalent in high-stress work environments such as health care. A review of the literature on horizontal violence in nursing found that 87 percent of nurses included in the studies reported experiencing horizontal violence (Zhang et al., 2022).

To identify horizontal violence, it is important to be aware of the warning signs, which may include frequent conflict between colleagues, gossiping and spreading rumors, and frequent complaints about a colleague's work performance. It is also important to create a culture of respect and zero tolerance for violence in the workplace and to provide education and training to employees on how to prevent and respond to horizontal violence. Employers should have clear policies in place for reporting incidents of violence and providing support to employees who have been affected, including access to counseling and mediation services. Addressing horizontal violence requires a collective effort from all staff, management, and administration to promote a positive work culture that prioritizes open communication, respect, and teamwork.

Researchers have identified a specific category of lateral violence that can occur between or among members of historically marginalized groups (Gaia & Hayes, 2018; Robinson 2018). These behaviors can include gossiping, bullying, or undermining, and the practice can be difficult to identify or address because it occurs within a community and may be seen as isolated or expected. However, like other types of lateral violence, this type can have significant impact on a person's mental health and well being.

Client-on-Worker Violence

The most common type of workplace violence in healthcare settings is violence perpetrated against heathcare

workers by clients, patients, or others receiving services or support, including patient family members. Research indicates that this type of violence occurs most frequently in emergency or psychiatric/mental health settings, but is not limited to those. It may occur suddenly on only one occasion, or may be committed as a part of a pattern. Violence by patients can be especially problematic when it is trivialized, or considering unimportant, unpreventable, or expected. Nurses, administrators, and others may feel that enduring violence is "part of the job," and reports or prevention may not be taken seriously.

Preventing client-on-worker violence usually involves extensive procedures and training. Nurses can look for patterns and behaviors, such as agitation, raised voices, drug-seeking behavior, and a sense of either victimization or entitlement. While violence can occur in any setting, those that completely isolate the nurse and patient, such as a room out of eyesight and earshot of anyone else, may pose greater risk. Nurses working in tandem with other professionals can also prevent or somewhat mitigate occurences of violence.

Hate Crimes

Criminal offenses called **hate crimes** are motivated by prejudice or bias against an individual or group based on their race, ethnicity, religion, sexual orientation, gender identity, or other characteristics (Levin & Nolan, 2019). Hate crimes can take many forms, including physical assault, verbal harassment, property damage, or even murder (Federal Bureau of Investigation, 2020). Anyone who belongs to a group that is historically marginalized or discriminated against can be at risk of being the target of a hate crime.

It is important to be aware of the signs of hate crimes, such as the use of hate speech, symbols of hate, or a pattern of similar incidents in the area. If a nurse witnesses a hate crime or suspects that one has occurred, the nurse should report it to the appropriate authorities, such as the police or a community organization that supports victims of hate crimes (McDevitt & Levin, 2021). To prevent hate crimes from occurring in the first place, it is essential to promote education and awareness about the harmful effects of prejudice and discrimination and to foster a culture of inclusion and respect for diversity.

Human Trafficking

The crime of **human trafficking** involves the exploitation of individuals for forced labor or commercial sex (United Nations Office on Drugs and Crime, 2020). Anyone can be a victim of human trafficking, regardless of age, gender, or nationality. However, some groups are at higher risk, including women and children, those living in poverty, migrants, and those with a history of abuse or trauma (International Labour Organization, 2022). Identifying victims of human trafficking can be challenging, as they may be kept in isolation, have limited contact with others, or be forced to deny their situation.

Signs that someone may be a victim of human trafficking include being forced to work excessively long hours, living in overcrowded or unsafe conditions, showing signs of physical abuse or malnourishment, and being unable to move freely or leave their place of work or residence (Hodge & Lietz, 2018; Piscitelli & Pienaar, 2019). Tattoos can also serve as potential indicators of human trafficking. Traffickers may brand or tattoo their victims with symbols, numbers, or names as a form of control and marking ownership. Symbols can vary widely and may include barcodes, dollar signs, or specific words, reflecting the trafficker’s tactics and the type of exploitation involved, such as forced labor or sex trafficking (National Association of Pediatric Nurse Practitioners Partners for Vulnerable Youth, n.d.) (Figure 9.7). Identification of these tattoos is complex, as victims may conceal them due to fear of reprisals. Awareness about the potential connection between certain tattoos and human trafficking is crucial for recognizing and aiding victims.

FIGURE 9.7 A barcode tattoo may be a warning sign of human trafficking, symbolizing ownership and control exerted by traffickers over their victims. (credit: "Neck barcode tattoo.jpg" by The finished Tattoo/Wikimedia Commons, CC BY 2.0)

Intervening in cases of human trafficking is crucial to prevent further harm to victims. Many victims are forced to remain in their situation because they do not have a way out. If a nurse suspects someone is a victim of human trafficking, it is important to contact law enforcement or a local anti-trafficking organization. In some cases, it may be necessary to involve a professional interpreter, as victims may not speak the local language or be hesitant to share their experiences.

PATIENT CONVERSATIONS

Having Difficult Conversations Regarding Intimate Partner Violence and Human Trafficking

Scenario: This scenario involves a nurse initiating a conversation with a patient they suspect is the victim of IPV. The nurse demonstrates gentle questioning techniques and supportive listening to help develop trust with the patient.

Nurse: Hi, Ruhi, I wanted to ask you a few questions to make sure that you are safe and okay. Have you been feeling okay lately?

Patient: Yeah, I'm fine.

Nurse: Okay, that's good to hear. I noticed that you have some bruises on your arms and legs. Can you tell me how you got those?

Patient: Oh, I just fell.

Nurse: Okay, do you feel comfortable telling me a little bit more about what happened? We're here to help you, and we want to make sure that you're safe.

Patient: Well, I don't know if I should say anything.

Nurse: That's okay. If you don't feel comfortable talking to me, that's all right. But I want you to know that we're here to help you, and we're not going to judge you or get anyone in trouble without your permission. Sometimes, when people are hurt or scared, they need someone to talk to.

Patient: Okay, well, my boyfriend gets angry sometimes. He hits me and makes me do sexual things I don't want to do with his friends. He does not allow me to see or talk to my family and friends.

Nurse: I'm so sorry to hear that, Ruhi. It sounds like you might be experiencing something called human trafficking and IPV. That's when someone is forced to do things against their will, like work or have sex. It's not your fault, and you're not alone. We can help you get the support you need to stay safe.

Patient: Really? You can help me?

Nurse: Absolutely. We have a team of people who are specially trained to help people who have been trafficked. We can connect you with resources like counseling, legal help, and safe housing. And we can make sure that you're not in danger while you're here in the hospital.

Patient: Thank you so much. I didn't know what to do.

Nurse: You're welcome, Ruhi. We're here for you, and we're going to do everything we can to help you.

9.3 Security: Privacy and Informatics

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify privacy measures when using technology in nursing
- Explain how informatics has enhanced health care
- Describe the vital roles technology plays in patient care

As the use of technology in health care continues to expand, nurses play an increasingly important role in ensuring the security and privacy of patient information. Technology can both assist and potentially cause harm to individuals; it provides access to information while also increases the risk of cyberbullying or other online attacks.

Protecting patient information is a critical responsibility that is not only required by law but is also essential for maintaining the trust of patients and their families. Nurses must be knowledgeable about the risks associated with the use of technology and understand how to prevent and respond to security breaches. Privacy and security in informatics refer to protecting the confidentiality, integrity, and availability of electronic health information. Confidentiality refers to safeguarding health information so that it is not disclosed to unauthorized individuals. Integrity refers to the way data are captured, used, and saved in healthcare settings, and focuses on maintaining the accuracy and completeness of the health information. Nurses must demonstrate integrity when obtaining and using information related to their patients. Availability ensures the information is accessible and usable when needed. Privacy and security are interrelated concepts, and both are necessary for protecting patient information from unauthorized access, use, or disclosure.

Nurses must be aware of the various threats to patient information, including hacking, phishing, and other forms of cyberattacks. They should be knowledgeable about the technical and administrative safeguards used to protect patient information, such as firewalls, access controls, and encryption. Nurses must also be able to recognize potential security breaches and respond appropriately to minimize harm to patients and mitigate risk to the organization. By understanding the importance of privacy and security in informatics, nurses can play a vital role in protecting patient information and maintaining the trust of patients and their families.

Privacy

In healthcare, **privacy** means that an individual's information is kept confidential; it is only shared with individuals on a need-to-know basis. Privacy is a fundamental right of patients in healthcare, and healthcare workers have a responsibility to protect this right. Patients share sensitive and personal information with healthcare workers to receive care, and it is essential this information is kept confidential (American Nurses Association [ANA], 2015). Healthcare workers must ensure patient information is only shared with authorized individuals on a need-to-know basis, and that appropriate safeguards are in place to prevent unauthorized access, use, or disclosure of patient

information (ANA, 2015). Healthcare workers must also be aware of the legal and ethical implications of privacy breaches and the impact that these breaches can have on patients and their families. By prioritizing privacy in health care, healthcare workers can help to build trust and strengthen the relationship between patients and healthcare providers (ANA, 2015).

Protected Health Information

Any individually identifiable health information that is transmitted or maintained by a covered entity or business associate is **protected health information (PHI)**. This information includes demographic information (e.g., name, address, birth date), medical histories (including medical record number), test results, and health insurance information. Healthcare workers have a responsibility to ensure the privacy and security of PHI to protect the confidentiality, integrity, and availability of this information. Nurses can ensure they are protecting patients' information by using a password to log into the computer, logging off after each interaction, ensuring no one unauthorized is viewing the computer screen, and taking care when having conversations where patient information may be shared. All PHI is protected under the Health Insurance Portability and Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health (HITECH) Act. Healthcare workers must understand the regulations and policies surrounding PHI, including the minimum necessary standard, which requires healthcare workers to only access and disclose the minimum amount of PHI necessary to perform their job duties. By understanding the importance of protecting PHI, healthcare workers can help to maintain patient trust and promote the safe and effective delivery of healthcare services.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Informatics 1

Definition: A nurse's ability to safeguard patient information from unauthorized disclosure or access.

Knowledge: This competency involves understanding the legal and ethical principles related to privacy, confidentiality, and security of patient information.

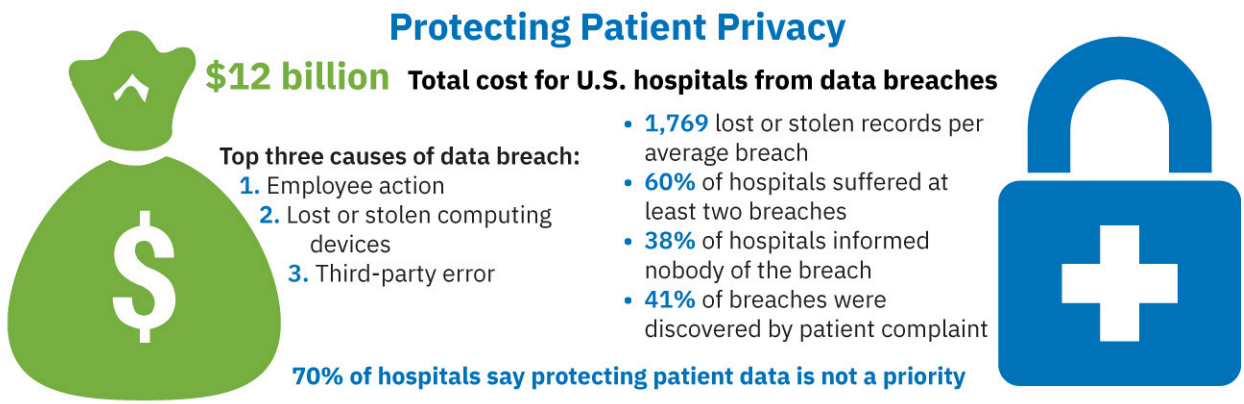
Skill: Nurses who are competent in protecting health information:

- are aware of the importance of maintaining the privacy and confidentiality of patient information
- are knowledgeable about the HIPAA regulations that govern the use and disclosure of PHI
- understand the implications of security breaches and the consequences of unauthorized disclosures of patient information

Attitude: Protect confidentiality of PHI in electronic health records.

Health Insurance Portability and Accountability Act

The **Health Insurance Portability and Accountability Act (HIPAA)** is a federal law that was enacted in 1996 to protect the privacy and security of patients' health information (U.S. Department of Health and Human Services, 2018). The regulations of HIPAA apply to covered entities, including healthcare providers, health plans, and healthcare clearinghouses, as well as their business associates. The law requires covered entities to implement administrative, physical, and technical safeguards to protect patients' PHI from unauthorized access, use, or disclosure (Figure 9.8). Also, HIPAA gives patients the right to access their PHI, request corrections to their PHI, and receive an accounting of disclosures of their PHI. Healthcare workers must understand and comply with HIPAA regulations and policies to protect the privacy and security of patient information and avoid potential legal and ethical consequences (American Medical Association, 2024; ANA, 2015). Another initiative to help protect PHI has been recommended as a best practice standard from The Joint Commission. This initiative involves the patient assigning a code word upon admission to a hospital. Anytime a loved one or family member calls the facility for an update, the nurse must request they provide the assigned code word in order to receive information about the patient's status. This is just one example of the many ways healthcare facilities are attempting to ensure the privacy of PHI.



Data from Ponemon Institute, 2010 Benchmark Study on Patient Privacy and Data Security

FIGURE 9.8 Protecting the privacy of patient information is the responsibility of all healthcare providers. Nurses must ensure they take the necessary steps to adequately protect patient's information. (data source: Ponemon Institute, 2010 Benchmark Study on Patient Privacy and Data Security; attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

If a patient expresses concerns about information captured using technology in the healthcare setting, a nurse can have a conversation to address their concerns and provide reassurance. The nurse might start by acknowledging the patient's concerns and asking for specific details about what they are worried about. For example, the nurse might ask if the patient is concerned about their PHI being shared with unauthorized individuals or if they are concerned about the security of the facility's technology systems. Once the nurse has a better understanding of the patient's concerns, they can provide information about the facility's policies and procedures for protecting patient privacy and ensuring the security of technology systems. The nurse can explain the measures that are in place to protect patient information, such as using secure networks and encrypting data. They can also discuss the importance of patient privacy and reassure the patient that their information is only accessed on a need-to-know basis. Finally, the nurse can ask the patient if they have any additional questions or concerns and provide resources for the patient to learn more about the facility's technology policies and procedures. This conversation can help the patient feel more comfortable with the use of technology in their care and build trust between the patient and health care.

Informatics

The definition of **informatics** is the interdisciplinary study of information processing and management, including the use of technology and data analytics to inform decision-making and improve outcomes in various fields, including healthcare. In the nursing profession, nursing informatics integrates nursing science, computer science, and information science to support the delivery of safe, effective, and patient-centered care (ANA, 2015). Nurses who specialize in informatics use their expertise to develop and implement health information technology systems, analyze data to inform quality improvement initiatives, and ensure the privacy and security of PHI (ANA, 2015). Nursing informatics is a growing field that plays an increasingly important role in healthcare delivery, and nurses who are knowledgeable and skilled in informatics are well positioned to help shape the future of health care (ANA, 2015; International Council of Nurses, 2019).

LINK TO LEARNING

Nursing informatics is a growing area of nursing practice, with many nurses working in informatics roles. Additionally, it is an expectation that all nurses will possess basic knowledge and competencies in nursing informatics. The Healthcare Information and Management Systems Society website (https://openstax.org/r/77HIMSS) has valuable information regarding the role of nurse informaticists as well as the educational requirements.

Telehealth

In **telehealth**, electronic communication technologies are used to provide remote healthcare services, including consultations, monitoring, and education (ANA, 2020; National Council of State Boards of Nursing [NCSBN], 2020). Nurses play an important role in telehealth delivery by providing triage, assessment, education, and care coordination to patients who are unable or prefer not to access care in person. Nurses who specialize in telehealth

must be knowledgeable about the technology and equipment used as well as the legal and ethical issues related to remote healthcare delivery. They also need to be skilled in communication and patient education to ensure that patients receive safe, effective, and patient-centered care (ANA, 2020; NCSBN, 2020). As the use of telehealth continues to grow, nurses who are proficient in telehealth technologies and practices will be in high demand and play a critical role in expanding access to care and improving patient outcomes (Figure 9.9).

FIGURE 9.9 Telehealth provides a means of improving access for both patients and providers. (credit: "190605-N-AW702-012," by Navy Medicine/Flickr, Public Domain)

Telehealth can improve access to health care in rural settings where patients may not have a primary care provider. The use of telehealth applications also means rural residents do not have to take on the expenses of traveling to urban centers for care. During the COVID-19 pandemic, the use of telehealth as a component of care was essential and demonstrated both the benefits and challenges of its use.

LINK TO LEARNING

Telehealth has been a key part of health care for some time. The COVID-19 pandemic increased the use of telehealth applications and thus the need for information and education of nurses regarding telehealth use. Find resources to help nurses, providers, and patients prepare for telehealth visits (https://openstax.org/r/77telhealthHRSA) at the Health Resources and Services Administration website.

Health Information Technology for Economic and Clinical Health Act

The **Health Information Technology for Economic and Clinical Health (HITECH) Act** is a federal law that was enacted as part of the American Recovery and Reinvestment Act of 2009. The law was designed to promote the adoption and meaningful use of health information by encouraging the implementation of the electronic health record (EHR), a digital version of a patient's paper chart that contains their comprehensive health information. The purpose of EHRs is to facilitate the sharing of patient information among healthcare providers, enhancing coordination and continuity of care while promoting efficiency and accuracy in healthcare delivery. The HITECH Act provides financial incentives to eligible healthcare providers and facilities that demonstrate the meaningful use of certified EHR technology as well as provides penalties for those who fail to adopt EHRs and demonstrate meaningful use. The HITECH Act also includes provisions for strengthening the privacy and security of health information, such

as increased penalties for HIPAA violations, and the establishment of the Office of the National Coordinator for Health Information Technology (ONC) to coordinate health information technology efforts at the national level. Overall, the HITECH Act has played a significant role in advancing the adoption and use of health information technology in health care and has helped to improve the quality, safety, and efficiency of healthcare delivery.

Meaningful Use

An essential component of nursing practice in today's healthcare environment is **meaningful use** of technology, ensuring technology being utilized in healthcare settings is done so purposefully and with the intention of improving outcomes. Nurses use various technologies, such as EHRs mobile devices, telehealth, and clinical decision-support systems (CDSSs), to improve patient care, safety, and outcomes (ANA, 2018). Nurses who understand and use technology effectively can enhance their practice and improve the quality of care they provide (Lee & Mills, 2018). Meaningful use of technology also requires nurses to be knowledgeable about legal and ethical considerations related to technology use, such as data privacy, security, and confidentiality. Nurses must also stay up to date with new technologies and be able to adapt to changes in technology and software applications.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Informatics 2

Definition: Use of information and technology to communicate, manage knowledge, mitigate error, and support decision-making.

Knowledge: Clinical safety and QSEN procedures related to the use of technology in the healthcare setting are essential to ensure patient safety and improve the quality of care. These procedures include guidelines for the safe and effective use of technology, such as EHRs, medication administration systems, and CDSSs. QSEN procedures emphasize the importance of teamwork and communication among healthcare providers to ensure safe and effective use of technology. This includes involving patients and families in the care process as well as using best practices for documentation, communication, and handoff processes.

Skills: QSEN also emphasizes the importance of ongoing education and training for healthcare providers to maintain competency and keep up to date with technological advancements. Clinical safety procedures related to the use of technology include procedures for risk assessment, system analysis, and incident reporting. These procedures are designed to identify potential risks and hazards associated with the use of technology and to develop strategies to prevent and manage adverse events.

Attitude: Clinical safety procedures also emphasize the importance of monitoring and evaluation to ensure the effectiveness of interventions and to continuously improve patient safety. By following these procedures, healthcare providers can mitigate potential risks associated with technology and provide safe and effective care to their patients.

Technology's Role in Patient Care

Technology plays an increasingly important role in patient care, and it has revolutionized the way healthcare providers deliver and manage care. From EHRs and telehealth to mobile applications and wearable devices, technology has made it easier for patients to access care and for providers to deliver personalized, timely, and efficient care. For example, EHRs allow providers to access patient information quickly and accurately, reducing the risk of errors and improving patient safety. Telehealth enables patients to receive care remotely, which can be particularly beneficial for those who live in rural or remote areas, have limited mobility, or have chronic conditions. Wearable devices, such as fitness trackers and smartwatches, can monitor patients' vital signs, activity levels, and other health metrics, helping them to manage their health and prevent or manage chronic conditions. Technology's role in patient care will continue to grow and evolve as new innovations such as artificial intelligence emerge, and it has the potential to transform healthcare delivery and improve patient outcomes. Nurses and other healthcare providers must learn and stay updated on any technology being used in their organization. Proper training and proper usage will decrease the risk of user error.

PATIENT CONVERSATIONS

Teaching Technology Access

Scenario: Mark is a nurse caring for Adnan, a 65-year-old being discharged post myocardial infarction. Mark notices that Adnan is wearing a smartwatch that tracks heart rate and blood pressure.

Nurse: I see that you use a smartwatch, do you track health information on this?

Patient: Yes, I do, I like to take charge of my health and with my recent health issues would like to find a way to have more control over my healthcare appointments and test results.

Nurse: Have you registered for online access to your EHR? Did you know that having access allows you to see your lab results quickly as well as manage your appointments?

Patient: No, I was not aware of that; do you have information on how I can set this up?

Nurse: Yes, I do, here let me help you. Just so you are aware, all information collected is protected, and only you have access to this. Here is the website to get started.

Scenario follow-up: Mark's role is to ensure that Adnan is aware of the access to his own EHR and how he can use this to manage his healthcare results and appointments.

Documentation

Technological advances have improved connectivity and access to information and resources in healthcare settings. Computers used to access an EHR can be found in patient rooms, on wheeled carts, in workstations, or even on handheld devices. Nurses and other healthcare workers are able to quickly obtain results from point-of-care testing or share images to consult with colleagues (Figure 9.10).

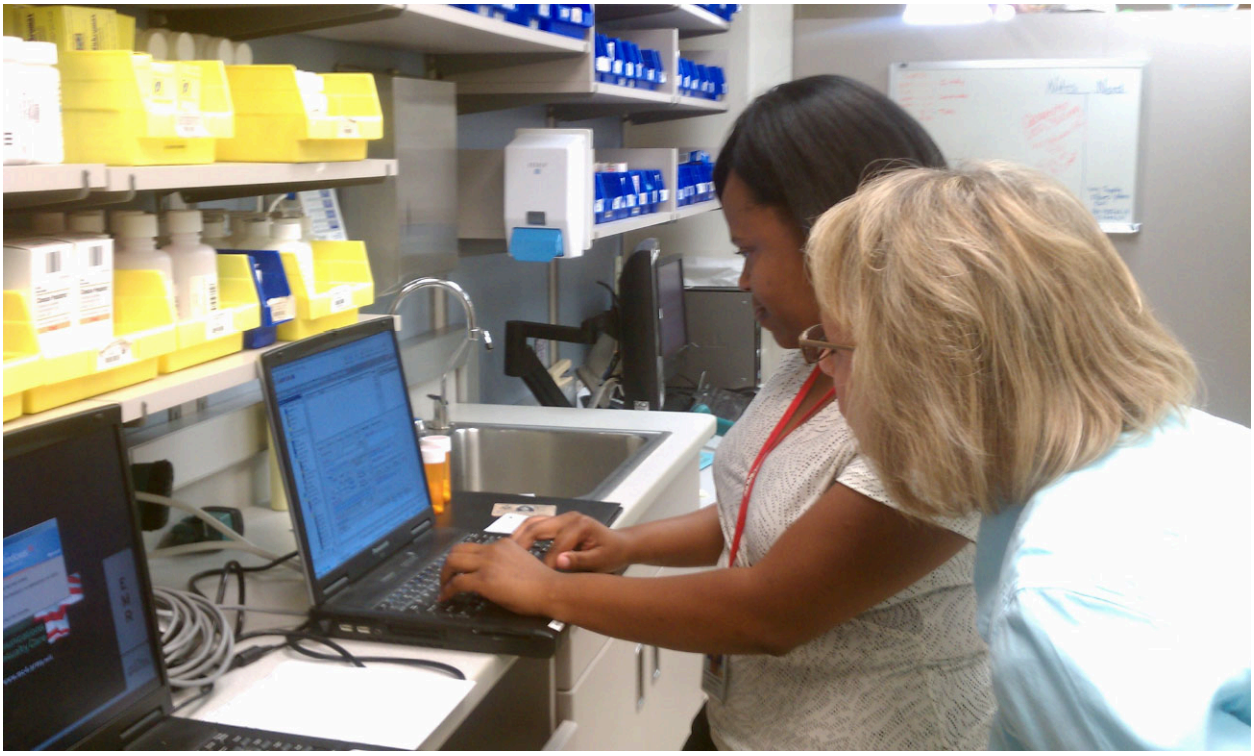


FIGURE 9.10 Electronic health records are essential tools in healthcare settings. Nurses play key roles in collecting data and transmitting it to the healthcare team. (credit: "Winn Army Community Hospital Pharmacy Stays Online During Power Outage.jpg," by MC4 Army/Flickr, CC BY 2.0)

LINK TO LEARNING

Nurses have an integral role to play when it comes to the safe use of EHRs. The ANA statement on EHRs (https://openstax.org/r/77stateEHRs) provides information to nurses to ensure they understand their role and expectations for safe use.

Point-of-Care Testing

In **point-of-care testing (POCT)**, diagnostic testing is performed at or near the patient's bedside, rather than in a centralized laboratory (Bellartz et al., 2022). This approach allows for rapid diagnosis and treatment decisions, which can improve patient outcomes and reduce healthcare costs. In the nursing profession, POCT is becoming increasingly important as it allows nurses to quickly assess and monitor patients as well as to make informed decisions about their care. For example, blood glucose monitoring is a common type of POCT used by nurses to monitor patients with diabetes.

Other types of POCT include tests for infectious diseases, such as influenza and strep throat, and tests for cardiac biomarkers, such as troponin. While POCT can provide many benefits, it is important for nurses to be trained in its use and to follow appropriate quality control measures to ensure accurate results. Additionally, nurses must be knowledgeable about the limitations and potential sources of error associated with POCT.

PATIENT CONVERSATIONS

Alleviating Patient Concerns When Using Technology

Scenario: The nurse walks into the patient's room to complete an assessment, and the patient starts exhibiting signs of fear and anxiety. The patient pulls the covers up to their chest tightly. The patient will not take their eyes off the portable vital sign machine.

Nurse: Hi, my name is Sara, and I am going to be your nurse today. Do you mind verifying your name and date of birth for me?

Patient: uhm . . ., sure it's Jon Blankenship and 01/12/1952. What are you going to do to me?

Nurse: Hi, Mr. Blankenship, I would like to check your vital signs if that is okay.

Patient: What does that mean? Does it hurt? Just a minute ago, they brought a machine in here and took blood from my finger and it still hurts. They said they were checking my blood sugar levels, but I don't have blood sugar problems or diabetes. I am afraid you all do not know what you are doing, and I want to go home.

Nurse: Mr. Blankenship, I can understand your fear. Let me try and explain; we recognize you do not have a history of diabetes. Your provider wants us to monitor your blood sugar levels because the new medication he started you on for your chronic obstructive pulmonary disease can cause blood sugar levels to get extremely high in some patients, and we just want to keep an eye on things for your safety.

Patient: Oh, well, that makes sense. Then what is that machine for?

Nurse: This is a portable vital sign machine that lets me check your heart rate, blood pressure, and temperature. If all is well, we only need to check your vital signs every 6 hours while you are here. If any of your vital signs change drastically, then we may have to monitor them more frequently. Obtaining vital signs does not hurt, and it will only take a few minutes. May I go ahead and complete them now?

Patient: It is okay. You can go ahead but go slow.

Scenario follow-up: The nurse collects the patient's pain level, heart rate, respiration rate, blood pressure, and temperature. The nurse uses the bed scale to collect his current weight.

Nurse: Okay, I am done; your vital signs are good and are within the range of what we like to see. Do you have any further questions or concerns I can assist you with before I go?

Patient: No, I am good for now, thanks.

Assistive Clinical Decision-Making Tools

Assistive clinical decision-making tools are computer-based systems that provide clinicians with decision support for patient care (Pawloski et al., 2019). These tools use algorithms, artificial intelligence, and other technologies to analyze patient data and provide recommendations to the clinician. Examples of assistive clinical decision-making tools include decision-support systems for medication prescribing, clinical practice guidelines, and diagnostic decision-support systems. These tools can improve the accuracy and efficiency of clinical decision-making, reduce the risk of errors, and improve patient outcomes. However, it is important for clinicians to be trained in the use of these tools and to understand their limitations. In addition, these tools should be integrated into clinical workflows in a way that does not disrupt care delivery or create additional burdens for clinicians (Sutton et al., 2020). All healthcare professionals who use these assistive tools must abide by the safety measures used to prevent breaches of confidentiality. Assistive tools might be linked to the internet or to the organizations' wireless network. This means that the tools can be vulnerable to hacking or security breaches if safety protocols are not followed and maintained.

Technology in Patient Education

Technology can play a vital role in providing and supporting patient education in health care. To provide patients with access to their medical records and educational resources, EHR systems and patient portals are used. These resources can include videos, audio recordings, interactive graphics, and written materials that can help patients better understand their conditions and treatment options. Mobile applications and wearable devices can be used to help patients track their health status, monitor symptoms, and adhere to treatment plans (Buvik et al., 2019; Välimäki et al., 2016). Telehealth and remote monitoring technologies can provide patients with access to healthcare professionals and educational resources in real time. This is particularly important for patients who are unable to attend in-person appointments due to distance, mobility issues, or other barriers (Rickard et al., 2019). Virtual education sessions, webinars, and group discussions can also be held using videoconferencing software to promote patient engagement and collaboration. Technology has the potential to enhance patient education and improve health outcomes by providing patients with timely and accessible educational resources, increasing their engagement in their own care and promoting better communication between patients and healthcare providers. However, it is important to ensure these technologies are accessible to all patients, including those with limited digital literacy, and that they are designed in a way that meets patients' needs and preferences. And, while patients are free to use their personal devices to communicate with their healthcare team, healthcare professionals must always use the device provided by the organization to communicate with their patients. Using personal devices creates a breach in the security and confidentiality of the patients' private health information.

LIFE-STAGE CONTEXT

Helping with Technology

Older adults may have difficulty using, accessing, and reading from computer devices. It is important to offer information to older adults in many different formats such as handouts or demonstrations or to involve a family member as necessary to ensure the patient receives and understands the required information.

Summary

9.1 Safety: Individual and Environmental

Individual safety is an essential component of good health, and it should be prioritized above anything else. There are many aspects for the nurse to consider when maintaining individual safety including understanding a patient's developmental stage of life, physical and psychosocial health risk factors, and any knowledge deficits. Nurses can incorporate Maslow's hierarchy of needs to help prioritize care. Environmental safety is also a major concern. Nurses must educate their patients on topics such as falls, fires, poisoning, suffocation, exposure to substances, and weather-related issues like hypothermia. Occupational safety is needed to prevent or reduce the risk of work-related injuries. Occupational, environmental, and personal safety are all interconnected and must be prioritized to prevent accidents, injuries, and illnesses.

Safety measures must also be taken regarding the nurse themselves. Creating a just culture is one way to help reduce errors such as near misses and never events. Just culture allows nurses to learn from their mistakes and the mistakes of others without the fear of judgment. Just culture also allows the organization to see why a mistake happened and how to best keep it from happening again.

Nurses play an important role in educating patients, families, and communities regarding safety concerns but should consider any SDOH when planning education. Nurses assess and address patient safety risks related to each individual situation. There are many populations that experience increased prevalence and burden of diseases. These populations are more at risk because of the lack of access to quality health care. This is defined as SDOH. The SDOH include a person's lack of access to sufficient water, shelter, food, support, and financial resources. Many groups of people experience health disparities related to age, gender, ethnicity, socioeconomic status, and mental health. Nurses must be mindful of each individual's unique situation and plan care accordingly to help minimize any risk to safety.

9.2 Safety: Violence

There are many different forms of abuse that can occur across the life span. The nurse needs to have a thorough understanding of different types of abuse to effectively plan care for their patients. Recognizing cues associated with physical, psychological, financial, and substance abuse is one way the nurse can make informed clinical decisions. For example, if a nurse was to notice bruising or other markings on a patient consistent with physical abuse, they would report these findings immediately per the facility's protocol. Family violence is also a concern for the nurse when making clinical decisions. Family violence includes intimate partner, child, and elder abuse. Sometimes the nurse is the first person to discover this form of abuse, whether it be in a primary care office, hospital, or community resource location. Nurses must perform comprehensive assessments to properly recognize signs, plan appropriate interventions, and provide the patient with resources.

Social violence can take place in many different forms and settings. A few examples include bullying, incivility, workplace violence, and human trafficking. Nurses need to address social violence from a multifaceted approach. This means identifying the root cause to promote safety and well-being of the person and community. Nurses can advocate by promoting policies that reduce access to weapons and other dangerous objects as well as addressing issues such as poverty, discrimination, and inequality that can contribute to social violence. After discovery of an act of social violence, nurses can provide support and resources to those who have been impacted. Examples of such resources to help patients heal from the trauma of violence include counseling and mental health care.

While it may seem as though bullying, other forms of social violence, and workplace violence are outside the role of the nurse, nurses do work in schools and in communities and can be a vital link to help those who are suffering. Nurses have a vital role in assessing for and intervening in circumstances of violence that require assessment and intervention from a nursing perspective. Nurses can do this in a way that is supportive of the needs and wishes of the victims of violence.

9.3 Security: Privacy and Informatics

While technology has enhanced nursing practice and healthcare delivery, it has also presented some challenges. The introduction of technology has led to the need for increased attention to privacy and the protection of patients' personal health information. Nurses must ensure patient information is protected, and thus, they play a vital role in

the use of healthcare technology. The introduction of technological advancements, such as EHRs, has made it easier for healthcare providers to share accurate patient information with one another. Patient access to EHRs has increased the ability for patients to take accountability for their own health care by accessing lab results and managing their appointments. Technologies related to patient care have evolved, making care safer and more efficient. Nurses have and will continue to have a key role in this, evidenced by the emergence of nursing informatics as both a specialty and expected competency for all nurses. Artificial intelligence and similar new technologies challenge nurses to adapt their practice while continuing to meet expected requirements related to protection of information and privacy.

Key Terms

abuse physical, emotional, verbal, or sexual acts toward another which can cause harm

bullying physical or emotional acts, such as hitting or making harmful comments, toward another person

child abuse any form of physical, emotional, or sexual harm or neglect inflicted upon a child; can take many forms, including physical abuse, emotional abuse, sexual abuse, and neglect

culture of safety culture characterized by open communication, collaboration, and continuous improvement, with a focus on reducing errors, adverse events, and harm

cyberbullying a form of bullying that occurs via social media, texting, or emails

elder abuse all direct actions and neglectful actions by a caregiver that cause harm or risk of harm to an older adult

environmental safety practices and measures taken to protect and preserve the natural environment, ecosystems, and human health from potential hazards and harmful impacts to health

ergonomics the design and arrangement of workspaces, tools, equipment, and tasks to optimize comfort, efficiency, and safety for employees

family violence (also known as domestic violence) a form of abuse that occurs within a family or intimate relationship; can take many forms, including physical, psychological, sexual, and financial abuse

financial abuse the exploitation or misuse of a person's financial resources, often by a trusted individual, such as a family member or caregiver

hate crimes criminal offenses motivated by prejudice or bias against an individual or group based on their race, ethnicity, religion, sexual orientation, gender identity, or other characteristics

Health Information Technology for Economic and Clinical Health (HITECH) Act a federal law that was enacted as part of the American Recovery and Reinvestment Act of 2009; designed to promote the adoption of electronic health records (EHRs)

Health Insurance Portability and Accountability Act (HIPAA) a federal law that was enacted in 1996 to protect the privacy and security of patients' health information

health knowledge deficit lack of information or understanding regarding health-related topics that can impact an individual's ability to make informed decisions about their health and well-being

healthcare disparity differences in access to health care and insurance coverage

horizontal violence (also called lateral violence) a form of workplace aggression that occurs between colleagues who are at the same level of authority or hierarchy within an organization

human factors the interrelationships among humans, the tools and equipment they use in the workplace, and the environment in which they work

human trafficking a crime that involves the exploitation of individuals for forced labor or commercial sex

incivility rude or disrespectful behavior that can have a negative impact on individuals or groups

individual safety the state of being free from physical or psychological harm

informatics the interdisciplinary study of information processing and management, including the use of technology and data analytics to inform decision-making and improve outcomes in various fields, including health care

intimate partner violence (IPV) physical or sexual violence, stalking, and psychological or coercive aggression by current or former intimate partners

just culture an organizational principle that fosters open and honest reporting of errors and balanced accountability and encourages systemic examination to prevent errors in the future

lateral violence when members of a group who have been historically oppressed or marginalized, such as communities of color, Indigenous peoples, or women, engage in harmful behaviors toward one another

meaningful use ensuring technology being utilized in healthcare settings is done so purposefully and with the intention of improving outcomes
modifiable risk factor a factor that others may influence; a factor that can be altered or controlled by an individual or society
National Patient Safety Goals goals and recommendations tailored to seven different types of healthcare agencies based on patient safety data from experts and stakeholders
near event warning signal of potential hazard or incident that may cause harm to patients
near miss error that has the potential to cause harm but is identified before it happens
never event an adverse event that is clearly identifiable, measurable, serious (resulting in death or significant disability), and preventable
nonmodifiable risk factor a factor that cannot be influenced; a factor that cannot be controlled or altered by an individual or society
occupational safety the practice of protecting workers from injury, particularly those who work in high-risk industries such as health care
personal safety the act of keeping oneself free from injury
physical abuse any use of force or violence to cause physical harm, serious injury, or even death
point-of-care testing (POCT) diagnostic testing that is performed at or near the patient's bedside, rather than in a centralized laboratory
privacy in healthcare, an individual's information is kept confidential and only shared with people who need to know; a fundamental right of patients, and healthcare workers have a responsibility to protect this right
protected health information (PHI) any individually identifiable health information that is transmitted or maintained by a covered entity or business associate, including demographic information (e.g., name, address, birth date), medical histories (including medical record number), test results, and health insurance information
psychological abuse also referred to as verbal or emotional abuse; involves the use of words or actions to manipulate or control a person's feelings and behavior
psychosocial health the psychological and social aspects of an individual's overall health and well-being
root cause analysis a structured process to determine factors that underlie errors and adverse events
sentinel event an unexpected occurrence involving death or serious physiological or psychological injury, or the risk thereof; like a never event but is not necessarily preventable
sexual abuse any unwanted sexual behavior such as touching, groping, or rape; is a violation of a person's bodily autonomy and consent
social violence (also known as community violence) the intentional use of force or power to harm individuals or groups within a community
teach-back method a way for healthcare providers to present information to patients clearly and determine the patients' understanding of the information; the goal is to make sure patients and their families have received and understood important healthcare information
telehealth the use of electronic communication technologies to provide remote healthcare services, including consultations, monitoring, and education
workplace violence any act of aggression or violence that occurs in the workplace, including physical assault, verbal abuse, threats, and harassment

Assessments

Review Questions

1. What factor is considered a nonmodifiable risk?
   a. smoking
   b. age
   c. riding a motorcycle without a helmet
   d. diet

2. The nurse is educating a patient on how to take and record their blood pressure at home. The nurse explains the newly prescribed medication requires daily monitoring of blood pressure readings. The nurse explains monitoring the blood pressure before taking each dose will reduce the risk of a medication error, which can cause a safety risk. Which nursing action can ensure the patient is fully informed and engaged related to

taking a proactive approach in their healthcare needs?

a. Use teach-back method to confirm patient understanding.
b. Provide the patient with a list of other treatment options to discuss with the provider.
c. Encourage the patient to make decisions based on their personal values and preferences.
d. Assume decision-making responsibilities on behalf of the patient.

3. What nursing action should be taken first to facilitate collaboration with other healthcare professionals, such as providers and pharmacists, to address safety concerns and ensure coordinated care for individual patients?

a. Conduct monthly interdisciplinary meetings to discuss patients' care.
b. Share information and updates on patient condition and treatment plan with the family members.
c. Make a decision on your own regarding medication management.
d. Establish a clear communication plan for patient care handoffs.

4. Mr. Jahn recently had knee replacement surgery and is ready to be discharged home from the hospital with his wife. He has completed physical therapy and is considered stable to independently walk but must remain cautious of his surroundings. When considering the patient's risk for falls at home, Mr. Jahn and his wife should be educated to make what adjustment to their home environment?

a. Remove all throw rugs from areas frequently walked.
b. Maintain home thermostat at a comfortable temperature.
c. Keep all overhead lights on brightest settings twenty-four hours a day.
d. Position bed at lowest level.

5. A nurse is working in a busy hospital with a high patient load. She notices that her workplace environment poses several safety risks that could endanger both patients and staff members. The nurse is concerned about the risks and wants to take action to address the situation. What should the nurse do to address the workplace safety risks?

a. Report the safety risks to their immediate supervisor or manager.
b. Ignore the safety risks and focus solely on patient care.
c. Confront the staff members responsible for creating the safety risks.
d. Wait for someone else to address the safety risks.

6. A nurse is caring for a child who has signs of physical and emotional abuse. What should the nurse do to ensure the safety and well-being of the child?

a. Report the signs of abuse to the appropriate authorities.
b. Ignore the signs of abuse and focus on providing medical care.
c. Confront the child's family members about the abuse.
d. Discharge the child and refer them to another healthcare facility.

7. A nurse is caring for a patient who discloses they are experiencing family violence. What nursing action would not support the patient and promote their safety?

a. Provide a safe environment for the patient to further disclose their experience.
b. Conduct a thorough assessment to identify potential safety risks and resources.
c. Report the patient's accusations to other members of the family.
d. Provide emotional support and connect the patient with community resources.

8. A nurse is caring for a patient who is a victim of IPV. The patient has indicated they do not wish to address the violence in their relationship. What should the nurse do to ensure the patient's safety and well-being?

a. Provide the patient with information about community resources and support groups.
b. Develop a safety plan with the patient to minimize the risk of further abuse.
c. Encourage the patient to stay in the abusive relationship to prevent further harm.
d. Ignore the signs of abuse and focus on providing medical intervention.

9. A nurse is working in a community clinic and suspects a child may be experiencing abuse based on the child's physical presentation and behavior. What immediate nursing action should the nurse take to ensure the child's safety and well-being?
    a. Document the observations in the child's medical record.
    b. Report the suspected abuse to the appropriate authorities.
    c. Provide emotional support and connect the child with community resources.
    d. Conduct a thorough assessment of the home to gather additional information about the child's situation.

10. Nurses incorporate telehealth in patient care plans. What service would not be representative of this technological advance?
    a. diagnostic testing
    b. easy access to specialists
    c. health and fitness apps
    d. early warning and detection technologies

11. A nurse looks up information for her patient using an her and reviews notes from the patient's previous admission. The nurse is specifically looking for any reactions to a particular antibiotic. What term describes the nurse's actions?
    a. meaningful use
    b. privacy
    c. confidentiality
    d. point-of-care testing

12. What patient action describes the vital role technology plays in patient care?
    a. visiting a sick friend in the hospital
    b. looking up recent lab test results in the patient portal
    c. calling the provider's office and asking for a medication refill
    d. carrying paper records from provider to provider

Check Your Understanding Questions

1. Describe how a nurse assesses the fall risk of a patient.
2. How can the social determinants of health impact a patient's safety?
3. Describe how a school nurse supports a child who reports they are being bullied in the school.
4. Describe the steps a nurse should take if they are aware of a new nurse colleague experiencing horizontal violence in the work setting.
5. What should a nurse do if they overheard a patient's PHI being discussed in a public area?
6. What should a nurse do if they received a phone call from a family member asking for an update on their loved one's condition?
7. What considerations must be in place to manage emerging technologies, such as artificial intelligence?

Reflection Questions

1. What information would the nurse need to gather if they suspected a patient was the victim of IPV?
2. A nurse is completing an assessment on a patient who is a victim of assault. The patient does not wish to have the police called or to press charges. How should the nurse respond?
3. How does a nurse ensure patient privacy and confidentiality when using technology in the clinical setting?
4. How does a nurse ensure that they are using technology appropriately and ethically in their clinical practice?
5. What do you see as the nurses' role in the development or implementation of technology in healthcare

settings?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #2: Part 3.
   What interventions could the nurse implement if it was determined that the patient was experiencing visual impairments?

What Should the Nurse Do?

Ms. Garcia is a 45-year-old female who has been struggling with housing insecurity and substance use disorder. She has been experiencing housing insecurity for several months, and her addiction to opioids has been worsening. Ms. Garcia has been coming to the clinic regularly for treatment of her substance use disorder, but she has not been able to find stable housing. During her most recent visit to the clinic, the nurse is tasked with assessing her risk for harm related to her unstable living situation. The nurse begins by conducting a thorough assessment of Ms. Garcia's health status and current living situation.

1. What questions should the nurse ask Ms. Garcia to determine any individual risks she may have?
2. From the case scenario, what is the most pressing concern for Ms. Garcia?

Competency-Based Assessments

1. Use the internet to find information to define nursing informatics and explain how informatics has enhanced health care.
2. Write a paragraph describing how technology can enhance nursing practice.

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CHAPTER 10
Infection Control and Prevention

FIGURE 10.1 Handwashing is the single most important technique to stop the spread of infection. (credit: "20120106-OC-AMW-0074" by Flickr/USDA, Public Domain)

CHAPTER OUTLINE

10.1 Infection Cycle
10.2 Asepsis and PPE
10.3 Sterile Technique
10.4 Infection Control and Patient Safety

INTRODUCTION Nurses are responsible for consistently providing patient care that adheres to current evidence-based practices and meets professional standards and guidelines. There are effective scientific and practical control methods to prevent the development of infection and the transmission of diseases in a healthcare setting. Nurses provide healing care to patients of all ages and stages of life. While they are able to foster the emotional aspects of healing, clinical safety must be at the forefront of decisions to make sure both patients and healthcare providers remain safe. While it is widely understood that practices such as handwashing and covering a sneeze are important in everyday life, nurses hold a deeper responsibility to prevent and control infection against the most dangerous infectious agents.

10.1 Infection Cycle

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the infection cycle
- Identify the different stages of infection
- Explain the two responses the body has as defense mechanisms against infection

Nurses are on the front lines of **infection control**, which is the discipline of stopping or preventing the spread of infectious agents, and play an essential role in the prevention of infectious diseases. It is crucial for nurses to understand how infectious diseases spread to ensure vigilance and perform proactive initiatives to prevent and control infections. Microorganisms play a major role in the transmission of diseases. By understanding the conditions that foster the spread of infection, nurses can implement evidence-based interventions to break the cycle and stop the chain of infection. The process of infection control includes handwashing, environmental sanitizing, proper waste management, and adherence to isolation precautions. The main goal of infection prevention for nurses is to prevent the transmission of diseases. Nurses must understand how infections occur and how infection-prevention protocols work to prevent such infections. In doing so, they will ultimately protect themselves and their patients against exposure to infectious agents. Such knowledge includes an understanding of the infection cycle, how and why infections manifest, use of personal protective equipment (PPE) and sterile technique, and the most effective ways to control infections. While proper handwashing is a critical component of infection prevention, there are a number of other ways that nurses can stem the spread of infection and protect themselves and their patients.

An infection that has developed within a healthcare setting is called a **healthcare-associated infection (HAI)**. HAIs can develop from contact within the healthcare setting or as a result of healthcare interventions that take place outside of a healthcare setting. HAIs can spread rapidly and are a serious threat to nurses, patients, families, and the overall hospital system. Patients who develop any infection are at risk for prolonged hospital stays, long-term complications, and/or death, but HAIs are specifically dangerous as they are typically resistant to bacterial treatment and spread rapidly to often immunocompromised hospitalized patients. In the 2021 National and State Healthcare-Associated Infections Progress Report, the Centers for Disease Control and Prevention (CDC) found that each day approximately one in thirty-one U.S. hospital patients will contract an infection associated with their health care (CDC, 2022).

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 5

Refer back to Chapter 8 Admission, Transfer, and Discharge and Chapter 9 Safety and Security for Unfolding Case Study Parts 1–4 to review the patient data. A 65-year-old patient who presented to the emergency department with chest pain and shortness of breath was diagnosed with a myocardial infarction and treated successfully with placement of two coronary artery stents. The patient has been staying on the cardiology unit for post-procedure observation for the last three days. In the last two hours, the patient has developed a cough and reports shortness of breath.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, coronary artery disease **Family history:** Mother deceased, father alive with severe dementia; two healthy sons in their early 40s **Social history:** Previous divorce, married to current husband, George, for twenty years **Allergies:** Latex **Current medications:** • Aspirin 81 mg PO once daily • Metformin 500 mg PO twice daily • Lisinopril 10 mg PO once daily • Atorvastatin 30 mg PO once daily
Flow Chart	**Post Procedure Day 3** **2000: Assessment** Blood pressure: 136/81 mm Hg Heart rate: 110 beats/minute Respiratory rate: 26 breaths/min Temperature: 100.6°F (38.1°C) Oxygen saturation: 88 percent on room air
Nursing Notes	**2100: Assessment** Patient reported increased shortness of breath. Crackles noted in base of right lung. Patient experiencing dyspnea and anxiety. Productive cough with yellow sputum noted.

1. Recognize cues: What cues should the nurse recognize as most concerning?
2. Analyze cues: Based on the recognized cues, what do you think is going on with the patient?

The Infection Cycle

In order for an infection to spread from one individual to another and cause disease, six specific phases must occur. This process is known as the **chain of infection**, and it only results in infection if all six links of the chain are present and intact (Figure 10.2). The six links are a causative agent, a source, a means of exit from the body, a method of spread, a way into the body, and a susceptible host. This chain can occur from a direct transmission between a current and future host or through a more complex pathway where transmission results from multiple intermediate hosts. If, at any time, one of the links breaks, the spread of the infection will halt. In order to break the chain, it is important for nurses to understand how the sequence and function of each link in the chain operates.

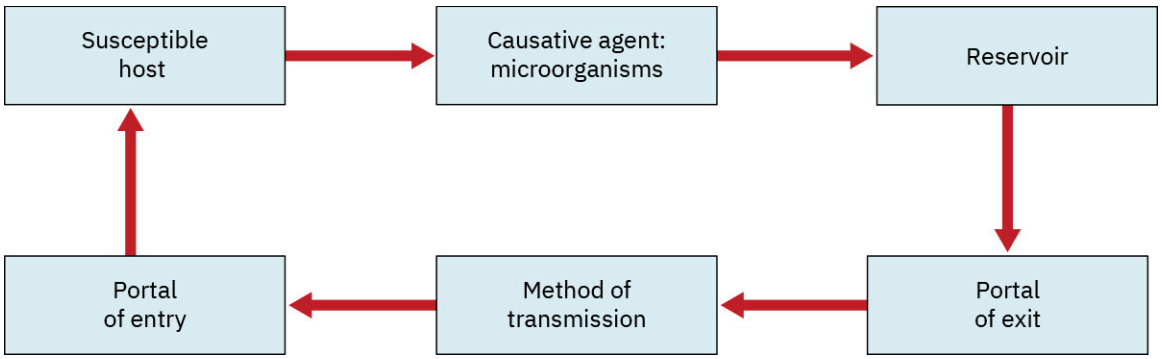

FIGURE 10.2 Each of the stages within the chain of infection represents a requisite condition necessary for the spread of infectious diseases. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Causative Agent: Microorganisms

Single-celled, microscopic organisms called microorganisms are too small to be seen by the naked eye. Their presence as the "causative agent" is the first step in the chain of infection. The term microorganism encompasses

different life-forms with individual and unique sizes and characteristics. The most common types of microorganisms are bacteria, viruses, and fungi. They are found in all elements of life, including water, soil, air, and the human body. Not all microorganisms that live on the human body cause negative outcomes, and certain bacteria are beneficial to human health and well-being. Still, certain microorganisms can cause severe infection, spoil food, and destroy other materials.

Normal Flora

The community of microorganisms that can live on another living organism or inanimate object without causing any diseases or complications is called **normal flora**. From the moment of birth, humans are colonized with normal flora by passage through the birth canal. This normal flora helps to prevent individuals from becoming colonized with more dangerous bacteria, which could result in infection. There are two groups of normal flora.

- Resident flora is predominantly present in a particular area of the body and cannot typically be removed with standard hand hygiene. When disturbed, it re-establishes itself harmlessly in deep layers of skin.
- Transient flora includes microorganisms that are acquired by contact with objects or another person. These microbes can be nonpathogenic or pathogenic. Handwashing is effective in removing these microbes.

Infectious Agent

A **pathogen** is defined as any type of microorganism that causes disease to its host. Pathogens are also referred to as infectious agents, because they cause infections within the body. Pathogens are comprised of viruses, bacteria, fungi, protozoa, worms, or prions. Temperature, moisture, pH levels, oxygen, and access to water are all factors that contribute to a pathogen's ability to grow.

Bacteria are single-celled organisms that can live in or on people's bodies. Certain bacteria are beneficial to humans and can help digest food or enhance the immune system. However, when bacteria cause an infection, antibiotics can be used to either kill the bacteria or prevent their multiplication. Viruses, by contrast, do not have cells of their own; they are built from short sequences of either DNA or RNA that are required for the virus to reproduce. Viruses invade healthy cells that they establish as a host and then begin to multiply from within those cells. Their mode of replication occurs as a burst of thousands of particles from a single virus over a short period of time. Outside of a healthy host cell, viruses are dormant and unable to reproduce due to a lack of materials. Antibiotics do not work to kill viruses, but antivirals may be available to lessen the severity of symptoms. Treatments such as antipyretics, throat lozenges, and saline spray can be provided to support symptom management and support the patient's immune system as they work to fight an active infection. Vaccinations are an excellent example of a tool available to help prepare the immune system to recognize and fight a viral infection by providing passive immunity.

Normal flora can become a pathogen if it presents itself in a region of the body where it is not typically found. For example, multiple bacteria found in the bowels are harmless within that environment, but they can cause an infection if present in the urinary tract. The body's extreme response to widespread infection, called **sepsis**, is the outcome of an inappropriate immune response to an infection that results in function failure in multiple organ systems within the body. Severe complications to organs may occur if untreated, which can ultimately lead to death.

Reservoir

All infectious disease agents require a host species to flourish. The **reservoir** is the habitat or source of the pathogen. The reservoir can be viewed as the pathogen's home, providing a place for the pathogen to survive, grow, and multiply. Most pathogens thrive within a warm, moist, and dark environment. This is why the human body is the most common reservoir for pathogens. Additionally, animals, insects, food, water, and environmental surfaces can all be reservoirs for pathogens.

Human reservoirs may or may not show signs and symptoms of infection or illness. A carrier is a person who does not display any signs of infection but can still transmit the pathogen to other people. An asymptomatic carrier may have the pathogen, but do not display any symptoms. Many times, they do not know they have the pathogen and unintentionally contribute to the spread of infection throughout a given population. But pathogens do not only travel from human carriers to other humans. People can also become infected from pathogens that have animal reservoirs. Most of these pathogens are transmitted between animals, but a human may become an accidental host. The term **zoonosis** refers to an infectious disease that can naturally transmit from animal to human. Common examples of zoonotic diseases include *Yersinia pestis* from rodents, *Bacillus anthracis* from sheep, ZIKA from mosquitos, and *Flaviviridae* from birds. Environmental matter, such as water and soil, can also act as a reservoir for certain

infectious agents. The agents that cause tetanus (*Clostridium tetani*) and botulism (*Clostridium botulinum*) can survive for years within soil and remain infectious for humans. So, whether a pathogen comes from a human or animal reservoir or from environmental matter, it can still cause disease once it is transmitted.

Portal of Exit

For an infection to spread, a pathogen must leave its existing reservoir. The **portal of exit** is the path by which the pathogen leaves the reservoir; in the case of humans, the most frequent route is through bodily fluids or coughing/sneezing. The body's natural response is to remove a pathogen and attempt to expel it. The portal of exit usually corresponds to the localized site of the pathogen. Examples of this include the influenza virus, which exits the respiratory tract through coughing and sneezing, or *Clostridioides difficile* in the gastrointestinal tract, which exits through stool. Broken skin—such as wounds, abrasions, bites—can serve as a portal of exit for pathogens through blood and purulent drainage, which is commonly known as pus, and appears as thick white, yellow, or brown fluid. Blood-borne pathogens can transmit from mother to fetus by crossing the placenta.

Methods of Transmission

The method that a pathogen uses to spread from one host to another is called **transmission**. The most frequent mode of transmission of pathogens is through contact, either direct or indirect (Figure 10.3).

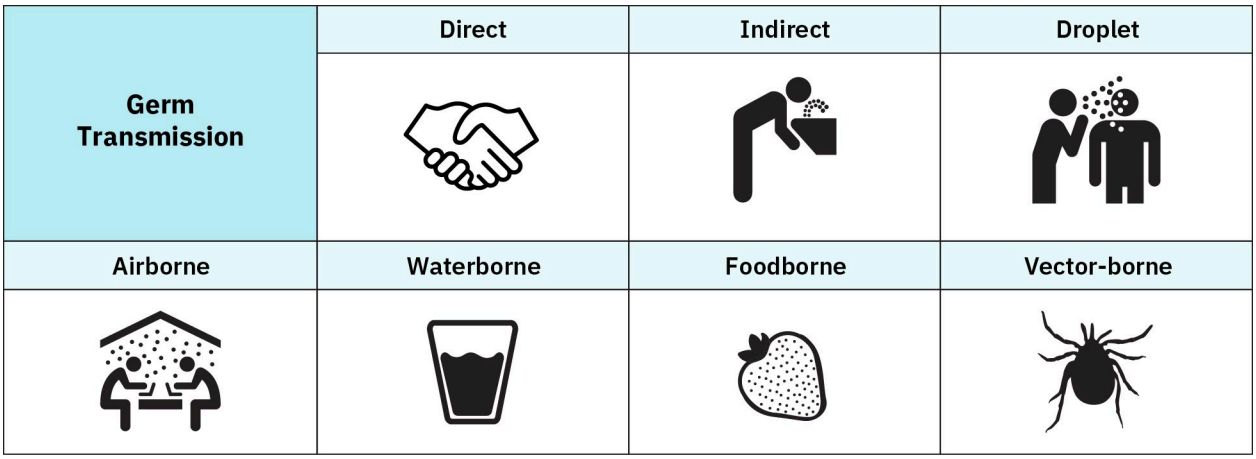

FIGURE 10.3 Germs can be transmitted via multiple routes, which include direct contact, indirect contact, droplets, the air, water, food, and vectors. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

- A process called **direct transmission** occurs when a pathogen transfers directly from an infected person. The pathogen can be passed from person to person through direct transmission. This mode of transmission can occur during any physical contact with a patient, including activities such as bathing, changing dressings, drawing blood, turning, and activities of daily living.
- A process called **indirect transmission** occurs when a pathogen is spread to a new host through an intermediary such as the air, food, water, animals, or objects. Certain pathogens can live only a few minutes outside of a host while others can live for years in the proper environment. Indirect transmission can occur in a hospital from, for example, ineffective hand hygiene, improper cleaning of medical equipment, and failure to change gloves between patients. Other forms of indirect transfer from within a hospital include equipment that is transferred from one patient's room to another, such as medication carts, vitals machines, and glucose monitors. These items require extra care when cleaning.
- A process called **droplet transmission** occurs when a pathogen travels through a spray of water droplets that are released when an infected person coughs, sneezes, or talks. These droplets are typically inhaled through the nose, mouth, or eyes. Due to their larger size (> 5 μm), droplets are propelled only a short distance through the air and do not remain suspended, so droplet spread is classified as direct transmission and does not require an intermediary. Examples of diseases that transmit through droplets include influenza, rubella, pertussis, and meningococcal infection.
- A process called **airborne transmission** occurs when pathogens are carried by dust or the nuclei of an evaporated droplet and remain suspended in the air. Because of their small size (5 μm or smaller), these nuclei can remain suspended in the air for long durations of time, float considerable distances, and potentially infect large groups of people. For instance, SARS-CoV-2 coronavirus transmission can occur in a room in which

an infected person had previously been, because the virus remains suspended in the air. Because airborne transmission occurs through the inhalation of the pathogen by a susceptible host, healthcare facilities need to put into place special air-handling processes, such as negative pressure, to prevent infection.

- A process called **vector transmission** occurs when blood-feeding arthropods infect animals or humans. Examples of blood-feeding arthropods are fleas, ticks, and mosquitos. Commonly known vector-borne diseases include malaria, Lyme disease, and West Nile virus.

Portal of Entry

The site through which a pathogen enters the susceptible host is called the **portal of entry** (Table 10.1). Commonly, pathogens enter a new host using the same portal of exit utilized to leave the reservoir. For example, if the pathogen is transmitted from the respiratory tract through a sneeze or cough, then the portal of entry would also be the respiratory tract of the new host from inhalation of the droplets or touching a surface contaminated with the droplet and touching a mucous membrane. In healthcare settings, wounds, surgical sites, intravenous access sites, and indwelling catheters can all provide a portal of entry for pathogens.

Portal of Entry	Description
Mucosal	Through the eyes or nose
Respiratory	Through the respiratory tract
Genitourinary	Through the urinary tract
Cutaneous	Through wounds or abrasions
Gastrointestinal	Though the intestinal tract

TABLE 10.1 Portals of Entry for Infection

Susceptible Host

The final link in the chain of infection is a **susceptible host**, the organism or person at risk for infection. The degree to which a host is at risk is dependent on their immunity and ability to resist or limit susceptibility. A host may have specific immunity to a particular pathogen through protective antibodies. The antibodies may have developed as a response to a previous infection, toxin, or vaccine. Factors that increase susceptibility include age, chronic illnesses, a compromised immune system, or immune deficiency.

LIFE-STAGE CONTEXT

Susceptibility to Infection

Age is a nonmodifiable risk factor. As adults age, their functional immunity declines, which increases their susceptibility to infection. Older adults are more prone to developing an infection due to multiple factors: the immune system no longer functions as optimally or vigorously; they may experience cognitive impairments, which could make them less likely to comply with necessary hygiene practices; and they are more likely to be diagnosed with comorbidities, such as diabetes, heart failure, or rental insufficiency, all of which can affect the body's ability to fight infections.

As individuals age, their lifestyles typically change as well. Nutritional intake can decrease, reducing protein, vitamins, and electrolytes. This can lead to a decrease in body mass, which increases susceptibility to infections.

The National Institute on Aging recommends vaccination as the number one way to prevent infections in an aging population. The Institute also seeks to reduce the number of infections by promoting healthy aging. This entails remaining active and continuing modified physical activity, enjoying proper nutrition, and maintaining regular and routine appointments with health providers (National Institute on Aging, 2022).

Stages of Infection

All infections progress through a predictable course of four stages (Figure 10.4). Each pathogen can produce distinct and diverse symptoms. An individual's immune response to the pathogen will determine the length and intensity of each stage and account for variability seen between one individual and another.

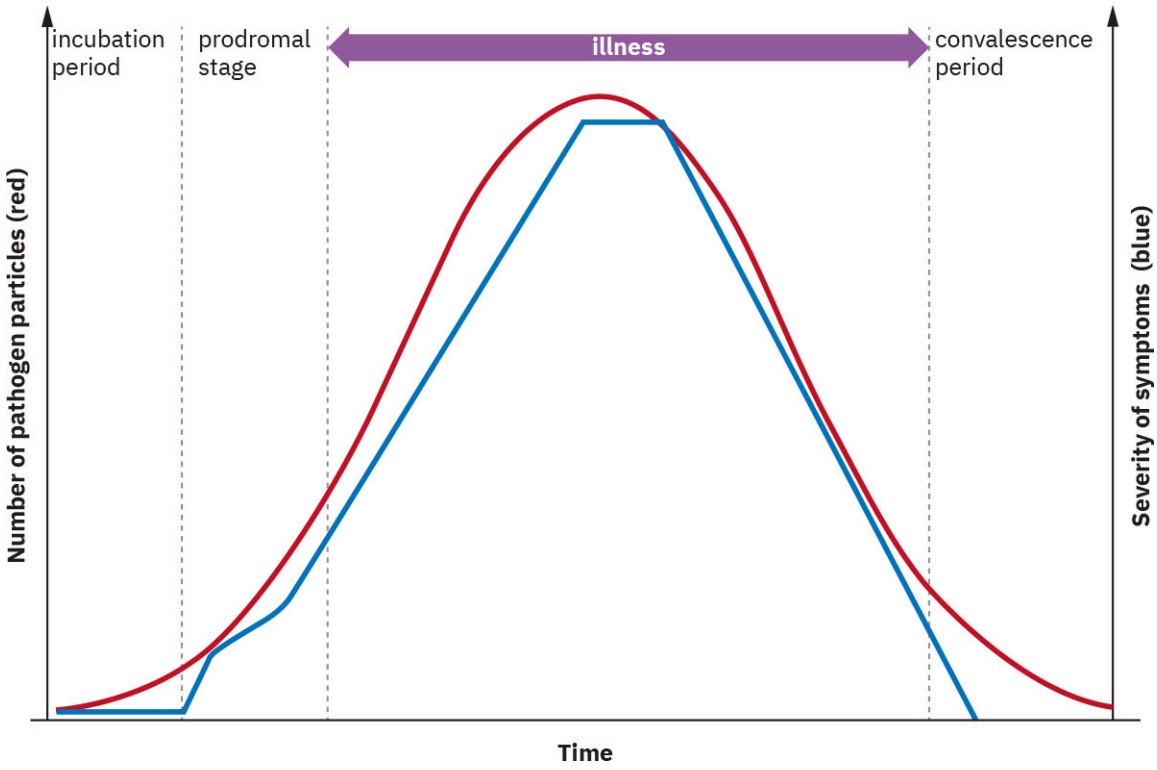

FIGURE 10.4 Infections are either localized or systemic, but all infections go through four stages. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Incubation Period

The stage of infection known as the **incubation period** begins once a pathogen successfully enters a new host. During the incubation period, a person does not show signs and symptoms of an infection because there are not enough pathogens to cause symptoms. The person therefore does not suspect they have been infected. One example is the common cold. The patient feels healthy for one to three days, but then starts to demonstrate symptoms of illness once the level of pathogen has increased in their system. Despite being asymptomatic those first few days, pathogens are continually multiplying and can still be spread to other hosts. Because of this, the longer the incubation period is, the more likely a person is to be unknowingly spreading infection to other people. The incubation period can vary in time from as little as one day, as with the influenza virus, to two to three months, as with the hepatitis B virus. It can even last years, as with the human immunodeficiency virus.

Prodromal Stage

The stage of infection called the **prodromal period** begins at the initial appearance of mild or vague symptoms. These symptoms arise as a result of activation of the immune system and typically present as fever, pain, soreness, or inflammation. Symptoms at this stage are often too general to indicate a specific disease. Referring to the patient exposed to the common cold, after one to three days of feeling healthy, they may then have symptoms such as a headache, scratchy throat, and watery eyes. Though present, these symptoms are nonspecific and could be associated with a variety of other illnesses. This stage can vary in its duration, but it is typically shorter than the incubation period.

Illness

The **illness period** stage of infection begins when a person experiences the specific signs and symptoms of a certain disease. This period represents the peak of the infection, and it is during this time that a person is highly contagious. In this stage, our patient who was exposed to the common cold will start to show specific symptoms such as mild

hacking cough, sneezing, achy muscles and bones, and low grade fever. If the individual's immune system (with or without medical intervention) is able to combat the pathogens, a period of decline in the pathogens begins. The infection begins to weaken, and symptoms decrease.

Convalescent Period

The final stage of infection is the **convalescent period**. This is the stage where recovery and healing begin. Closing out our example of the patient who has the common cold, the patient's symptoms will fade, and the patient will report feeling back to baseline. During this time, a person is gradually able to return to their normal functions; some infections, however, can result in permanent damage from which the body is unable to repair and recover.

Body's Natural Defense Mechanism Against Infection

The human body's immune system provides a mechanism for staying healthy through protection against harmful pathogens. An immune response can be classified as either nonspecific, meaning it targets pathogens in a nonspecific, less effective manner, or specific, which allows for a high level of adaptation and effectiveness. Nonspecific immunity includes physical, chemical, and cellular defenses that are classified as either primary or secondary. Secondary defenses are broken down further into inflammatory and immune responses. Specific defense would be antibodies from the immune system targeting a specific antigen that they are designed to identify and destroy.

Primary Defenses

Primary defense barriers prevent pathogens from entering the body through structural barriers, destroy them once they have entered the body, or flush them out of the body (Table 10.2). These barriers are not triggered as a response to pathogens but instead serve as a continuous first line of defense against infection.

Defense	Description
Skin	The skin provides a highly effective physical barrier to infection. The top layer of skin, the epidermis, is made up of cells containing keratin, which makes the skin surface mechanically tough. If skin integrity is compromised due to injury, such as abrasions, cuts, incisions, or burns, the barrier is breached, which creates a portal of entry.
Mucous membranes	The mucous membranes that line the nose, mouth, lungs, and digestive and urinary tracts are coated with secretions that aid in fighting against potential pathogens. The nares, trachea, and bronchi are coated with mucous membranes that trap pathogens. Coughing and sneezing allow pathogens to be forcibly expelled from the body.
Stomach	The acidic environment of the stomach destroys pathogens that enter the digestive tract. Normal peristalsis—the muscles moving food through the digestive tract—as well as vomiting and diarrhea work to remove pathogens that enter the tract. Additionally, the natural flora of the body, specifically in the gastrointestinal system, serves as a defense mechanism.
Eyelashes and eyelids	These structures provide a physical and mechanical barrier from dust and airborne microorganisms through blinking; tears wash away organisms.
Cilia	Housed in the nares, cilia move a layer of mucus that covers the airways. This mucus traps pathogens, preventing them from reaching the lungs.

TABLE 10.2 Primary Defense Barriers to Infection

Inflammatory Response

Pathogens that are not stopped by primary mechanisms and are able to enter the body trigger a second set of defenses. Nonspecific, innate immune responses work to recognize and eliminate pathogens.

One of the first responses that occurs when a pathogen breaches the nonspecific innate immune system is an **inflammatory response**. This response can entail an area of the body by swelling, turning red, feeling hot, having

pain, or losing function. Although inflammation is often perceived as a negative consequence that results from injury, it actually establishes a physical barrier against infection. The process of inflammation aids in the recruitment of cellular defenses, which remove pathogens and damaged cells while initiating repair mechanisms.

The process of inflammation is triggered when damaged cells release histamines and other chemicals. The rise in histamines increases the permeability of the blood vessels, which results in additional blood flow to the area. This additional blood flow manifests as localized warmth and redness. Because the blood vessels are more permeable, fluid leaks from them and accumulates in surrounding tissue, resulting in swelling at the site. The swelling places pressure on nerve endings, resulting in pain.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Assessment of Inflammatory Response

The cognitive skill of recognizing cues requires the nurse to collect patient data from health assessments, the environment, and health records, and identify abnormal findings.

A nurse assessing a patient who has a suspected infection will consider findings related to an inflammatory process, such as increased body temperature, heat at the site, redness, or swelling. Additional assessment data gathered should include physical history, degree of pain, loss of function, and lab levels that indicate infection, such as an increased white blood cell count.

A **fever** can be one of the body's responses to pathogens that cause inflammation; it is defined as a rise in core body temperature and is a component of the inflammatory response extended past the localized site. A low-grade fever is a natural immune response and defense mechanism; many providers will not initiate pharmacological interventions until it rises above 102°F (38.9°C). After all, a fever enhances the nonspecific immune defenses by stimulating an increase in white blood cells (WBCs). WBCs are produced in the bone marrow and are an essential part of the immune system as their function is to find, fight, and destroy infection within the body. If WBCs are elevated, this can indicate an immune response from the body and demonstrate actively fighting a disease. The rise in temperature can also prevent the growth of many pathogens and can trigger specific immune responses.

Immune Response

In contrast to a nonspecific immune response, specific acquired immunity occurs when an individual's immune system acquires antibodies from a different source. In other words, this type of immunity provides a targeted response to a specific pathogen and can be acquired either actively or passively. The main function of the immune system is to recognize self from nonself and initiate a response accordingly. An **antigen** is anything the immune system recognizes as a foreign object or substance and subsequently initiates formation of antibodies. Immunoglobulins, or **antibody**, are proteins created in the body in response to an antigen in order to fight the identified substance or toxin.

When a pathogen enters the body and **active immunity** occurs, antibodies form to help protect the body from that pathogen. In subsequent invasions from that same pathogen, the body is able to respond rapidly to the antigen. Active immunity can be acquired through infection, such as with chicken pox, or artificially, through immunizations. The result of antibodies being passed from one person to another is **passive immunity**. This can occur naturally through the placenta or breastfeeding, or it can occur artificially through injections of serums or blood products that contain antibodies.

LINK TO LEARNING

As part of its mission to promote health and prevent disease, the CDC publishes written recommendations for vaccinating U.S. children and adults (https://Openstax.org/r/77recvaccine).

10.2 Asepsis and PPE

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define the two types of asepsis
- Recognize the negative implications healthcare-associated infections have on healing
- Correlate appropriate personal protective equipment with their necessary uses

Nurses in all roles are in a unique position to create a safe patient care environment. From bedside nurses to executives, fostering safe healthcare environments can prevent the transfer of pathogens and the spread of infection. With evidence-based practices, nurses can facilitate a patient's plan of care and recovery while minimizing risks and complications related to infections. Proper use of infection-control measures can directly affect patient morbidity and mortality.

Asepsis

The state of being free from disease-causing contaminant is referred to as **asepsis**. These contaminants include bacteria, viruses, fungi, and parasites. The term *asepsis* can also refer to the process of preventing infection by minimizing the number of contaminants present and decreasing the ability to transport pathogens. The two types of asepsis include medical and surgical (Table 10.3). Furthermore, medical asepsis has three degrees: sanitization, antisepsis, and disinfection. An example of sanitization is physically removing microorganisms by cleaning linen. An example of antisepsis would be preoperative skin cleansing. Disinfection kills microorganisms on objects such as tables or blood pressure cuffs that come into contact with the patient or patients. This process utilizes strong chemicals called disinfectants, which should not be used on skin.

Medical Asepsis	Surgical Asepsis
Referred to as "clean technique"	Referred to as "sterile technique"
Reduces number of pathogens	Eliminates all pathogens
Used in administering: • Medications • Enemas • Tube feedings • Daily hygiene	Used when performing: • Dressing changes • Catheterizations • Surgical procedures

TABLE 10.3 Types of Asepsis

Medical Asepsis

The techniques and procedures used to decrease the potential for the spread of microorganisms and infection is called **medical asepsis**. Medical asepsis is also referred to as "clean technique" in the healthcare environment because it is a standard practice used to avoid spreading infection from one person to another throughout a facility. The core practices of medical asepsis include hand hygiene, environmental cleanliness, and the use of protective equipment and isolation.

Surgical Asepsis

The absence of all microorganisms within any type of invasive procedure is called **surgical asepsis**. Maintaining surgical asepsis requires the use of sterile technique, a set of specific practices and procedures that are performed to make an environment and equipment in that environment free of all microorganisms. Principles of sterile technique help control and prevent infection. Sterile technique is discussed in depth in 10.3 Sterile Technique.

Hand Hygiene

The term hand hygiene refers to the act of handwashing, hand rubbing (using alcohol-based hand sanitizer), or surgical hand antisepsis. Hand hygiene is regarded as one of the most important elements in the prevention and control of infections. Hand hygiene that is timely and effective protects patients, healthcare workers, and the

healthcare environment from the spread of infection. Hand hygiene should be performed when arriving and leaving a patient care unit, before direct contact with a patient, before and after removing gloves, after contact with patient's skin, and when hands are visibly dirty or soiled with blood or bodily fluids. Healthcare providers may be required to wash their hands as many as 100 times in a twelve-hour shift, depending on the number and acuity of patients.

LINK TO LEARNING

The World Health Organization has created the Five Moments of Hand Hygiene (https://Openstax.org/r/775momenthand) to help healthcare workers improve understanding of hand hygiene and the five moments when it is required.

Cleaning hands using an alcohol-based sanitizer is an effective form of hand hygiene if the hands are not visibly soiled. The advantages of alcohol-based hand hygiene are that it takes only twenty to thirty seconds, can be completed directly at the point of care, and does not require a sink, water, or towel. Alcohol-based hand sanitizers can kill most pathogens. Keep in mind, however, that certain bacteria are not removed by hand sanitizers. These bacteria are only removed by handwashing. One example of bacteria that is only removed with soap and water is *Clostridioides difficile* (*C. diff*). Nurses who take care of patients with *C. diff* or other stubborn bacteria will usually be told before they commence care. When these instances occur, the nurse will know to avoid the hand sanitizer and choose to wash their hands with soap and water instead. When in doubt, washing your hands is the best choice.

Washing hands with soap and water is recommended if the hands are visibly dirty, soiled, or are contaminated with blood or other bodily fluids. It is essential to spend the proper amount of time on handwashing; washing hands for at least thirty seconds removes up to ten times the number of bacteria as does washing for fifteen seconds.

PATIENT CONVERSATIONS

Understanding When to Use Soap and Water for Hand Hygiene

Scenario: The nurse is entering a patient's room to complete q4h vital signs. This patient is currently positive for *Clostridioides difficile*. After donning personal protective equipment, the nurse enters the room.

Nurse: Hi, Ms. Lee, it's your nurse Bryan. I'm here to get your vital signs. Let me wash my hands, and we will get started. How are you feeling?

Patient: I'm doing okay, I suppose. I'm not in any pain right now, so that's good news.

Nurse: That's excellent. Let me just put on a pair of gloves, so I can verify your name on your wristband. Can you tell me your name, date of birth, and if you have any allergies?

Patient: Yang Lee, 03/27/1942. I'm allergic to iodine. Why did you wash your hands when you came in here when there's hand sanitizer over by the door?

Nurse: Performing proper hand hygiene is a critical component of preventing the spread of infections, especially in the hospital. Alcohol-based hand sanitizers are a great method for cleaning your hands, but there are times when it is not effective.

Patient: Is getting my vital signs one of those times?

Nurse: The stool sample that was sent to the lab on Monday came back positive for a bacteria called *Clostridioides difficile*, or *C. diff*. Alcohol alone cannot kill *C. diff* spores, and studies have shown soap and water to be much more effective at removing them. In order to prevent the spread of infection, you'll notice that all of the healthcare workers will be washing their hands with soap and water when they enter and exit your room.

Patient: So, should I wash my hands too?

Nurse: Since you already have *C. diff*, you cannot infect or re-infect yourself. However, washing your hands will prevent you from getting bacteria such as *C. diff* in the future. Additionally, washing your hands will help prevent

spread to others inside and outside of the hospital. Nurses always wash our hands frequently because it washes away all kinds of bacteria. It really is the best way to prevent spreading bacteria.

Patient: That makes sense. I wouldn't want anyone else to get sick from what I have. Thank you for being so careful.

Healthcare-Associated Infections

Healthcare-associated infections (HAIs), also known as nosocomial infections, are infections acquired while receiving medical treatment in a healthcare facility. Although preventable, HAIs are some of the most common complications for patients within a healthcare setting and can prolong hospital stays and recovery time. According to the CDC, one in every twnty-five hospitalized patients will contract an HAI (CDC, 2022). The most common HAIs are associated with invasive devices such as catheter-associated urinary tract infections (CAUTIs), central line–associated bloodstream infections (CLABSIs), ventilator-associated pneumonia (VAP), and surgical site infections (SSIs).

The risk for developing an HAI is dependent on the infection-control policies within a facility and the degree of adherence to them. Additional risk factors include a patient's immune status, age, underlying comorbidities, and the prevalence of pathogens within the environment. Length of hospitalization, number of invasive procedures, and amount of antibiotic therapy received all increase a patient's risk for acquiring an HAI.

LINK TO LEARNING

The Global Alliance for Infections in Surgery has outlined seven strategies to prevent healthcare-associated infections (https://Openstax.org/r/77prevtinfect) in the healthcare setting.

Preventing Healthcare-Associated Infections

Nurses are at the front line for preventing the transmission of pathogens through infection-control policies and procedures. These evidence-based prevention strategies and control practices can directly reduce HAIs. Appropriate hand hygiene and glove usage heavily contributes to an increase in patient safety and the prevention of HAIs. Keeping a healthcare environment clean by disinfecting equipment between patients is an additional vital prevention measure. Additionally, the use of proper personal protective equipment can prevent the transmission of pathogens. Nurses must stay current with how to protect themselves from newly identified pathogens and adhere to the protocols put in place. In recent history, viruses such as Ebola and the coronavirus that caused the COVID-19 pandemic all required specific infection-control measures. Healthcare providers were and still are on the front lines in these instances and must also educate the public and their patients about necessary protocols.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Preventing HAIs

Definition: Quality and Safety Education for Nurses (QSEN) competencies were designed to emphasize key elements that pre-licensure nursing students should be competent in at the time of graduation. Safety is defined as minimizing risk of harm to patients through both systems effectiveness and individual performance.

Knowledge: Students will examine human factors and other basic safety design principles as well as commonly used unsafe practices, using evidence-based sources to enhance knowledge.

Skills: Students will demonstrate effective use of strategies to reduce risk of harm to self or others.

Attitudes: Students will value their own role in preventing errors and reducing the spread of infections.

Clinical scenario: A new nurse is working on a medical-surgical unit. Bedside shift report is beginning, and the nurse notices a sign on one patient's door stating that the patient is on airborne precautions. The box of masks located outside the patient's room is empty.

Step 1: The nurse uses *knowledge* to recognize that the patient's condition warrants airborne precautions and that

masks are the first line of defense for reducing the spread of airborne pathogens. The nurse uses knowledge of evidence-based sources to confirm that entering the room without a mask would place themselves and other patients on the unit at risk for exposure to the identified pathogen.

Step 2: The nurse identifies the *skill* of replacing the empty box before anyone can enter the room as an effective use of infection-control strategies to reduce risk of harm to self or others.

Step 3: The nurse stops and replaces the supplies outside the patient's room before continuing with the morning report. The nurse can now begin the shift with a positive *attitude*, knowing value is placed on their role in reducing the spread of infection and providing quality, competent nursing care.

Reporting Healthcare-Associated Infections

As part of its mission in healthcare safety, the CDC has developed the National Healthcare Safety Network (NHSN), the nation's most widely used system for tracking and surveillance of HAIs (CDC, 2022). More than 38,000 healthcare facilities provide data to the NHSN, which are, in turn, used for analysis and development of prevention initiatives by states, regions, and national public health agencies. These agencies include acute care/critical access hospitals, long-term care facilities, ambulatory surgery centers, long-term acute care facilities, inpatient psychiatric facilities, inpatient rehabilitation facilities, and dialysis facilities. The report provides data on CLABSIs, CAUTIs, ventilator-associated events (VAEs), SSIs, methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream events, and *C. diff* events. Federal government bodies such as the Centers for Medicare and Medicaid Services (CMS) use these data to determine performance incentives. Community members can use this information to select the healthcare facilities that they feel best fits their needs.

Personal Protective Equipment

Healthcare workers use **personal protective equipment (PPE)** as a means of barrier protection for their eyes, nose, mouth, and skin from exposure to blood and other potentially infectious bodily fluids and materials. The most commonly worn PPE includes gloves, gowns, face masks, protective eyewear, and face shields. These barriers are used in both standard precautions as well as in transmission-based precautions. Every nurse must be knowledgeable about the appropriate PPE to wear in various situations. Simply wearing all available PPE is not appropriate practice and is wasteful considering healthcare resources.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Initiating the Use of Additional Personal Protective Equipment

This scenario requires a nurse to take action to prevent infection from spreading. A nurse is reviewing a patient's morning laboratory results. The nurse notes that the patient's stool culture has come back positive for vancomycin-resistant *Enterococci* (VRE). Knowing the method of transmission of VRE (contaminated equipment, surfaces, hands), the nurse analyzes these data and prioritizes how they will be incorporated into the patient's care. The nurse knows that additional interventions will need to be implemented.

The nurse hangs a contact isolation sign on the door and places a PPE cart next to the room. The cart contains masks, gloves, face shields, hand sanitizer, and disinfectants, among other PPE items. When the nurse enters the patient's room, they don the appropriate PPE per facility policy. They also provide the patient with education regarding why they will be seeing staff wearing additional PPE.

Gloves

The use of gloves in the healthcare setting prevents contamination of the hands and reduces the likelihood of the transmission of pathogens (Figure 10.5). Medical gloves should be worn when providing care to protect the healthcare provider as well as the patient. Further, sterile gloves should be worn for procedures that pose greater risk of contamination to the patient, which are indicated as sterile procedures. Gloves are only effective in infection prevention if they are used properly, and the wearer performs proper hand hygiene before and after wear. Gloves should be removed and hand hygiene should occur once contact with blood or bodily fluids has ended, once contact with a single patient has ended, when leaving a patient's room, and when there is a need for hand hygiene. The same pair of gloves should never be worn more than once.

FIGURE 10.5 Donning nonsterile gloves in a healthcare setting is one of the most effective ways to prevent infection. (credit: "13550," by Amanda Mills/Centers for Disease Control and Prevention, Public Domain)

Gowns

A **medical isolation gown** is a long-sleeved garment that covers the body front and back from the neck to the thighs, overlaps or meets in the back, fastens at the neck and waist, and is easy to put on and take off. They are used in the healthcare setting as a broad barrier against blood or bodily fluids. Gowns are used for patients who are on contact and droplet precautions and for any potentially splash-generating procedures. Medical isolation gowns must be removed before leaving an individual patient area and hand hygiene must occur. A **surgical gown** is worn by healthcare personnel during a surgical procedure to protect both the patient and the personnel from transmission of pathogens. Examples of gowns can be seen in Figure 10.6.

(a) (b)

FIGURE 10.6 Multiple styles of gowns may be available within a healthcare setting. (a) Medical and (b) surgical isolation gowns can be worn with additional forms of PPE such as masks, gloves, goggles, and shoe covers. (credit a: "Call to Service: Army psychologist on the COVID-19 battlefront" by unknown, Public Domain; credit b: "USMC-080618-M-0884D-002.jpg" by Sgt. Rocco DeFilippis, Public Domain)

Masks

Healthcare workers should wear a mask when caring for a patient on droplet precautions or when providing care to patients who are immunocompromised. A **surgical mask** is worn over the nose and mouth to prevent the transmission of large particle droplet matter generated through coughing or splash-generating procedures. These masks have either ear loops or ties and can be either pleated or made of molded material. An **N95 respirator mask** is a tight-fitting cover that, when properly fitted, protects the wearer from very small particles that float in the air, such as tuberculosis (TB), measles, chickenpox, and COVID-19 (Figure 10.7). When properly worn, an N95 mask can block at least 95 percent of non-oil-based particles that are 0.3 microns or larger. Any time a mask becomes wet from exhaled moist air, it weakens the integrity of the mask, warranting a mask change.

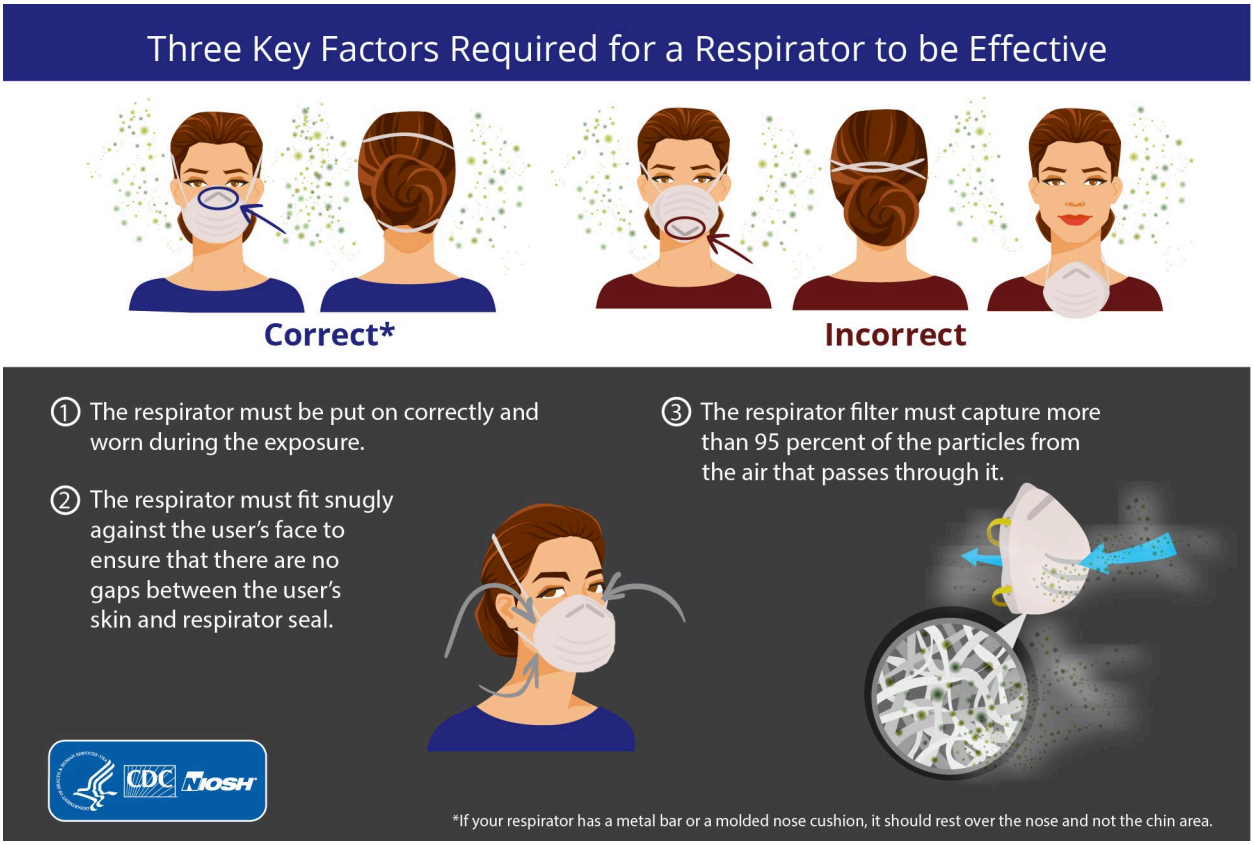

FIGURE 10.7 While the N95 respirator can be highly effective at stopping particles from passing through, it must fit tightly on the wearer's face and must be donned and doffed properly in order to provide optimal protection. (credit: modification of "Three Key Factors Required for a Respirator to be Effective" by Centers for Disease Control and Prevention, Public Domain)

Eyewear and Shields

The use of eyewear and shields form a barrier and protect the membranes of the eyes, nose, and mouth when performing tasks that could produce splashes of bodily fluids or blood. Goggles should fit snugly around the eyes and protective face shields should cover the entire forehead, extend past the chin, and wrap around the sides of the face (Figure 10.8).

(a) (b)

FIGURE 10.8 (a) Goggles and (b) face shield add protection for healthcare providers. These can be worn with additional PPE, while considering placement and appropriate use of each item. (credit a: "CCP treats 1st hospitalized, COVID-positive GAFB member" by Senior Airman Abbey Rieves, Public Domain; credit b: "UAMTF 352-1 assists Philadelphia health care workers" by U.S. Army photo by Pfc. Joshua Cowden, 22nd Mobile Public Affairs Detachment, Public Domain)

Donning PPE

The type of PPE used in a healthcare setting is based on the level of precaution and isolation that is required. The meticulous use of PPE is a vital step to reduce contamination and transfer of infectious diseases. The CDC recommends a standardized procedure for donning, or applying, PPE, but the procedure should always be tailored to the specific type of PPE being used. Prior to donning PPE, always perform hand hygiene. The steps for donning PPE should follow the guidelines outlined by the CDC.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Donning Personal Protective Equipment, Evidence-Based Practice

Definition: Quality and Safety Education for Nurses (QSEN) competencies were designed to emphasize key elements that pre-licensure nursing students should be competent in at the time of graduation. Employing evidence-based practice means "integrating best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care."

Clinical scenario: Here are some evidence-based steps issued by the CDC (n.d.) on donning PPE:

Step 1: An isolation gown should be donned first. The gown should be picked up by the shoulders, which allows it to fall open without touching the floor. The gown should be positioned to fully cover the torso (from the neck to the knees) and arms (to wrists), and it should wrap around the back. Fasten the ties at the neck and the waist.

Step 2: After securing the gown, don the face mask or N95 mask. Ensure that the ties or elastic band fits at the middle of the head and neck. The mask should be snug to the face and below the chin. N95 masks should be fit checked to ensure proper seal.

Step 3: Once the face mask is in place, goggles will be placed over the top of the edge of the mask. A face shield is placed over the eyes.

Step 4: The final step for donning PPE is the application of gloves. The glove cuff should extend over the gown cuff. Ensure that the correct size gloves are selected to prevent them from falling off or ripping.

Doffing and Disposal of PPE

Once patient care is completed, all PPE except for a respirator will be removed, or doffed, prior to exiting a patient's room. All personal protective equipment (PPE) is discarded in the appropriate receptacle as outlined by facility policy. Following the removal of PPE, perform hand hygiene immediately. The steps for doffing PPE should follow the guidelines outlined by the CDC.

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 6

Refer back to Unfolding Case Study #2: Part 5 for a review on the patient data.

Flow Chart	**Post Procedure Day 3** **2200: Assessment** Blood pressure: 132/79 mm Hg Heart rate: 105 beats/minute Respiratory rate: 22 breaths/min Temperature: 100.6°F (38.1°C) Oxygen saturation: 92 percent on 3 L nasal cannula
Diagnostic Test Results	Chest x-ray: bilateral lung infiltrates present
Provider's Orders	**2230: New Orders** Collect sputum culture. Administer vancomycin IV 15 mg/kg q8 hours. Titrate supplemental oxygen to maintain saturation > 92 percent. Initiate droplet precautions.

3. Prioritize hypotheses: How do you suspect the patient developed pneumonia while in the hospital?
4. Generate solutions: What is the rationale for each of the provider's orders?

10.3 Sterile Technique

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the different levels of clean and how to achieve each
- Recall common methods of sterilization and disinfection in the healthcare setting
- Demonstrate the different principles of sterile technique

Environmental cleanliness is a foundational concept in nursing. Maintaining a clean environment is essential for preventing infectious disease and the spread of HAIs. In the absence of a properly cleaned environment, the acts of handwashing and donning PPE are substantially less effective in the spread of infection and transfer of pathogens. Nurses must recognize which items in the healthcare environment should be cleaned as well as the proper way this cleaning should be done. They must also be able to identify when an item is contaminated and the proper steps that must be taken for disposal or sterilization. Agency policies, along with governmental guidelines, will help nurses seeking specific answers to these questions.

Levels of Clean

For the chain of infection (see Figure 10.2) to be broken, it is critical that nurses comprehend the proper knowledge and resources for how to clean their environment. To minimize the risk of transmission of infection, there are three levels of cleanliness, in increasing degrees of purity, that specify how specific objects and items should be cleaned: sanitization, disinfection, or sterilization. The concepts of asepsis discussed in 10.2 Asepsis and PPE provides a strong foundation for the three levels of cleanliness.

Sanitization

The removal of visible soil from objects and materials using water with detergents or products that are enzymatically formulated to inhibit microbial growth is called **sanitation**. Sanitation and cleaning coincide with the goal of medical asepsis, which is to keep all employee and patient-care areas free of debris and contamination. All items must first be cleaned before they can be disinfected or sterilized.

Disinfection

The process of **disinfection** removes microorganisms and disease-causing pathogens from inanimate objects. This process is completed on both semicritical and noncritical items. Semicritical items include items that have contact with mucous membranes or nonintact skin. Examples of these types of items include reusable devices, such as endoscopes and respiratory therapy equipment. Noncritical items have contact with skin but not mucous

membranes. Because of this, they do not carry a high risk of infection transmission. Examples of these items include stethoscopes, blood pressure cuffs, and bed linens.

Sterilization

The process of **sterilization** is a procedure that eliminates all microorganisms and spores in or on an object. Critical items require sterilization due to their high risk for infection if they are contaminated. Examples of this include all surgical instruments, catheters, needles, and chest tubes.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Use of an Autoclave

A tool that nurses may use in a healthcare setting is an autoclave (Figure 10.9). Autoclaves use high-pressure steam for a designated amount of time to kill pathogens on objects of various shapes and sizes. Common examples are surgical tools, lab instruments, and pharmaceutical objects. Nurses may have various roles in sterilization dependent upon their healthcare setting. Nurses in an outpatient office setting may be responsible for the entire sterilization process, while in contrast, in a surgical setting there may be technicians who complete this process. Nurses must be aware of their specific responsibility in sterilization and develop those skills accordingly.

FIGURE 10.9 An autoclave can sterilize reusable instruments. (credit: "Autoclave," by Tom Beatty/Flickr, CC BY 2.0)

Methods of Sterilization and Disinfection

The process of disinfection is carried out by using chemical disinfectants. While some chemicals may have a broad spectrum of effectiveness, those that have a narrower spectrum are typically easier to use and less toxic. Common chemicals used as disinfectants include alcohol, hydrogen peroxide, and chlorine. Sterilization can be done by both physical and chemical methods, or a combination of both.

Physical

The process of physical sterilization within a hospital uses large equipment, such as autoclaving with steam. The steam heats up to 250 to 273°F (121 to 134°C) and inactivates all fungi, bacteria, viruses, and bacterial spores. Steam sterilization is the most common form of physical sterilization used in hospitals. Heat can also be used to sterilize by heating, flaming, incineration, boiling in water, and dry heat.

Chemical

Chemical sterilization uses products, such as ethylene oxide, concentrated bleach, and formaldehyde. This type of sterilization is typically used for instruments, such as those containing rubber, plastic, or glass, that could not tolerate high heat temperatures and/or humidity.

LINK TO LEARNING

In May 2022, the World Health Organization released a Global Strategy on Infection Prevention and Control (https://Openstax.org/r/77globalprevn) to promote the prevention of infections in all healthcare settings.

Principles of Sterile Technique

A **sterile technique** is the use of practices and procedures that inhibit microorganisms in a specific environment and prevent contamination. This technique is an essential element for patient safety, and it is vital that all nurses understand the principles of the skill. Sterile technique is most commonly practiced in operating rooms and during special procedures, diagnostics, and labor and delivery. It is also used at the bedside for sterile procedures, such as the insertion of chest tubes, central venous lines, and indwelling urinary catheters.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Preparing for Sterile Technique, Evidence-Based Practice

Definition: Quality and Safety Education for Nurses (QSEN) competencies were designed to emphasize key elements that pre-licensure nursing students should be competent in at the time of graduation. Employing evidence-based practice means "integrating best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care."

Sterile technique entails using evidence-based practices and procedures to minimize pathogens and deter contamination in a healthcare environment. Student nurses must know these practices, as recommended by governmental bodies and healthcare-setting policies. Students must demonstrate effective use of sterile technique to reduce risk of harm to self or others.

Clinical scenario: Prior to initiating sterile technique, the nurse must take several critical steps to ensure sterility:

Step 1: Always perform hand hygiene before initiating any sterile procedure.
Step 2: Ensure all working surfaces remain clean and dry.
Step 3: Verify you have all supplies that are needed and that they are within the expiration date.
Step 4: Keep all supplies in reach to prevent them rubbing against things or dropping.
Step 5: Bring a second pair of sterile gloves in the event of a break in sterility.

Opening a Sterile Package

Remove any paper or plastic layer that is used to form a barrier between the work surface and inner wrapper. Inspect the package to ensure that it is intact and within the expiration date. To open a sterile package, lay it on a clean and dry surface so that the flaps are facing up, and the top flap is pointed down (forming an upside-down triangle like an envelope). The outside of the package is unsterile as is the 1 in (2.5 cm) border of the package.

LINK TO LEARNING

Proper technique when preparing a sterile field is critical in order to provide safe care to patients during procedure. Lecturio Nursing has put together a video that describes how to open a sterile kit (https://Openstax.org/r/77sterilekit) that reviews this skill.

Applying Sterile Gloves

Clean gloves are different from **sterile gloves** because with sterile gloves the sterilization process is completed by the manufacturer; they are free from microorganisms and are individually packaged as a pair to remain free of pathogens. Prior to applying sterile gloves, determine your size. The gloves should fit snugly but not tightly. Place the glove package on a clean and dry surface. Using the outside flaps that form the 1 in (2.5 cm) border, open the glove package so that the cuffs are closest to you. Using your nondominant hand, pick up the opposite glove,

touching only the inner cuff (the part that will touch skin). Keeping the hand flat and the thumb tucked in, slide your dominant hand into the glove, being careful not to lower hands below the waist (Figure 10.10). Using the gloved hand, slip your fingers into the cuff of the remaining glove. Lift the glove up and away from the table. Slide your nondominant hand into the glove. Keep the gloved thumb up and back to prevent it from touching bare skin. Once both gloves are on, you can adjust to fit fingers as needed. Keep hands above the waist and within the visual field to avoid breaking sterility.

FIGURE 10.10 Be sure to only touch the cuff of a sterile glove while donning. (credit: "5727" by Kimberly Smith and Christine Ford/Centers for Disease Control and Prevention, Public Domain)

Preparing and Maintaining a Sterile Field

In order to maintain a sterile field, it is critical to follow several protocols. The nurse must always be able to see the field. This means that if you turn your back and can no longer see the field, sterility is broken. Do not reach over the sterile field; even after donning sterile gloves, your arms and sleeves are not sterile. Be aware of any stethoscopes or bandages that may hang into the field, breaking sterility. Any sterile object that is held below the waist is considered nonsterile, including a sterile-gloved hand. Any objects that become wet are no longer considered sterile due to the ability for bacteria to grow rapidly in a wet environment.

Pouring Sterile Solutions

Part of a sterile field may include the use of sterile solution. In order to pour a sterile solution, healthcare providers must follow several steps to avoid breaking sterility. Note first that a solution is sealed and unexpired. Sterile solutions should be poured 6 in (15 cm) away from the field into a sterile bowl or tray from the side of the sterile field, not directly over it. Pour solutions slowly to prevent splashing.

LINK TO LEARNING

As with all aspects of a sterile field pouring sterile solutions (https://Openstax.org/r/77poursterile) should be done following appropriate technique.

10.4 Infection Control and Patient Safety

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how the nurse can promote patient safety through infection control
- Recognize important principles when dealing with multidrug-resistant organisms
- Verbalize steps the nurse can take to prevent occupational exposure

Healthcare organizations are required to meet quality and safety needs for patients, staff, and visitors. An organization's stated commitment to a culture of patient safety can directly enhance infection prevention. The goal of infection prevention is to decrease the risk of infection to patients and healthcare personnel, identify and correct problems that are recognized as deterrents to infection prevention, minimize risks associated with procedures, and maintain compliance with hospital and governmental policies associated with infection prevention. The CDC has recognized the urgent issue of microorganisms that are resistant to drugs and the immediate need for intervention. Furthermore, the American Nurses Association promotes safeguarding antibiotics and the integration of a comprehensive approach to preventing inappropriate use.

Maintaining Patient Safety through Infection-Control Measures

The role of nursing in patient safety and infection prevention is significant. Nurses provide care at the bedside and have the direct ability to impact care and influence positive patient outcomes by helping to identify and prevent the spread of infectious agents. The interventions implemented by a nurse have an integral role in infection prevention. Nurses are part of the team responsible for executing appropriate isolation protocols, modeling infection-control measures, monitoring others for safe practice, identifying barriers to appropriate practice, and educating patients and other interdisciplinary team members as needed. Specific protocols for isolation and infection control will depend on several factors including mode of transmission, environmental circumstances, and available resources.

Standard Precautions: Tier 1

The first tier of precautions to protect healthcare staff and patients from infection are **standard precaution**s. These precautions apply to all patients, regardless of their diagnosis or presumed infection status. The components of standardized precautions include hand hygiene, respiratory hygiene, cleaning and disinfecting, personal protective equipment, safe injection practices, needlestick and sharps injury prevention, and waste disposal.

Transmission-Based Precautions: Tier 2

In situations where standard precautions are not adequate to prevent infection transmission, **transmission-based precautions**. These types of precautions are specific to infections and should be implemented immediately following patient presentation of signs and symptoms specific to certain infections. These precautions fall into the categories of airborne, droplet, and contact. Transport for patients who are under transmission-based precautions should be limited and only done when essential.

PATIENT CONVERSATIONS

Mental Health Needs for Patients on Isolation Precautions

Scenario: The nurse is entering a negative pressure airborne isolation room. The patient has a diagnosis of pneumonia and has tested positive for COVID-19. The nurse recognizes that the patient breakfast tray is sitting on the bedside table, uneaten.

Nurse: Hi, Mr. Garces. How are you feeling? Were you not hungry this morning?

Patient: (not looking at the nurse) I was . . .

Nurse: It there something wrong? Are you feeling nauseous?

Patient: No. I was hungry, but when my breakfast tray got here, it was very cold. It must have sat outside the door for a while before the tech brought it in. I feel like everyone forgets about me since I'm stuck in this room.

Nurse: I'm so sorry to hear that happened. I will call down to dietary right now to get a new hot tray sent up. I

understand being sick and in an isolation room can be difficult. Do you want to talk about how you are feeling?

Patient: It's just really lonely in here. I don't want my family to come visit me and get sick. But I miss talking to them.

Nurse: I see you have your cell phone on the nightstand. Have you been able to call them?

Patient: No, I forgot my phone charger at home, and the battery ran out days ago.

Nurse: We have an extra charger at the nurse's station I can bring in. It is very important to be able to stay in contact with loved ones and have someone to talk to. Technology has made that a lot easier these days.

Patient: That would be great and mean a lot to me. Thank you.

Airborne Precautions

When a patient is known or suspected to be infected with pathogens that are transmitted through droplet nuclei, **airborne precautions** should be used. Patients on airborne precautions, such as those being treated for chicken pox or measles, should be placed in negative pressure rooms. If a negative pressure room is unavailable, the patient should be masked and placed in a private room with the door closed. The personal protective equipment (PPE) for airborne isolation includes the use of a fit-tested NIOSH-approved N95 or higher-level respirator. If transport outside of the room is necessary, patients must wear an N95 mask. These precautions prevent the pathogen from gaining access to the hospital's ventilation and possibly infecting other patients.

Droplet Precautions

The use of **droplet precaution**s are implemented when patients are known or suspected to be infected with pathogens transmitted by respiratory droplets from coughing, sneezing, and talking. Patients in acute care should be placed in a single patient space. The PPE needed when treating patients in droplet isolation includes donning a mask upon entering a room and discarding it before exiting the room. If transport outside of the room is necessary, patients must wear a surgical mask.

Contact Precautions

The use of **contact precautions** are indicated for patients who have known or suspected infections that can be transmitted through direct skin-to-skin contact or indirect contact with environmental surfaces or equipment. Patients in acute care should be placed in a single patient space. The PPE needed when treating patients in contact isolation includes gloves and an isolation gown whenever touching the patient, discarding them before exiting the room. Disposable or dedicated patient equipment should be used for the patient. When it is unavoidable to utilize common use equipment, ensure that it has been properly cleaned and disinfected before use on another patient. (Figure 10.11) provides a quick guide comparing contact, droplet, and airborne precautions.

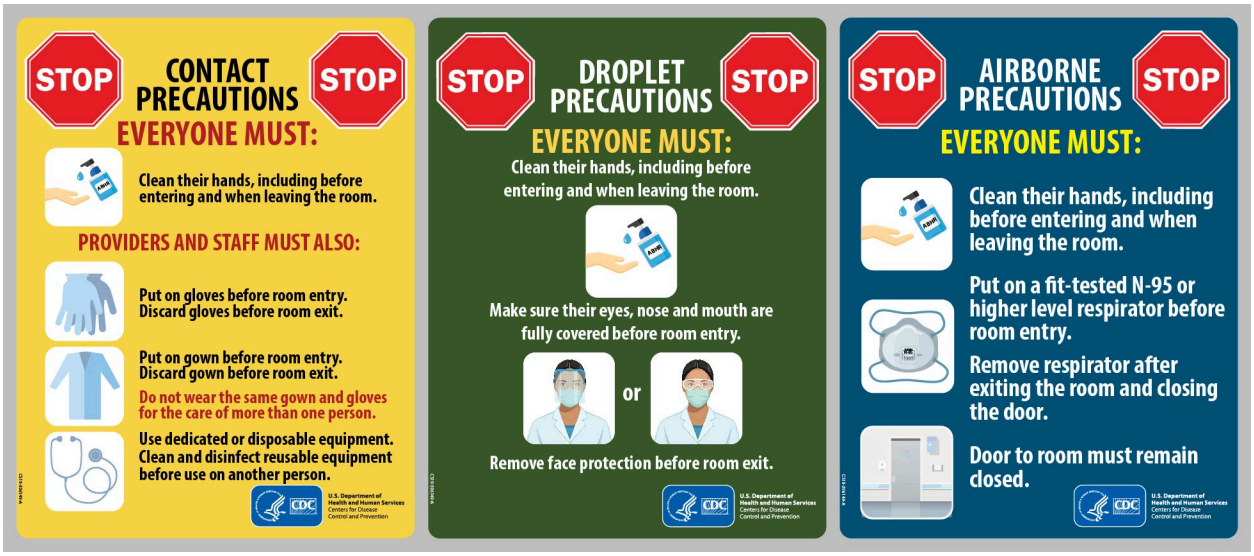

FIGURE 10.11 Understanding the aspect of (a) contact, (b) droplet, and (c) airborne precautions is vital for nurses to provide safe and effective care. (credit: modification of "Contact Precautions," "Droplet Precautions," and "Airborne Precautions" by Centers for Disease

Control and Prevention, Public Domain)

Dealing with Multidrug-Resistant Organisms

The impact of HAIs extends past the individual patient level. At the community level, it has been linked to the development of multidrug-resistant infections. In other words, many HAIs are caused by **multidrug-resistant organisms** (MDROs), which are bacteria that have become resistant to certain antibiotics, so much so that these antibiotics can no longer be used to control or kill the bacteria.

Examples of MDROs include *Clostridioides difficile*, methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE), and multiresistant gram-negative bacilli. HAIs that are caused by antibiotic-resistant bacteria are of particular concern, because they are typically difficult to treat and pose a significantly higher risk for severe illness and complications.

LIFE-STAGE CONTEXT

Susceptibility to Infection

The overall misuse and overuse of antibiotics has created a risk of MDROs to all populations, yet older adults have increased risk. Older adults tend to spend more time in hospitals and/or long-term care facilities with more chronic conditions, which increases exposure to different pathogens. Furthermore, age-related physiologic changes decrease immune system efficiency, thus increasing vulnerability to such infections.

UNFOLDING CASE STUDY

Unfolding Case Study #2: Part 7

Refer back to Unfolding Case Study #2: Part 5 for a review on the patient data.

Diagnostic Test Results	Sputum culture positive for methicillin-resistant *Staphylococcus aureus* (MRSA)
Provider's Orders	**2230: New Orders** Infectious disease consult. Titrate supplemental oxygen to maintain saturation > 92 percent. Continue droplet precautions.

5. Take action: The nurse is preparing to enter the patient's room. What personal protective equipment (PPE) is appropriate?
6. Evaluate outcomes: What findings would indicate that the patient's condition is improving?

Nursing Advocacy for Patient Safety

Nurses in all disciplines have the responsibility to ensure patients are receiving the safest care. Health care today is more complex than ever, and patients have more complex needs and conditions. Progress in treatments means more extensive intervention, prevention, monitoring, and care. By advocating for wellness and safety for patients, nurses can contribute to high-standard working environments with improved regulations and patient-centered policies. Safer healthcare environments lead to positive patient outcomes. Education is another consideration in the role of an advocate. Nurses often are the ones educating patients and/or their families on specific care needs, as well as how to navigate the healthcare system as a whole. Adjusting for specific needs and learning styles of the patient/family is critical to provide effective education. Nursing advocacy demonstrates an increased level of investment in safety by taking the extra time to meet the needs of the patients.

REAL RN STORIES

Advocating for Proper PPE Use

Nurse: Shiela, BSN
Clinical setting: Medical oncology unit
Years in practice: 15
Facility location: Buffalo, New York

Five years ago, I began working as the charge nurse on a medical oncology unit. I'm very involved in the care of all the patients on the unit and attend rounds daily. I provide a listening ear and discuss with patients how their treatment is going. One day during my rounds, I had a patient's daughter voice several concerns.

This particular patient was on contact isolation, and healthcare workers were required to don PPE before entering the room. The patient's daughter stated that several nurses, nursing assistants, and therapists had entered the room without wearing any PPE. I acknowledged the daughter's concerns and promised to investigate what was happening.

After discussions with the staff, I learned that the issue was multifaceted. Several of the assistants did not understand what PPE was required, so I provided proper education. Other staff members stated that the floor was frequently out of PPE and that they did not have time to search the hospital. I assured the staff that I would speak to the supply chain to ensure that proper PPE was always available; then I reeducated them not to enter isolation rooms without it. I was able to advocate for the patient's safety by providing needed education for the staff. The issue also brought about an opportunity for me to advocate for staff safety by guaranteeing that the necessary items were available to provide safe care.

Preventing Occupational Exposure

It is vital that healthcare workers are able to recognize and reduce risks associated with exposure to blood, bodily fluids, and biologic hazards. The recent emergence of the previously unknown pathogen COVID-19 highlights the critical need for safety in health care and the increasing importance for protecting against pathogens.

Latex Sensitivity

Latex products are made from a natural rubber, and sensitivity can develop if there is repeated exposure. Individuals in health care wear gloves at a much higher frequency than the general public; the increased exposure places them at a higher risk for developing sensitivity, which could lead to allergy. If a nurse has indicated a sensitivity to latex, alternative products should be used, such as latex-free gloves made of neoprene or vinyl. In addition, such nurses should avoid areas where latex is likely to be inhaled, such as an area of high prevalence in the use of latex gloves. Some symptoms of a latex allergy include itching, rash/hives, sneezing, watery/itchy eyes, skin redness, cough, wheezing, and difficulty breathing. For patients with a latex allergy, prevention is key for good outcomes. All clinicians involved in caring for the patient should be a part of the prevention plan to avoid incidental exposure.

Reducing Risk Exposure

Identifying why and how exposures occur is a critical component to the success of a healthcare prevention program. All healthcare employees must receive proper training and education regarding how to reduce their risk for exposure. Emphasis must be placed on following proper hand hygiene, and proper personal protective equipment (PPE) protocols can greatly reduce risk of exposure. Compliance must also be recognized when removing PPE to prevent contamination. PPE can not only protect the patient but also the nurse providing care to the patient who may be contagious or pose a risk to specific populations. Reducing exposure to toxic medications, such as chemotherapy, and following proper protocols for disposal of medications are important for nurses to understand. Following safety procedures and protocols along with using clinical judgment is the best way for nurses to minimize their risk.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Disposing Sharps Safely

Definition: Quality and Safety Education for Nurses (QSEN) competencies were designed to emphasize key elements that pre-licensure nursing students should be competent in at the time of graduation. Safety is defined as minimizing risk of harm to patients through both systems effectiveness and individual performance.

Clinical scenario: Nurses should have the following knowledge and skills regarding disposal of sharps:

- Do not throw a needle or sharp in the trash. Dispose of it in a marked sharps container immediately after use (Figure 10.12).
- Never recap a used needle; lay it down or remove a used needle from a disposable syringe.
- When disposing of a needle in the sharps container, never use force or reach into the container.
- If a needlestick occurs, immediately report the incident, and follow your facility's guidelines and protocols.

FIGURE 10.12 Sharps should always be placed in a marked sharps container after use. (credit: "Sharps Container.jpg" by "The finished Tattoo"/Wikimedia Commons, CC BY 2.5)

Improving Sharps Safety

Sharp injuries are among the top occupational threats to nurses and healthcare workers. Needlestick injuries can occur at any point during the use, disassembling, or disposing of needles. Sharp injuries put workers at risk for blood-borne diseases, such as hepatitis B, hepatitis C, and HIV. Needles that are not disposed of properly can cause injury to any individual who encounters them unexpectedly. The term **sharps** includes needles as well as other objects, such as lancets, razor blades, scissors, clamps, pins, staples, and glass items.

The Needlestick Safety and Prevention Act (2000) made needle safety a top priority in hospitals. It is critical, however, that all healthcare workers are aware of and alert to the dangers associated with sharps. Needlestick safety should focus on education and prevention. All healthcare workers should receive hands-on employee training that focuses on the use, handling, and disposal of all sharps. All sharps do not have the same safety mechanisms. Therefore, hands-on training with the sharps currently being used or those that will be adopted must be a priority to ensure nurse and patient safety. Policies and procedures should be implemented regarding safe disposal of sharps and should include routine evaluation of sharps container access. All containers should be fitted with a tight lid and placed at shoulder height with safety features that reduce exposure to fingers and hands.

Safety Devices

It is recommended that healthcare facilities use needleless systems whenever possible. Needleless systems use adaptors and Luer-locks in conjunction with IV tubing and vials, allowing access through a valve system. When the

use of a needleless system is not feasible, safety devices should be put into place. Safety-engineered sharps are devices with a built-in safety feature or mechanism that effectively reduces the risk of needlesticks. Examples of safety-engineered sharps include syringes with guards or sliding sheaths (Figure 10.13), retractable needle systems, and shielded or retracting scalpels.

FIGURE 10.13 Many types of safety mechanisms exist for sharp instruments in health care, including needles with guards. (credit: "231018-F-RI324-1019," by Airman Cade Ellis/Moody Air Force Base, Public Domain)

Summary

10.1 Infection Cycle

By understanding the conditions that foster the spread of infection, nurses can implement evidence-based interventions to break the cycle and stop the chain of infection. Nurses must have a thorough understanding of how to protect themselves and their patients from exposure to harmful pathogens. Nurses should gather the signs and symptoms of infections through examination, patient history, and healthcare records. The infection cycle has six specific phases that all must be completed in order for an infection to matriculate. These six pieces are causative agent, reservoir, portal of exit, mode of transmission, portal of entry, and susceptible host. Breaking this chain at any point can stop the spread of infection. Understanding the various types of immune responses will help nurses to identify infection and initiate treatment. The human body's immune system provides a mechanism for staying healthy through protection against harmful pathogens. An immune response can be classified as either nonspecific, meaning it targets pathogens in a nonspecific manner, or specific, meaning it allows for a high level of adaption and effectiveness against a specific pathogen.

10.2 Asepsis and PPE

Comprehensive knowledge related to infection prevention and control is essential for nurses to protect themselves and patients from the transmission of infection. The two types of asepsis are medical and surgical. Medical asepsis is often referred to as clean technique, while surgical asepsis is often referred to as sterile technique. Understanding the use of personal protective equipment and knowing when to use which type of equipment are key components of infection prevention. By incorporating thorough assessment and applying prevention strategies, nurses are empowered to reduce transmission of pathogens within healthcare environments and the community. One major risk factor to hospital admittance is healthcare-associated infections. The most common HAIs are associated with invasive devices: catheter-associated urinary tract infections (CAUTIs), central line–associated blood stream infections (CLABSIs), ventilator-associated pneumonia (VAP), and surgical site infections (SSIs). These infections often have intensive treatment and compound on the original reason for hospitalization, leading to increased healing time for patients.

10.3 Sterile Technique

Environmental factors play a large role in infection prevention and transmission. Environmental cleaning is a fundamental principle of infection prevention because contaminated equipment and surfaces play a major role in transmission. Improving cleaning practices and increasing compliance reduces the exposure to pathogens and, therefore, reduces incidences of infection. To minimize the risk of transmission of infection, there are three levels of cleaning of which nurses should be knowledgeable: sanitization, disinfection, and sterilization. Moreover, it is critical that nurses understand and utilize the principles of the skill of sterile technique as an essential element of patient safety.

10.4 Infection Control and Patient Safety

Nurses play a critically important role in ensuring patient safety while providing care directly to patients. When standard precautions are not enough to protect patients and healthcare workers against pathogens, nurses must use transmission-based precautions, which provide additional support for infection prevention. Nurses can advocate for themselves, patients, and families to ensure that agencies follow proper policies and procedures to promote the highest patient outcomes. All healthcare employees must receive proper training and education regarding how to reduce their risk for exposure. This may include exposure to certain substances as well as sharps safety. Emphasis must be placed on following proper hand hygiene, and proper personal protective equipment (PPE) protocols can greatly reduce risk of exposure. Special considerations should be made regarding the use of antibiotics to not increase the incidence of MDROs. Patient education on this topic helps to prevent infection with these resistant bacterial agents.

Key Terms

active immunity immunity that results from the production of antibodies to help protect the body from a pathogen that has entered the body

airborne precaution a practice indicated for patients known or suspected to be infected with pathogens that are

transmitted through droplet nuclei

airborne transmission the spread of pathogens that are carried by dust or the nuclei of an evaporated droplet and remain suspended in the air

antibody (also, immunoglobulin) a protective protein produced by the immune system to help the body fight invaders

antigen a toxin or foreign substance introduced to the body that elicits an immune response

asepsis the state of being free from disease-causing contaminants

chain of infection the six stages of infection that must be present for the transmission of a pathogen from one place or person to another

contact precaution a practice implemented for patients who have known or suspected infections that can be transmitted through direct skin-to-skin contact or indirect contact with environmental surfaces or equipment

convalescent period the time when recovery and healing begin

direct transmission the spread of a pathogen that is transmitted directly from an infected person

disinfection the process of removing microorganisms and disease-causing pathogens from inanimate objects

droplet precaution a practice implemented when patients are known or suspected to be infected with pathogens transmitted by respiratory droplets from coughing, sneezing, and talking

droplet transmission the spread of a pathogen that travels through a spray of water droplets that are released when an infected person coughs, sneezes, or talks

fever a rise in core body temperature

illness period the third stage of infection, which starts when a person experiences the specific signs and symptoms of a disease

incubation period the initial stage of infection when a pathogen successfully enters into a new host

indirect transmission the spread of a pathogen to a new host through an intermediary, such as the air, food, water, animals, or objects

infection control the discipline of stopping or preventing the spread of infectious agents

inflammatory response one of the first responses when a pathogen breaches the nonspecific innate immune system; it aids in the recruitment of cellular defenses to remove pathogens

medical asepsis techniques and procedures used to decrease the potential for the spread of microorganisms and infection

medical isolation gown a garment worn in the healthcare setting as a broad barrier against blood or bodily fluids

microorganism a single-celled organism that is microscopic in size and too small to be seen by the naked eye

multidrug-resistant organisms a bacterium that has become resistant to certain antibiotics

N95 respirator mask a tight-fitting mask that protects the wearer from very small particles that float in the air

normal flora microorganisms that can live on another living organism or inanimate object without causing diseases or complications

passive immunity the result of antibodies being passed from one person to another

pathogen any type of microorganism that causes disease to its host

personal protective equipment (PPE) a means of barrier protection for eyes, nose, mouth, and skin from exposure to blood and other potentially infectious bodily fluids and materials

portal of entry the site at which a pathogen enters the susceptible host

portal of exit the path by which the pathogen leaves the reservoir

prodromal period the second stage of infection, which begins at the initial appearance of mild or vague symptoms

reservoir the habitat or source of the pathogen that provides a place for survival and growth

sanitization the removal of visible soil from objects and materials

sepsis the body's extreme response to a widespread infection

sharps needles and other objects, such as lancets, razor blades, scissors, clamps, pins, staples, and glass items

standard precaution the first tier of precautions to protect healthcare staff and patients

sterile gloves a glove that is free from microorganisms and individually packaged as a pair to remain free of pathogens

sterile technique a set of specific practices and procedures employed to maintain sterility of the sterile field (e.g., equipment, instruments, drapes)

sterilization a procedure that eliminates all microorganisms in or on an object

surgical asepsis the absence of all microorganisms in any type of invasive procedure, achieved through rigorous

sterilization processes and meticulously maintained through sterile technique

surgical gown a garment worn by healthcare personnel during a surgical procedure to protect both the patient and the personnel from transmission of pathogens

surgical mask a mask that prevents transmission of large particle droplet matter generated through coughing or splash-generating procedures

susceptible host the organism that is susceptible to or at risk for infection

transmission the method that a pathogen uses to spread from one host to another

transmission-based precaution a practice implemented in situations where standard precautions are not adequate to prevent infection transmission

vector transmission the spread of a pathogen that occurs when blood-feeding arthropods infect animals or humans

zoonosis an infectious disease that can naturally transmit from animal to human

Assessments

Review Questions

1. A patient being seen in urgent care is complaining of vague and generalized symptoms. What stage of the infection process is the patient in?
   a. incubation
   b. prodromal
   c. illness
   d. convalescent

2. A patient has been experiencing a cough and sore throat for several days. While at work, the patient sneezed several times while sitting close to a coworker. Two days later, the coworker developed the same symptoms. What mode of microbial transmission took place here?
   a. direct contact
   b. indirect contact
   c. droplet transmission
   d. vector transfer

3. After receiving the varicella vaccination, a patient states that they now have immunity against this virus. What type of immunity does the patient have?
   a. natural active immunity
   b. natural passive immunity
   c. artificial passive immunity
   d. artificial active immunity

4. A patient presents to urgent care after cutting themselves with a knife while eating an apple. The patient became concerned after noticing redness and warmth at the injury site. What education can the nurse provide related to these findings?
   a. An artificial passive vaccine should be administered to prevent further damage.
   b. The patient should expect the cut to turn black before healing begins.
   c. Redness and warmth are expected assessment findings.
   d. The patient may be allergic to apples and will need additional allergy testing.

5. What does the CDC recommend as the length of time someone take to perform hand hygiene using an alcohol-based hand sanitizer?
   a. ten to fifteen seconds
   b. twenty to thirty seconds
   c. forty to fifty seconds
   d. fifty to sixty seconds

6. A nurse is preparing to enter the room of a patient on droplet precautions. What is the correct order for

application of PPE?

a. handwashing, gown, mask, eye protection, gloves
b. handwashing, mask, gloves, gown, eye protection
c. mask, handwashing, gown, eye protection, gloves
d. mask, handwashing, gloves, gown, eye protection

7. A nurse is setting up a sterile field to insert an indwelling catheter into an older patient who has dementia. During the setup, the patient accidentally drops their leg inside the sterile field. What is the appropriate nursing action?

a. Call for another nurse to hold the patient's leg and continue setup.
b. Remove the portion of the field that was contaminated and continue setup.
c. Continue setup because no objects were touched by the patient.
d. Discard the supplies and prepare a new sterile field with another nurse assisting in holding the patient.

8. A nurse is preparing a sterile field to complete a sterile wound dressing change. What action would indicate a break in the sterile field?

a. remaining 1 ft (30 cm) away from nonsterile areas
b. placing additional sterile items in the sterile field
c. not utilizing the 1 in (2.5 cm) border of the sterile field
d. reaching 1 ft (30 cm) over the sterile field

9. The nurse is admitting a patient who has tuberculosis to the hospital. What tier of precautions must the nurse institute when caring for this patient?

a. droplet contact
b. airborne contact
c. direct contact
d. indirect contact

10. What is the first step in protocol for a nurse who has been stuck by a needle?

a. Report to the emergency department.
b. Place the needle in a biohazard bag.
c. Call an infectious disease doctor.
d. Wash the area thoroughly with soap and water.

11. The nurse is speaking with a patient about their new diagnosis of *Clostridioides difficile*, highlighting that his infection is no longer impacted by antibiotics. How is this type of infection categorized?

a. hospital-specific organism
b. multifactor-resistant infection
c. hospital-created infection
d. multidrug-resistant organism

Check Your Understanding Questions

1. Discuss the chain of infection and how the chain can be broken.

2. How will the treatment of a bacterial infection differ from the treatment of a viral infection?

3. Why is it important for a healthcare worker to know what type of precautions a patient is on before donning PPE?

4. When opening a sterile package, which part of the package is considered nonsterile?

5. What precautions should be implemented for a patient on contact precautions?

6. What steps can a nurse take to prevent needlesticks?

Reflection Questions

1. A patient in an outpatient clinic states that they have not been feeling well since yesterday and their temperature has been 100.2°F (37.9°C) since earlier that morning. The patient asks the nurse if they should take Tylenol for the fever. What education should the nurse provide to the patient about infection and fever?
2. Two patients present to the outpatient clinic with different complaints. Patient A has a 100.2°F (37.9°C) temperature since early this morning and reports that he got the influenza vaccine yesterday. Patient B has a 98.5°F (36.9°C) degree temperature and complains that his right arm is swollen and red near an elevated area "that looks like a little hill." Explain the differences in the patient's symptoms based on the principles of immunity and the inflammatory response.
3. Discuss the role nurses play in the prevention of healthcare-associated infections.
4. A nurse observes an unlicensed healthcare worker preparing to enter a contact precaution room. They observe the worker donning gloves first, then the isolation gown. What education can the nurse provide the worker about donning PPE?
5. Discuss the principles of sterile technique and how a nurse can maintain sterility.
6. Why are multidrug-resistant organisms a threat to patient safety?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #2: Part 5.
   What is the likely method of transmission of the infection?
2. Refer to Unfolding Case Study #2: Part 6.
   What factors may have increased the patient's risk for developing hospital-acquired pneumonia?
3. Refer to Unfolding Case Study #2: Part 7.
   What are some strategies the nurse could use to decrease the risk of hospital-acquired infections?

What Should the Nurse Do?

1. The nurse is assigned a patient who is being treated for RSV and is in droplet precautions. Thinking about the infection chain, the nurse wants to impede the spread of RSV by interrupting this chain with their nurse care. What are two things the nurse can do to interrupt this chain? What step in the chain are they interrupting with each action?
2. The nurse is caring for a patient who is infected with methicillin-resistant *Staphylococcus aureus* (MRSA). The patient is angry that the nurse is always wearing gloves and a gown and asks, "Do you think I'm dirty?" How should the nurse respond?
3. The nurse is speaking with a group of students regarding cleaning protocols on the unit. One of the students asks, "What are examples of items in which we would use disinfectants?" How should the nurse respond?

A nursing student has been assigned to a 75-year-old female patient who has a diagnosis of *Clostridioides difficile*. The patient is incontinent and needs assistance with bathing and hygiene. The charge nurse has requested the nursing student to assist with providing care for the patient.

4. What infection prevention and control precautions should be incorporated into the patient's care to decrease the risk of spreading infection?
5. What education can the student nurse provide to the patient and family?
6. How can being on isolation precautions impact the patient's mental health?
7. A new graduate nurse is speaking with an experienced nurse regarding their concern about their known sensitivity to latex. The new graduate nurse is worried about using latex-containing products and fears they will not be able to complete their job duties. How should the experienced nurse respond?

Competency-Based Assessments

1. Map out the infection chain, labeling each step. Then, identify three ways that this chain can be broken.

2. Create a poster comparing and contrasting medical and surgical asepsis. Share with a peer.
3. Use the internet to find a demonstration of sterile technique for a medical procedure. If possible, replicate this demonstration. If resources are not available, vocalize each step as you simulate the experience.
4. Develop a ten-minute presentation discussing how the nurse can promote patient safety through infection control.

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CHAPTER 11
Medication Administration

FIGURE 11.1 Medication administration requires competent and efficient nursing skills. (credit: modification of "Medications" by "freestocks.org"/Flickr, Public Domain)

CHAPTER OUTLINE

11.1 Medication Orders
11.2 Fundamental Principles of Medication Administration
11.3 The Medication Administration Process

INTRODUCTION Medication administration is a key function of the nurse's role. Given the significant portion of time nurses spend on this task, accuracy and adherence to best practices are paramount. Not only must the nurse administer the right dose of medication to the right patient, via the right route, at the right time, but the nurse must also ensure the appropriate medication administration procedures are in place. As such, nursing students must demonstrate competency and safety regarding medication administration before being able to do so for patients.

Medication orders serve as the foundation for administering treatments. A comprehensive understanding of the types and components of medication orders enables nurses to interpret and execute these directives accurately. The principles of medication administration encompass the core guidelines and best practices that ensure safe and effective delivery of medications. Nurses must be well-versed in these principles to perform their duties with precision and care. The process of medication administration involves multiple steps and checkpoints designed to safeguard patient health. From verifying patient identity to monitoring for adverse reactions, each stage requires meticulous attention to detail.

Medication errors are preventable, and nurses are at the forefront of implementing safety precautions to avoid them. Ensuring medication safety is crucial for individual patient outcomes and for maintaining overall healthcare quality and efficiency. Effective medication administration reduces the incidence of adverse reactions, enhances

patient trust, and supports the seamless functioning of healthcare systems. By mastering the principles and processes outlined in this chapter, nurses can engage in safe medication administration practices, thereby significantly influencing positive patient outcomes and upholding the integrity of nursing practice.

11.1 Medication Orders

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe types of medication orders
- Identify components of a medication order

Medication orders are a fundamental aspect of nursing practice, serving as the directives for the safe and effective administration of medications to patients. A thorough understanding of medication orders, including the various types and their components, is crucial for nurses to minimize the risk of medication errors, ensure optimal patient care, and enhance therapeutic outcomes. This section will explore the complexities of medication orders, equipping nurses with the basic knowledge required to accurately interpret, verify, and execute these orders accurately. By mastering this aspect of nursing practice, nurses play a pivotal role in ensuring patient safety and delivering high-quality care.

Types of Medication Orders

A **medication order** is a prescription ordered within clinical practice. When administering medications, it is important for the nurse to be aware of the various types of medication orders that may be written. Common types of medication orders include routine orders, one-time orders, standing orders, STAT orders (to be completed now), PRN (as needed) orders, and titration orders. Each order type has indications for nursing practice. Identifying the order type helps the nurse to prepare for medication administration by knowing which medications to administer, when to administer them, as well as specific indications for administration.

- A **routine order** is a medication order that is continuously followed until canceled. For example, "Aspirin 81 mg PO Q Day" is a routine order. For the order to be canceled, the provider would need to discontinue the order.
- A **one-time order** is an order for a medication to be administered just one time. An example of a one-time order is "Cefazolin (Ancef) 2 g IV × 1 dose before surgery."
- A **standing order** is a standardized order that may be implemented under certain circumstances. Standing orders are written to address protocols in which the nurse can intervene in a timely manner without having to wait on the provider to write orders, or there are general guidelines for treating a certain condition. For example, surgical procedures often utilize standing orders that allow the nurse to administer medications for pain, nausea or vomiting, constipation, and venous thrombosis prophylaxis.
- A **STAT order** is a one-time order that is administered as urgently as possible. An example of a STAT order may be to administer "Lorazepam (Ativan) 1 mg IV STAT" when the patient is having a seizure.
- A **PRN order** is a medication order to be administered as needed. PRN medications are commonly ordered for symptoms such as pain, nausea or vomiting, itching, sleep, cough, or fever greater than 101°F (38.3°C). An example of a PRN order is "Diphenhydramine (Benadryl) 25 mg PO Q4 hours PRN itching." It is important to note that a PRN medication may only be administered for the ordered indication. For instance, an order that reads "Acetaminophen 500 mg PO PRN headache" cannot be administered for mild arthritic pain.
- A **titration order** is an order in which the medication dose is either progressively increased or decreased by the nurse in response to the patient's status. Titration orders are typically used for patients in critical care as defined by agency policy. An example of a titration order is "Norepinephrine 2–12 mcg/min, start at 2 mcg/min and titrate upward by 1 mcg/min every five minutes with continual blood pressure monitoring until systolic blood pressure > 90 mm Hg."

Components of a Medication Order

According to the Centers for Medicare and Medicaid Services (2014), all medication orders must contain the following:

- patient's full name and date of birth

- name of the drug
- drug dose, route, and frequency
- date and time medication order was written
- name and signature of the prescriber

The following additional requirements must also be included when applicable:

- weight of the patient if dose calculation is based on weight (kilograms for children and adults, grams for newborns)
- dose calculation requirements
- exact strength or concentration of medication
- specific quantity or duration to be administered
- specific instructions for use
- reason for use if medication is ordered PRN

An example of a complete medication order is shown in Figure 11.2.

Patient: Rose Sanchez **Age:** 40	**Date of Birth:** 04/18/1983 **Room:** 366M	**Medical Record Number:** 008222014

Date/Time	**Medication**	**Prescriber**
02/10/2023 Time: 07:54 AM	Enoxaparin (Lovenox) 30 mg SQ Q12 hours	Grace Chen, NP
	Acetaminophen (Tylenol) 500 mg PO Q4 hours PRN mild pain	Grace Chen, NP
	Oxycodone/acetaminophen (Percocet) 5 mg/325 mg PO Q6 hours PRN moderate pain	Grace Chen, NP
02/10/2023 Time: 10:21 AM	Promethazine (Phenergan) 12.5 mg IV Q6 hours PRN nausea and vomiting	Grace Chen, NP

FIGURE 11.2 A complete medication order includes the patient's information as well as the date, medication and dosage, and prescriber's name. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

When reviewing a medication order, the nurse must ensure all essential components are included in the prescription before administering the medication. If any component of the medication order is missing, the nurse must contact the prescribing provider to clarify and correct the order.

Drug Name

Drugs are provided with three categories of names: (1) a chemical name, (2) a generic name, and (3) a brand name (Table 11.1). The chemical name provides a detailed description of the drug's molecular structure and chemical composition. This name is often complex and used primarily by chemists and researchers. The generic name, which is the standard name assigned by the United States Adopted Names (USAN) Council, is universally accepted and provides a simpler, more concise designation for the drug (Merck & Co., 2023). It is typically used by healthcare professionals and is preferred in clinical settings to reduce confusion. The brand name, also known as the trade name, is the proprietary name given by the pharmaceutical company that markets the drug. This name is usually easier to remember and is used in advertising and marketing to the public. Although a single drug may have one chemical and generic name, it can be sold under multiple brand names by different manufacturers.

Chemical Name	Generic Name	Brand Name
N-acetyl-para-aminophenol	Acetaminophen	Tylenol
Dihydroxy monocarboxylic acid	Atorvastatin	Lipitor
3-(α-acetonylbenzyl)-4-hydroxycoumarin sodium salt	Warfarin	Coumadin

TABLE 11.1 Examples of Drug Chemical Names, Generic Names, and Brand Names

The drug name must be clearly specified to prevent errors in medication administration. The name should be written in full and should not be abbreviated in order to avoid confusion with other medications that may have similar abbreviations. Both the generic name and brand name of the drug are often included to ensure clarity, with the generic name being preferred to reduce the risk of errors due to similar-sounding brand names. It is essential for the nurse to be familiar with both names to accurately verify and administer the medication. In cases where the drug name is unclear or misspelled, the nurse must contact the prescribing provider for clarification to ensure patient safety.

Dose

The dosage of the drug refers to how much of a drug a patient should receive. Drug dosages may be written using three systems of measurements: metric system, household, or apothecary. The **metric system** is the most widely used international system of measurement and is considered to be the most accurate of the three systems of measurement. It is a decimal-based system based on units of ten. The **household system** utilizes everyday household items, such as measuring cups and tablespoons, to serve as measuring devices. Due to variations in the size of household items, it is considered to be the least accurate system of measurement. The **apothecary system** utilizes fractions as a part of the whole to measure weights and volumes.

According to the Institute for Safe Medication Practices (ISMP, 2021), household and apothecary measurements should only be used to provide directions for mixing dry ingredients to prepare a topical product. In all other circumstances, the metric system should be used. Common units of measurement for drug doses include the following:

- gram (g)
- kilogram (kg)
- liter (L)
- microgram (mcg)
- milligram (mg)
- milliliter (mL)
- units

Special care should be given to orders that contain a zero. Drug dosages should not be written with trailing zeros. For example, 1 milligram should be written as 1 mg instead of 1.0 mg to reduce the risk of the dosage being mistaken for 10 mg. However, if the dose is less than one unit, a zero must be included before the decimal point, often called a leading zero. For example, half a milligram should be written as 0.5 mg instead of .5 mg to reduce the risk of the dosage being mistaken for 5 mg.

REAL RN STORIES

Ensuring Correct Dosage

Nurse: Joseph, BSN
Clinical setting: Cardiology unit
Years in practice: One month
Facility location: The inner city of a small metropolitan area in South Carolina

As a newly graduated nurse on the cardiology unit, I was still becoming familiar with the specific medication

protocols followed by the cardiologists. One busy afternoon, Dr. White approached me and informed me that Mr. Thompson, a patient with a history of atrial fibrillation, was experiencing an irregular heartbeat. Dr. White had just placed a new order for a stat dose of IV digoxin to stabilize Mr. Thompson's heart rate and asked me to administer it immediately.

I opened Mr. Thompson's chart and read the order: "Digoxin 0.25 mg IV STAT." I promptly sent the order to the pharmacy for processing and proceeded with the medication administration by overriding the automated medication dispensing machine to avoid any delay, given the urgency of Mr. Thompson's condition.

As I prepared to retrieve the medication, I noted that Digoxin was available in 0.125 mg vials. Believing the order called for 0.25 mg, I calculated that I needed two vials to meet the required dose. However, as I prepared the medication, I was interrupted by an alert from the dispensing machine, warning that the amount requested was unusually high for this drug.

Feeling uncertain, I decided to consult with my charge nurse before proceeding. We rechecked the chart together and discovered a crucial detail that I had initially overlooked. The actual order read: "Digoxin 0.125 mg IV STAT." The way the order was written, the ".125" had been mistakenly read as ".25" due to poor handwriting and a misalignment on the chart.

Realizing my error, I adjusted the medication dosage to the correct 0.125 mg. Thanks to the alert from the automated system and the verification with my charge nurse, we avoided administering double the intended dose. This incident reminded me of the importance of carefully reviewing and verifying medication orders, especially in emergent situations where overriding the safety mechanisms in the medication dispensing machine may be warranted.

Route

The route of the drug is the method by which the drug should be administered. Commonly used abbreviations for medication routes can be found in Table 11.2.

Abbreviation	Route
AD	Right ear
AS	Left ear
AU	Each ear; both ears
BU or BUC	Buccal
EPI	Epidural
IA	Intra-arterial
IC	Intracardiac
ID	Intradermal
IM	Intramuscular
INH	Respiratory (inhalation)
IT	Intrathecal

TABLE 11.2 Abbreviations for Routes of Administration

Abbreviation	Route
IV	Intravenous
IVP	Intravenous push
IVPB	Intravenous piggyback
NAS	Nasal
NG	Nasogastric
NGT	Nasogastric tube
OD	Right eye
OS	Left eye
OU	Each eye; both eyes
PO	Per mouth
PR	Per rectum
SC or SQ	Subcutaneous
SL	Sublingual
TD	Transdermal
TOP	Topical
PV	Per vagina

TABLE 11.2 Abbreviations for Routes of Administration

A drug may only be administered via the ordered route. In the event the medication cannot be administered via the route ordered, the nurse must notify the provider. The nurse should document the reason for the route change and await further instructions from the provider to ensure patient safety and the effectiveness of the medication. If an alternative route is necessary, it must be clearly specified and approved by the provider before administration.

Frequency

The frequency of the drug refers to how often or how many times per day the medication should be administered. Examples of drug frequency include Q30 minutes (every thirty minutes), Q4 hours (every four hours), Q12 hours (every twelve hours), Q Day (daily), BID (twice daily), TID (three times daily), QID (four times daily), and QHS (at bedtime). If the frequency is denoted in terms of number of times per day, the frequency can be determined by dividing 24 hours per day by the number of times the drug should be administered. For example, a medication ordered twice daily should be administered every twelve hours (24 hours in a day/2 administrations = every 12 hours), and a medication ordered three times daily should be administered every eight hours (24 hours in a day/3 administrations = every 8 hours).

Date, Time, and Signature of Provider

For the medication order to be complete, it must include the date and time the order was written, along with the prescriber's signature (electronic or handwritten). Best practice is for the provider to enter the order; however, there

may be times when the provider is not able to do so, and a verbal order is required (Patient Safety Authority, 2006). When taking a verbal order, the nurse must restate the order back to the provider to ensure the message was received correctly. The nurse must immediately document the verbal order in the patient's chart, and the provider must review and sign the order according to the agency's policy. Nurses should be aware that both state and organizational policies will dictate required verbal order components. Be sure to follow the organization's policies.

11.2 Fundamental Principles of Medication Administration

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- List safety measures of medication administration
- Verbalize the rights of medication administration

Understanding the safety measures of medication administration and being able to verbalize the rights of medication administration are critical components of nursing practice with profound implications for patient care. These principles serve as fundamental safeguards to protect patients from medication errors and potential harm. It is imperative for nurses to grasp these concepts thoroughly, as medication errors can have severe consequences, including patient injury or even death. By adhering to established safety measures and rights of medication administration, nurses can mitigate risks, ensure accuracy, and promote optimal patient outcomes

Safety Measures for Medication Administration

Given the risk of medication errors, there are many safety measures that should be implemented when administering medications. These safety measures fall into four categories: ensuring correct identification of the patient, checking the medication order for errors, maintaining a safe environment, and monitoring for adverse reactions. Medication administration safety is a priority; therefore, these safety checks may be confirmed by the nurse, provider, and pharmacist. By using an interdisciplinary team approach, safety measures may be assessed at multiple checkpoints and by several professionals, thereby reducing the opportunity for medication errors to occur.

Several organizations are dedicated to supporting safety measures for medication administration. The Institute for Safe Medication Practices (ISMP), a nonprofit organization renowned for its efforts in preventing medication errors, has created lists of look-alike and sound-alike drugs, advocated for the use of tall man (uppercase) lettering to distinguish between similar drug names, published recommended abbreviations, compiled lists of high-alert medications, and implemented a medication error reporting program (ISMP, n.d.). The Joint Commission (TJC) evaluates and accredits healthcare organizations nationwide, setting practice standards and issuing safety alerts to address concerns. TJC takes proactive steps to enhance patient safety by setting national patient safety goals, issuing sentinel event alerts, and offering evidence-based practice recommendations. Some of these recommendations include a Do Not Use list of abbreviations and requiring accredited healthcare organizations to provide a written processes for managing high-alert and hazardous medications. Additionally, organizations such as the Centers for Disease Control and Prevention (CDC), Poison Control, the National Institutes of Health (NIH), and the Food and Drug Administration (FDA) play vital roles in promoting medication safety through various programs, research initiatives, and regulatory measures. Ensuring safe medication administration involves collaborative efforts across multiple organizations to establish and enforce evidence-based practices and policies.

LINK TO LEARNING

The Institute for Safe Medication Practices (ISMP) develops safe medication standards. Review the ISMP's current list of drug names with tall man lettering (https://openstax.org/r/77TallManLetter) that aims to reduce medication errors related to look-alike and sound-alike medications.

Patient Identification

According to TJC's National Patient Safety Goals, at least two patient identifiers are required to correctly identify the patient. The two most commonly used identifiers are full name and date of birth. The patient should be asked to state their name and date of birth, while the nurse confirms the stated identifiers on the patient armband and medication administration record (MAR). Other unique patient identifier options include medical record number,

phone number, social security number (if noted in medical record), address, or photo. If a patient is unable to verbalize their identity—for instance, they are unconscious—the nurse should verify the patient's identity using a photo ID. It is important to note that room number is not a unique identifier and should not be used to confirm the patient's identity. Although it may seem redundant, it is important to confirm the patient's identity every time medications are administered (The Joint Commission, 2022).

Verifying Order for Errors

The nurse must ensure all parts of the medication order are complete prior to administering medication. If any part of the medication order is missing, there are any questions about the order, or the writing is illegible, the nurse must contact the prescriber to clarify and correct the order. When verifying the medication order for errors, assessing patient allergies is a key safety consideration. If the patient has a documented allergy to the drug ordered, the nurse should provide notification of the allergy to the provider, who will consider alternative drugs and/or treatments.

With implementation of the electronic medical record, most medication orders are prescribed electronically. Using **computerized provider order entry (CPOE)**, a provider submits patient orders by electronic means, which has reduced the number of medication errors by offering technical safeguards, such as allergy alerts; drug-drug, drug-food, and drug-disease interaction checks; suggestions for safe medication dose ranges and intervals; evidence-based practice order sets; notice of incorrect transcription of handwritten orders; and hard stops to ensure the order is complete. Additionally, CPOE reduces the risk of erroneously transcribing handwritten medication orders.

Drug Indication

A drug indication refers to the use of the drug for a particular disease or condition. Drugs often have more than one indication. When a drug is used for an FDA-approved purpose, it is termed a "labeled" indication, whereas using it for an unapproved purpose is considered "off-label." To have a labeled indication, the drug must have been thoroughly researched and shown to be effective in treating the disease or condition. Drugs ordered for off-label indications must have demonstrated reasonable evidence to support effectiveness in treating the indication (Ogbru, n.d.). For example, megestrol acetate (Megace) is a progestin medication that has a labeled indication for treating advanced breast and endometrial cancer. Due to the side effect of increased hunger, even with small doses, megestrol was used off label as an appetite stimulant. Once researched and thoroughly studied, the medication is now labeled for use as an appetite stimulant. When administering medications, it is important to know and understand what medication the patient is taking, why they are taking it, to question the provider if it is unclear as to why a drug is ordered , and to explain to patients what they are taking and why.

Medication orders may also contain an indication for administration. For example, medications ordered on a PRN basis must contain an indication for when to administer the medication. Common indications for PRN medications include symptoms such as pain, itching, headache, nausea, or fever. If more than one medication is ordered for the same indication, the order must contain additional details to inform the nurse of when the nurse is to administer each medication. For example, if the patient is ordered Percocet and ibuprofen for pain, the order may state to administer "Ibuprofen PRN pain rated 0–5 on numerical rating scale give ii 200 mg tabs PO Q8 hours" and administer "Percocet PRN pain rated 6–10 on numerical rating scale give ii 2.5/325 mg tabs PO Q8 hours."

Maintaining a Safe Environment

Maintaining a safe environment is crucial for ensuring the safe administration of medications. Essential practices to maintain a safe environment include the following:

- Secure medications by keeping them in a locked cart or cabinet.
- Avoid leaving medications at the patient's bedside unless ordered by the provider.
- Store narcotics in a double-locked cabinet or automated dispensing cabinet (Figure 11.3).
- Count narcotics at the beginning and end of each shift and each time they are accessed.
- Restrict access to medications to approved staff only.
- Grant electronic log-on access or keys to medication carts and cabinets only to approved staff.
- Gather medications for one patient at a time.
- Clearly label all prepared medications.
- Immediately administer medications once gathered.
- Return medications to the cabinet if there is a delay in administration.
- Avoid placing patient medications in clothing pockets.

- Minimize distractions and interruptions.
- Label medication preparation zones as “no talking” zones.

FIGURE 11.3 Automated dispensing cabinets provide an electronic means of controlling medication storage, dispensing, and tracking of drugs. (credit: “Pyxis SupplyStation automated dispensing cabinet at Campbell County Memorial Hospital in Gillette, Wyoming” by Mr. Satterly/Wikimedia Commons, WTF Public License Version 2)

LINK TO LEARNING

Safeguards must also be in place when administering “high-alert” drugs, which are drugs that can cause significant harm if an error occurs. A complete list of “high-alert” medications (https://openstax.org/r/77HighAlertMeds) is provided by the ISMP. Visual cues such as red text and tall man lettering are used to differentiate similar drug names.

If an actual or potential drug administration error occurs, it is important to report the situation immediately according to the agency’s policy. In the event of an actual error, the patient should be closely monitored for any adverse effects, and the patient’s response should be documented. Potential errors are important to report as evaluating these are a means of education for nurses and understanding potential risks. If addressed, potential errors can allow interventions to be implemented to reduce the risk of the situation becoming an actual error in the future.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Principles for Maintaining a Safe Medication Administration Environment

Quality and Safety Education for Nurses (QSEN) provides a framework of competencies essential for maintaining a safe environment during medication administration. By integrating these competencies into daily practice, nurses can mitigate the risk of medication errors and promote positive patient outcomes. Here’s how these competencies relate to maintaining a safe environment during medication administration:

- Patient-centered care: Ensure medications are administered with consideration for individual patient needs

and preferences. For example, assess patient allergies before administering medications to prevent adverse reactions tailored to patient-specific risks. Collaborate with patients in shared decision-making regarding their medication regimen.

- Teamwork and collaboration: Collaborate with interdisciplinary teams to implement safety protocols. For instance, communicate effectively with pharmacists to clarify medication orders and resolve discrepancies in the medication administration process. Participate in interprofessional rounds to discuss medication plans and ensure coordinated care.
- Evidence-based practice (EBP): Implement evidence-based guidelines and protocols for medication administration. Utilize resources such as the ISMP to stay updated on best practices and recommendations for safe medication administration techniques. Incorporate research findings into practice to enhance medication safety and optimize patient outcomes.
- Quality improvement (QI): Participate in quality improvement initiatives to enhance medication safety practices. For example, engage in root cause analysis following medication errors to identify system weaknesses and implement corrective actions to prevent future errors. Regularly audit medication administration processes and outcomes to identify areas for improvement.
- Safety: Prioritize patient safety by following standardized procedures and safety checks during medication administration. For instance, use barcode scanning technology to verify patient identity and medication accuracy before administering any medications. Implement safety measures such as independent double-checks for high-risk medications to reduce the likelihood of errors.
- Informatics: Utilize informatics tools, such as electronic health records (EHRs), to access patient medication profiles and allergy information promptly. Ensure accurate documentation of medication administration and adverse reactions to facilitate communication among healthcare team members. Utilize data analytics to identify trends in medication errors and implement targeted interventions to improve safety.

Incorporating QSEN principles into medication administration practices empowers nurses to uphold the highest standards of safety and quality in patient care. By prioritizing patient-centered care, fostering teamwork and collaboration, embracing evidence-based practice, engaging in quality improvement initiatives, ensuring safety protocols, and leveraging informatics tools, nurses can mitigate risks associated with medication administration and promote optimal patient outcomes.

Adverse Reactions

An unwanted and undesirable effect related to a drug is called an **adverse reaction**. Unlike a **side effect**, which is a predictable undesirable effect related to a drug, adverse reactions are unpredictable. Adverse reactions may occur when starting a new drug, stopping a drug, or changing the dose of the drug (U.S. Food and Drug Administration, 2022). The incidence and severity of adverse drug reactions may be impacted by factors such as age, sex, genetics, underlying conditions, drug type, dose, route of administration, and use of other drugs, vitamins, or supplements (Merck & Co., 2023).

Allergic Reactions

An **allergic reaction** occurs when the immune system responds to a substance, including a drug. Symptoms may include rash, hives, fever, itching, wheezing, runny nose, and watery eyes. A serious drug allergy will typically cause symptoms to appear within one hour after taking the drug. The nurse should notify the provider immediately if the patient develops any symptoms of an allergic reaction. Nurses should remember to always follow the organization's protocol for adverse reactions to a medication.

The most severe type of allergic reaction is **anaphylaxis**. Anaphylaxis is a rare, life-threatening reaction that causes symptoms such as difficulty breathing, nausea, vomiting, diarrhea, dizziness, tachycardia, hypotension, seizure, and loss of consciousness. Anaphylaxis is considered a medical emergency. The nurse should discontinue the drug and urgently notify the provider if anaphylaxis is suspected. The nurse will also initiate emergency protocols according to agency policy.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Intervening When an Allergic Reaction Occurs

Darlene, a 55-year-old female with a history of hypertension and diabetes, was admitted to the hospital for a routine diagnostic procedure involving a computed tomography (CT) scan with contrast dye. She was prepped for the CT scan, and an intravenous (IV) contrast dye was administered to enhance the imaging. Within ten minutes of the dye administration, Darlene started feeling uneasy and reported an unusual sensation on her back. The nurse noticed Darlene scratching her back and asked her about her symptoms. Darlene reported intense itching and a burning sensation that started shortly after the contrast dye was injected.

The nurse performed a physical assessment and found a red, raised rash covering most of Darlene's back. Recognizing these cues—the timing of the symptom onset, the nature of the itching, and the visible rash—the nurse suspected a possible allergic reaction to the contrast dye. To gather more information, the nurse checked Darlene's vital signs to monitor for any systemic involvement, such as changes in blood pressure or heart rate. The nurse also asked Darlene when the itching started, if she had any other symptoms such as difficulty breathing or swelling, and if she had any known allergies.

Based on the analysis of the cues—the rapid onset of itching and rash following the administration of the contrast dye—the nurse hypothesized that Darlene was experiencing an allergic reaction to the IV contrast dye. The nurse immediately stopped the infusion of the contrast dye and alerted the provider about the suspected allergic reaction. The provider ordered an antihistamine (diphenhydramine) and a corticosteroid to manage the allergic reaction and reduce inflammation. Darlene was placed under close observation to monitor for any progression of the allergic reaction, particularly signs of anaphylaxis, such as difficulty breathing or swelling of the face or throat.

Toxic Effect

The degree to which a drug can be poisonous or harmful to the body is called **drug toxicity**. It is a serious event that causes the medication to build up in the body and can often cause harm to the body or even death. For example, digoxin has a half-life of thirty to forty hours and is excreted through the kidneys. Patients with impaired kidney function, such as older adults or those with chronic kidney disease, are at a higher risk of developing a buildup of digoxin, potentially leading to toxicity. Signs of digoxin toxicity may include gastrointestinal upset, dyspnea, syncope, palpitations, and the appearance of yellow halos around lights. Drug toxicity can occur for various reasons, including accidental factors such as a dose being too high or slowed metabolism of the drug, or intentional factors such as a suicide attempt. If drug toxicity is suspected, the nurse should immediately notify the provider. Treatment for toxicity may involve withholding the drug until serum blood levels in the body decrease or performing stomach lavage to remove significant amounts of the ingested medication (Merck & Co., 2023).

Tolerance

A **tolerance** refers to a decrease in the effectiveness of the drug over time due to repeated use. For example, patients on long-term opioid use due to cancer or chronic pain may require higher doses of opioids over time or additional pain relief therapies to be added to their regimen to adequately treat their pain. It is important to note that tolerance is not the same as **dependence**, which is when a patient depends on the drug to function. If a patient becomes tolerant to a drug, the provider may need to increase the dose of the drug or use an alternative drug to achieve the desired effect (Merck & Co., 2023).

Drug Interaction

A **drug interaction** is when a drug reacts with another drug, food, supplement, or the patient's medical condition. This interaction may affect the action of the drug(s) or result in unwanted adverse effects (Figure 11.4). For example, taking opioids and central nervous system depressants together may increase the risk of respiratory depression, whereas eating leafy greens may decrease the effects of warfarin.

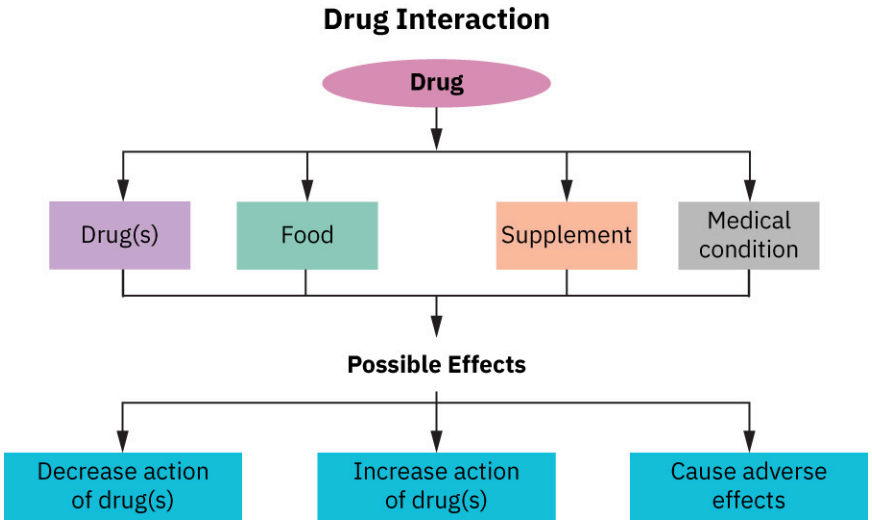

FIGURE 11.4 A drug interaction is a type of adverse reaction that causes undesirable effects. (credit: data source: National Institutes of Health; attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Paradoxical Effect

A **paradoxical effect** occurs when the effect of a drug is opposite from the intended effect. For example, a stimulant causing drowsiness, an antidepressant leading to suicidal thoughts, or a pain relief medication causing increased pain are examples of paradoxical effects of medications. Paradoxical effects should be documented and reported to the provider for consideration.

Rights of Medication Administration

Nurses are responsible for ensuring patient safety during medication administration. The rights of medication administration are a set of guidelines to adhere to when administering medications in an effort reduce adverse medication events. The five core "rights" of medication administration include the following: right patient, right drug, right route, right time, and right dose. To enhance safety, the American Nurses Association (2021) recommended the addition of right reason, right documentation, and right response (Table 11.3).

Medication Rights	Nursing Actions
Right patient	Validate correct patient by confirming two or more patient identifiers (e.g., patient's full name, date of birth, medical record number). Identifiers must be confirmed verbally by the patient, by the patient armband, or other acceptable means according to the agency's policy.
Right drug	Compare the medication label to the medication order to ensure correct drug name, note expiration date, and confirm patient allergies.
Right route	Ensure medication is administered via the prescribed method (e.g., oral, sublingual, intravenous). If the route needs to be altered, consult the provider, and obtain a new order.
Right time	Medication is administered according to the prescribed frequency. Confirm when last dose was administered.
Right dose	Confirm dose matches the prescribed dose and is within a safe dosage level. Confirm dosage calculations and question doses outside of the safe dosage range.

TABLE 11.3 The Rights of Medication Administration

Medication Rights	Nursing Actions
Right reason	Confirm why the patient is taking the medication and ensure the mechanism of action aligns with the indication.
Right documentation	Following administration, document the name of the drug, dose, route, time administered, and patient's response to the drug administered.
Right response	Assess if drug resulted in the desired effect.

TABLE 11.3 The Rights of Medication Administration

The five core "rights" of medication administration (right patient, right drug, right route, right time, and right dose) should be confirmed at three different checkpoints during the medication administration process. These three checkpoints are when obtaining the medication, when preparing the medication, and when administering the medications at the bedside. At each of the checkpoints, the medication label should be compared to the medication order to confirm the right patient, right drug, right route, right time, and right dose.

Bar Code Medication Administration (BCMA) is an electronic scanning system used to decrease the risk of medication administration errors and confirm the "rights" of medication administration (Figure 11.5). By scanning barcodes on the patient's armband and medication labels, the electronic system can confirm that the right patient receives the right dose of the right medication according to the right frequency. BCMA also provides additional alerts, such as when vital signs need to be assessed prior to administering a medication, allergies are present, or a second nurse needs to verify the medication.

FIGURE 11.5 Nurses use Bar Code Medication Administration to assist with confirming the "rights" of medication administration. (credit: "20130306-OC-RBN-3904 (8575102671)" by Bob Nichols, United States Department of Agriculture-Office of Communications-Photography Services Division/Wikimedia Commons, Public Domain)

In addition to checking the basic rights of medication administration and documenting the administration, it is important for nurses to verify the following information to prevent medication errors:

- Right history and assessment. The nurse should be aware of the patient's allergies as well as any history of any drug interactions. Additionally, nurses collect appropriate assessment data regarding the patient's history, current status, and recent laboratory results to identify any contraindications for the patients to receive the prescribed medication.

- Right drug interactions. The patient's history should be reviewed for any potential interactions with medications previously given or with the patient's diet. It is also important to verify the medication's expiration date before administration.
- Right education and information. Information should be provided to the patient about the medication, including the expected therapeutic effects as well as the potential adverse effects. The patient should be encouraged to report suspected side effects to the nurse and/or prescribing provider. If the patient is a minor, the parent may also have a right to know about the medication in many states, depending on the circumstances.
- Right of refusal. After providing education about the medication, the patient has the right to refuse to take medication in accordance with the Code of Ethics for Nurses and respect for individual patient autonomy. If a patient refuses to take the medication after proper education has been performed, the event should be documented in the patient chart and the prescribing provider notified.

11.3 The Medication Administration Process

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain medication administration procedures according to route
- Describe the nursing roles and responsibilities of medication administration

Serving as the final checkpoint in the medication process before administration, nurses assume a pivotal role in safeguarding patient safety. As such, the nurse must have demonstrated competency in administering medications via each individual route. Moreover, nurses play pivotal roles in the medication administration process, encompassing assessment, delegation, error reporting, documentation, evaluation, and education. Mastery of these roles and responsibilities is indispensable for nurses to uphold the highest standards of patient care and safety.

Medication Administration Procedures

Medication administration is a critical component of nursing practice that encompasses a variety of routes to deliver therapeutic agents effectively. This section introduces the procedures for administering medications through different routes, including oral, intradermal, subcutaneous, intramuscular, intravenous, as well as ophthalmic (eye), otic (ear), nasal, inhalation, vaginal, and rectal routes. Each route requires specific techniques and considerations to maximize the intended effects of the medication while minimizing potential adverse reactions. Understanding these procedures is essential for nurses to deliver care effectively and to educate patients on their medication regimens.

Oral Medication Administration

Administering medications via the oral route is simple, convenient, and widely accepted, especially in home settings. Medications ordered for oral administration (*per os*, or PO) are taken by mouth. After swallowing, these medications are typically absorbed in the small intestine. Oral medications generally have a slow onset, taking about thirty to sixty minutes to start working.

When administering oral medications, patient safety is paramount. The nurse must assess for contraindications such as **dysphagia** (difficulty swallowing), nasogastric (NG) tube with suctioning, nothing by mouth (NPO) status, or the inability to sit upright. If the patient has difficulty swallowing, a **tablet** (compressed powder or granules) is typically crushed (Figure 11.6) and placed in a substance such as applesauce or pudding for easier swallowing, based on the patient's prescribed diet. However, it is crucial to verify that a tablet may be crushed by consulting a drug reference or a pharmacist. An **enteric-coated tablet** (a tablet covered in a substance that delays the medication from dissolving), a **capsule** (a powder or granules contained in a gelatin shell), and **timed-release** (slow release of a medication for prolonged action) should never be crushed as this will affect the intended action of the medication. In such cases, the provider must be contacted for a change in the route of administration.

FIGURE 11.6 Pill crushers may be used to crush certain tablets. The pill crusher typically consists of a container or reservoir where the pill is placed and a grinding mechanism or crusher that helps crush the pill into a powder. (reproduced with permission from Carol Clarkson)

Position the patient in an upright position to decrease the risk of aspiration (Figure 11.7). Patients should remain in this position for thirty minutes after medication administration if possible. If a patient is unable to sit, assist them into a side-lying position. Offer a glass of water or other oral fluid (that is not contraindicated with the medication) to ease swallowing and improve absorption and dissolution of the medication, taking any fluid restrictions into account. Remain with the patient until all medication has been swallowed before documenting to verify the medication has been administered.

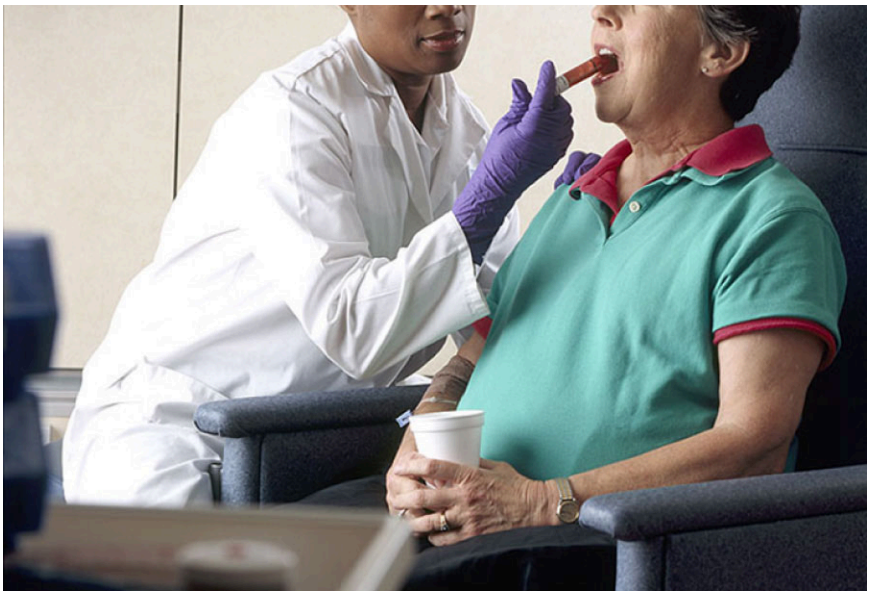

FIGURE 11.7 The patient should be positioned upright when administering oral medications. (credit: "Nurse administers oral chemotherapy" by Rhoda Baer, National Cancer Institute/Wikimedia Commons, Public Domain)

Once confirmed that oral medications can be safely administered, the nurse should verify the MAR against the provider's orders and obtain the medications, confirming the medication rights at each step. After preparing the medications and confirming the rights again, the nurse assists the patient into an upright or side-lying position if necessary, offers a suitable liquid, and ensures all medications are swallowed. The nurse then performs any required post-assessments and documents the patient's response to the medication.

LIFE-STAGE CONTEXT

Administering Oral Medications to Children

Several factors should be kept in mind when administering oral medications to children. Sometimes, children are reluctant to take medications. In these instances, it may be helpful to mix the medication with a soft food (e.g., applesauce) when possible or have the child's caregiver assist with administering the medication. Medications may need to be prescribed in a liquid or chewable form if the child is unable to swallow medications in a solid form. When administering liquid medications to a child, an oral syringe or medication dropper may be used to provide a precise measurement of the medication. Liquid medications should be squirted between the child's gum and cheek

to avoid aspiration. It is important for the nurse to be patient when administering medications to children and to try to address the child's and caregiver's fears.

For medications given **sublingually** (under the tongue) or **buccally** (between the cheek and gum), ensure the mouth is moist by offering a drink of water prior to administration, which aids absorption. Instruct the patient to allow the medication to completely dissolve without swallowing or chewing it. Liquid medications should be shaken if they are suspensions and poured with the label in the palm of the hand to prevent blurring from any spills. Measure liquids at eye level to ensure accurate dosing, following specific agency policy and procedure when administering oral medications.

LINK TO LEARNING

Watch this video demonstrating how to administer oral medications (https://openstax.org/r/77OralMeds) to patients.

Intradermal Medication Administration

Injecting medications into the dermis layer of the skin, just below the epidermis, is known as **intradermal (ID)** medication administration. This route is commonly used for skin testing, such as tuberculin skin testing (TST), and for administering small volumes of certain medications, such as local anesthetics and allergy tests. Before administering medication intradermally, the nurse must select an appropriate site for injection, typically the inner aspect of the forearm or the upper back, and cleanse the area with an antiseptic solution to minimize the risk of infection. The nurse should also assess the patient's skin integrity and previous reactions to intradermal injections to ensure safety and efficacy.

When preparing for intradermal medication administration, the nurse should use a small-gauge needle, typically 0.25 to 0.5 in (6.4 to 12.7 mm) and 25 to 27 **gauge (**diameter of the hole in the needle), to minimize tissue trauma and ensure accurate placement of the medication within the dermis. The needle should be inserted at a 10- to 15-degree angle into the skin, creating a small bleb or **wheal** (a small, raised, and usually pale bump that forms at the injection site) that indicates proper placement of the medication (Figure 11.8) (Indiana Department of Health, n.d.). The nurse should inject the medication slowly to minimize discomfort and prevent leakage or dispersion of the medication into surrounding tissues. After administering the medication, the nurse should cover the injection site with a sterile gauze pad or adhesive bandage to protect the area and prevent contamination.

FIGURE 11.8 A small medication-filled bubble called a wheal, or a bleb, will appear at the injection site if the intradermal medication is administered correctly. (credit: "ID# 6806" by Greg Knobloch, Centers for Disease Control and Prevention/Public Health Image Library, Public Domain)

Following intradermal medication administration, the nurse should closely monitor the injection site for any signs of adverse reactions, such as redness, swelling, or itching. The nurse should also instruct the patient to avoid scratching or rubbing the injection site to prevent irritation and ensure accurate interpretation of skin test results (Indiana Department of Health, n.d.). Additionally, the nurse should document the medication administration, including the medication name, dose, route, injection site, and any patient responses or adverse reactions.

LINK TO LEARNING

Watch this video demonstrating how to administer intradermal medications (https://openstax.org/r/77IntradermMeds) to a patient.

Subcutaneous Medication Administration

Delivering medications into the fatty tissue layer just beneath the skin is known as **subcutaneous (SQ)** medication administration. This route is commonly used for medications that require slow and sustained absorption into the bloodstream, such as insulin and certain types of vaccines. Before administering medication via the SQ route, the nurse must assess the patient's suitability for this method, considering factors such as the thickness of the subcutaneous tissue, the volume of medication to be injected, and the type of medication being administered. Common sites for SQ injections include the abdomen, upper arms, thighs, and buttocks, with the abdomen being the preferred site for most injections due to its large surface area and consistent absorption rates (Figure 11.9).

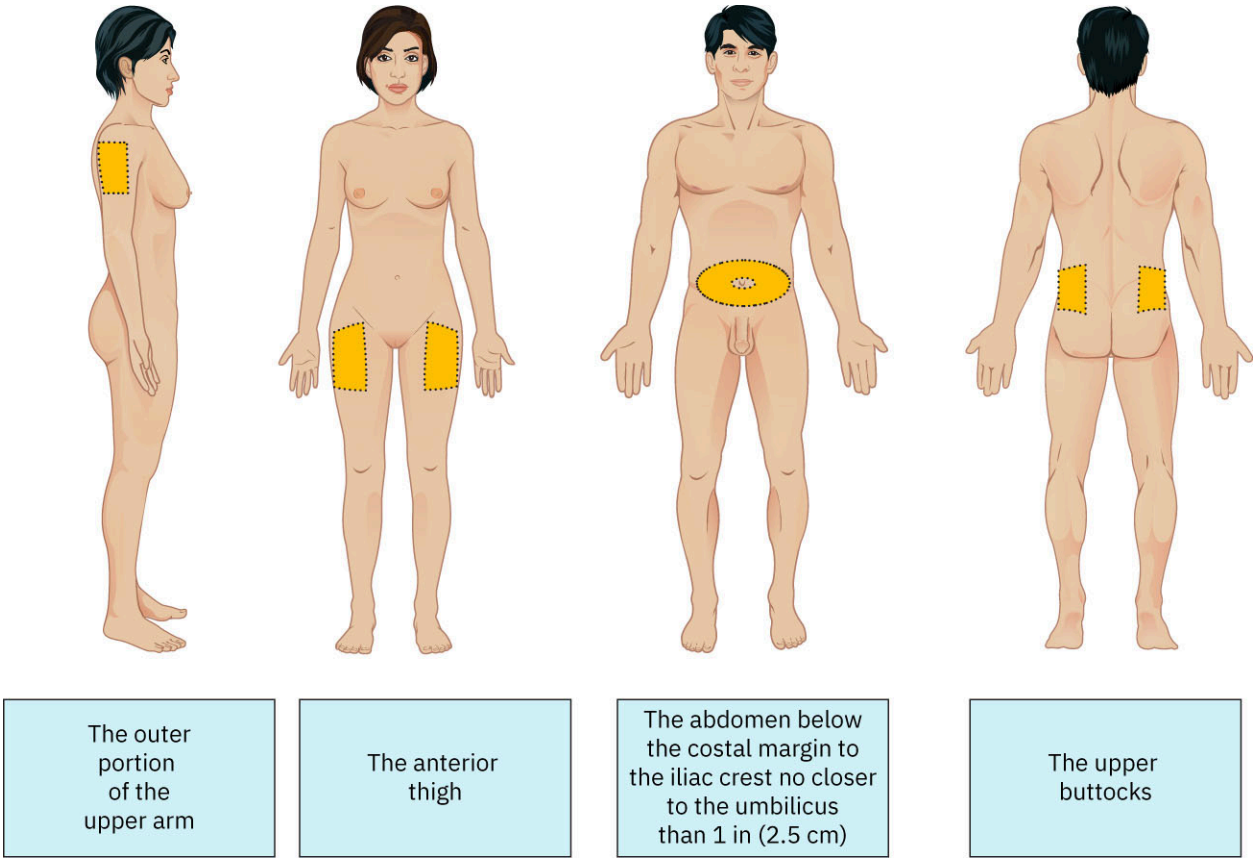

FIGURE 11.9 The anatomical sites appropriate for administering SQ injections are shown here. The upper back is another appropriate SQ injection site. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

When preparing for an SQ injection, the nurse must adhere to strict aseptic technique to minimize the risk of infection. This involves washing hands thoroughly, preparing the injection site with an antiseptic solution, and ensuring that all equipment is sterile. Additionally, the nurse should select an appropriate needle length and gauge based on the patient's age (25G–30G needle that is 3/8 to 5/8 in [9.5 to 15.9 mm] long), body size, and the type of medication being administered (Mannheim, 2023). After preparing the medication, the nurse should pinch the skin

at the selected injection site to create a skinfold, which helps facilitate proper needle insertion and medication absorption.

During the injection process, the nurse should use a quick, dart-like motion to insert the needle into the subcutaneous tissue at a 45- to 90-degree angle, depending on the needle length and the patient's body size. Once the needle is inserted, the medication should be injected slowly and steadily to minimize discomfort and reduce the risk of tissue damage. After administering the medication, the nurse should withdraw the needle swiftly and apply gentle pressure to the injection site to minimize bleeding. Finally, the nurse should dispose of the used needle and syringe in a puncture-proof container and document the medication administration, including the site used and any patient responses or adverse reactions (Mannheim, 2023).

LINK TO LEARNING

Watch this video demonstrating how to administer subcutaneous medications (https://openstax.org/r/77SubcutMeds) to a patient.

Intramuscular Medication Administration

Injecting medications directly into the muscle tissue is known as **intramuscular (IM)** medication administration. This route is commonly used for medications that require a slow and sustained release into the bloodstream or those that cannot be effectively absorbed through the digestive system. Before administering medication via the IM route, the nurse must assess the patient's suitability for this method, considering factors such as muscle mass, amount of fatty tissue, and the volume of medication to be injected. Common sites for IM injections include the deltoid muscle in the upper arm, the vastus lateralis muscle in the thigh, and the ventrogluteal or dorsogluteal muscles in the buttocks (Figure 11.10) (Polania & Munakomi, 2023). The choice of injection site depends on factors such as the patient's age, the volume of medication, and the type of medication being administered.

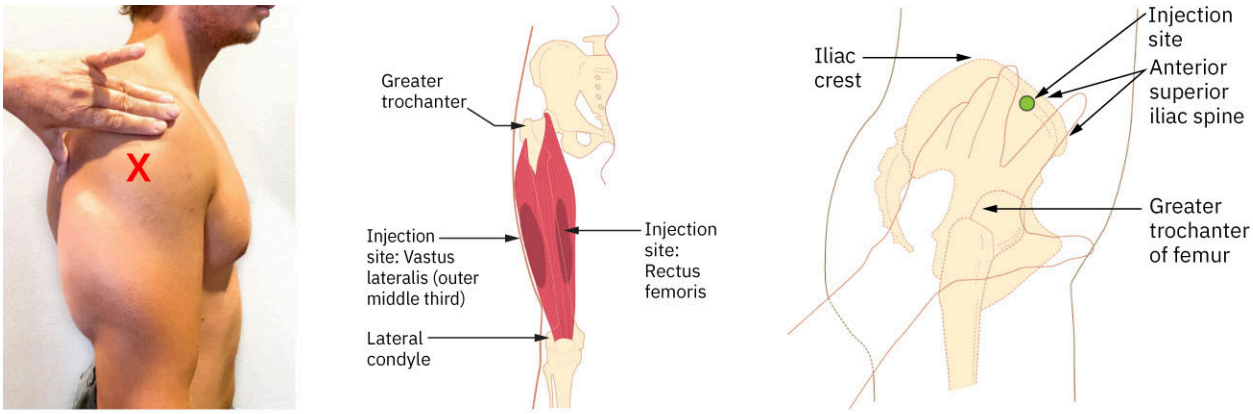

FIGURE 11.10 This illustration demonstrates how to locate the (a) deltoid, (b) vastus lateralis, and (c) ventrogluteal site for IM medication injections. (credit a: modification of "Sept-22-2015.11" by British Columbia Institute of Technology, CC BY 4.0; credit b: modification of "Im-vastus-lateralis" by British Columbia Institute of Technology/Wikimedia Commons, CC BY 4.0; credit c: modification of "Im-ventrogluteal-300x244" by British Columbia Institute of Technology/Wikimedia Commons, CC BY 4.0)

When preparing for an IM injection, the nurse must adhere to strict aseptic technique to minimize the risk of infection. This involves washing hands thoroughly, preparing the injection site with an antiseptic solution, and ensuring that all equipment is sterile. Additionally, the nurse should select an appropriate needle length and gauge based on the patient's age (20G–25G needle that is 5/8–1.5-in [15.9 –38.1 mm] long), muscle mass, and the type of medication being administered. After preparing the medication, the nurse should **aspirate** the syringe to check for blood return, which helps confirm that the needle is not in a blood vessel before injecting the medication (Polania & Munakomi, 2023).

LIFE-STAGE CONTEXT

Administering Intramuscular Medications to Pediatric Patients

When administering intramuscular (IM) medications to pediatric patients, nurses must adapt their approach to ensure safety and minimize discomfort. Selecting the appropriate injection site and needle size is crucial, considering the child's age, size, and muscle development. For infants and small children, a shorter needle length (e.g., 5/8 in [15.8 mm]) and smaller gauge (e.g., 25G–27G) are typically appropriate to minimize tissue trauma and discomfort. The vastus lateralis muscle in the thigh is often preferred for IM injections in infants and toddlers due to its larger size and well-developed muscle mass, providing adequate absorption and reducing the risk of nerve injury. In older children and adolescents, longer needles (up to 1.5 in [38.1 mm]) and slightly larger gauges may be used, depending on the child's muscle development and adipose tissue distribution. Nurses should assess the child's individual characteristics, such as body mass index (BMI) and muscle tone, to determine the most suitable injection technique. By tailoring needle size and injection site selection to the child's age and anatomical features, nurses can enhance the safety and comfort of IM medication administration in pediatric patients.

During the injection process, the nurse should use a quick, dart-like motion to insert the needle into the muscle tissue at a 90-degree angle (Polania & Munakomi, 2023). Once the needle is inserted, the medication should be injected slowly and steadily to minimize discomfort and reduce the risk of tissue damage. After administering the medication, the nurse should withdraw the needle swiftly and apply gentle pressure to the injection site to minimize bleeding. Finally, the nurse should dispose of the used needle and syringe in a puncture-proof container and document the medication administration, including the site used and any patient responses or adverse reactions.

LINK TO LEARNING

Watch this video demonstrating how to administer intramuscular medications (https://openstax.org/r/77IntramuscMeds) to a patient.

Intravenous Medication Administration

Intravenous (IV) medication administration involves delivering medications directly into the bloodstream via a vein. This route allows for rapid absorption and immediate therapeutic effects, making it suitable for medications that require fast onset of action, such as emergency drugs, fluids, and certain antibiotics. Before administering medication intravenously, the nurse must verify the patient's identity, confirm the medication order against the patient's medical record, and assess the patient's vascular access to ensure the availability of suitable veins for infusion. Common sites for IV access include the veins in the arms, hands, and sometimes the feet, depending on the patient's condition and the type of medication to be administered.

When preparing for IV medication administration, the nurse must follow strict aseptic technique to prevent infection and contamination. This involves washing hands thoroughly, disinfecting the infusion site with an antiseptic solution, and using sterile equipment, including IV catheters (small hollow tube placed in the vein), tubing, and syringes. Additionally, the nurse should select the appropriate size and type of IV **catheter** based on the patient's age, vein size, and the viscosity of the medication being administered. The nurse should also assess the compatibility of the medication with the IV solution to avoid potential incompatibilities and adverse reactions.

During the IV medication administration process, the nurse should carefully insert the IV catheter into the vein using aseptic technique and secure it in place to prevent dislodgement. Once the catheter is in place, the nurse should flush the catheter with a saline solution to ensure **patency** (open and unobstructed line) and confirm proper placement (Figure 11.11). The nurse should administer the medication slowly and continuously, monitoring the patient for any signs of adverse reactions or complications, such as **infiltration** (occurs when the tip of the catheter slips out of the vein and into the surrounding tissue), **extravasation** (infiltration of damaging IV medications into the extravascular tissue around the site of infusion), or **phlebitis** (inflammation of a vein). After completing the medication infusion, the nurse should flush the catheter again to clear any residual medication and maintain catheter patency. Finally, the nurse should document the medication administration, including the medication

name, dose, route, infusion site, and any patient responses or adverse reactions.

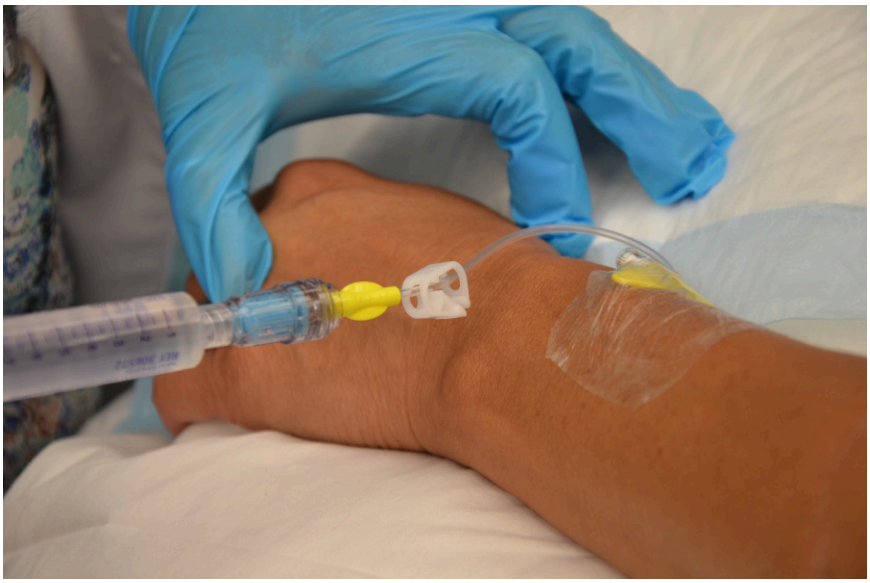

FIGURE 11.11 Part of a nurse's initial assessment includes flushing a saline lock IV with normal saline to ensure and maintain patency. (credit: "Flush the saline lock" by Glynda Rees Doyle and Jodie Anita McCutcheon/Clinical Procedures for Safer Patient Care, CC BY 4.0)

LINK TO LEARNING

Watch this video demonstrating how to administer intravenous medications (https://openstax.org/r/77IntravenMeds) to a patient.

Eye Medication Administration

Eye (**ophthalmic**) medication administration involves the instillation of medications into the eye to treat various ocular conditions such as infections, inflammation, and glaucoma. Before administering eye medications, the nurse should perform hand hygiene and gather the necessary supplies, including the prescribed medication, sterile saline or sterile water, tissues, and gloves if indicated. To prevent errors, it is essential to verify the patient's identity and confirm the correct medication, dosage, and eye before proceeding with the administration.

To administer an **eye drop**, liquid medication intended for use in the eye, the nurse should instruct the patient to tilt their head back and look up, or lie down if unable to sit upright. Using one hand, the nurse should gently pull down the lower eyelid to create a pouch for the medication. With the other hand, the nurse should hold the medication dropper or bottle above the eye and instill the prescribed number of drops into the conjunctival sac (Figure 11.12) (Gudgel, 2023). Avoid touching the bottle tip or touching the bottle to the eye or eyelid, to prevent bacterial contamination (Gudgel, 2023). The patient should then close their eyes gently and apply gentle pressure to the inner corner of the eye for one to two minutes to prevent systemic absorption and promote medication absorption.

FIGURE 11.12 The provider gently pulls the patient's eyelid downward to form a pocket in the lower lid (i.e., conjunctival sac) where the eye drop is placed. (credit: "Instilling eye medication" by British Columbia Institute of Technology (BCIT)/Wikimedia Commons, CC BY 4.0)

For eye ointments, which are greasy semisolids that melt into tiny drops with body warmth, the nurse should instruct the patient to tilt their head back and look up, or lie down if unable to sit upright. Using one hand, the nurse should gently pull down the lower eyelid to expose the conjunctival sac. With the other hand, the nurse should apply a thin ribbon of **ointment** along the inside of the lower eyelid from the inner to the outer corner, ensuring the tube does not touch the eye or eyelashes. The patient should then close their eyes gently and blink several times to distribute the medication evenly across the eye surface. After administration, the nurse should instruct the patient to keep their eyes closed for one to two minutes to minimize eye irritation and systemic absorption. If the patient is receiving eye drops and eye ointments, eye drops should be instilled before applying eye ointment, as the ointment may affect the absorption of the eye drop (Shaw, 2016).

LINK TO LEARNING

Watch this video demonstrating how to administer eye medications (https://openstax.org/r/77EyeMeds) to a patient.

Ear Medication Administration

Ear (**otic**) medication administration involves the instillation of medications into the ear canal to treat various ear conditions such as infections, inflammation, and excessive earwax buildup. Before administering ear medications, the nurse should perform hand hygiene and gather the necessary supplies, including the prescribed medication, sterile saline or sterile water, cotton balls or gauze, and gloves if indicated. To prevent errors, it is crucial to verify the patient's identity and confirm the correct medication, dosage, and ear before proceeding with the administration.

To administer an **ear drop**, liquid medication applied into the ear canal, the nurse should instruct the patient to lie on their side with the affected ear facing upward. Using one hand, the nurse should gently pull the earlobe upward and backward (downward and backward for a pediatric patient) to straighten the ear canal and create a pathway for the medication (Figure 11.13) (Nemours Kids Health, 2022). With the other hand, the nurse should hold the medication dropper or bottle above the ear and instill the prescribed number of drops into the ear canal, taking care not to touch the ear or ear canal with the dropper. The patient should then remain in the side-lying position for two to three minutes to allow the medication to penetrate the ear canal fully (Cleveland Clinic, 2023).

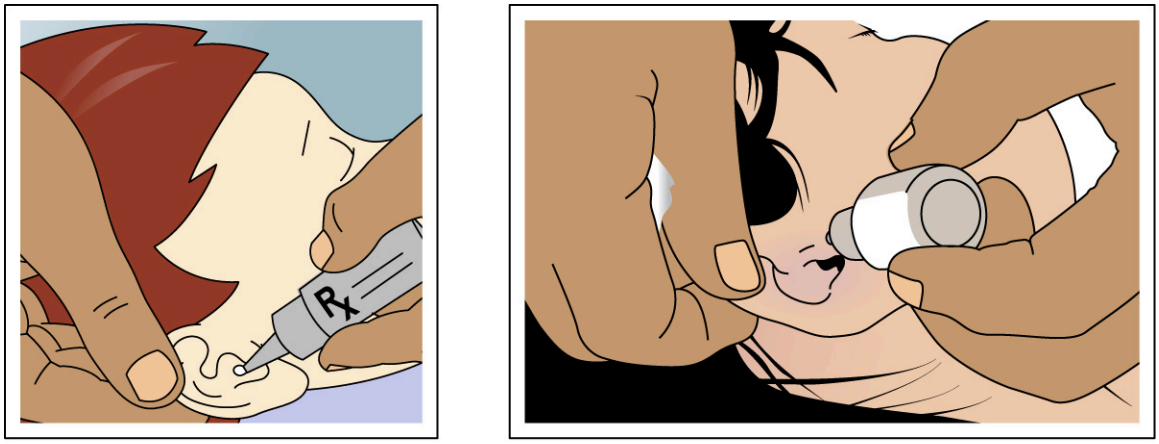

FIGURE 11.13 When administering ear medications, (a) pull the auricle down and back for children or (b) up and back for adults. (attribution a and b: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Watch this video demonstrating how to administer ear medications (https://openstax.org/r/77EarMeds) to a patient.

Nasal Medication Administration

Nose or nostril (**nasal**) medication administration involves the delivery of medications into the nasal passages to treat various nasal conditions such as congestion, allergies, and sinus infections. Before administering nasal medications, the nurse should perform hand hygiene and gather the necessary supplies, including the prescribed medication, tissues, and gloves if indicated. To prevent errors, it is essential to verify the patient's identity and confirm the correct medication, dosage, and route before proceeding with the administration.

Before using a nasal medication for the first time, the nasal spray bottle must be primed. This preparatory step entails expelling a few test sprays to eliminate any air from the nozzle or tubing of the bottle, thereby confirming the initial dose administered to the patient contains the accurate amount of medication as intended by the healthcare provider. To administer nasal medications, the nurse should instruct the patient to blow their nose gently to clear the nasal passages. The patient should then sit upright or tilt their head back slightly. Using one hand, the nurse should support the back of the patient's head, while with the other hand, they should hold the medication bottle or nasal spray device. The nurse should insert the nozzle of the bottle or spray device into one nostril, aiming slightly outward toward the ear, and gently press the bottle or spray device to administer the prescribed number of sprays or drops (Figure 11.14). The patient should inhale gently through the nose while the medication is being administered to ensure proper distribution throughout the nasal passages. The process should then be repeated for the other nostril if indicated. The patient should be instructed to avoid blowing their nose or tilting their head forward for five to ten minutes to prevent the medication from leaking out of the nostrils (Cleveland Clinic, 2022).

FIGURE 11.14 When administering nasal medication, aim the nasal medication bottle toward the ear, away from the septum. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Watch this video demonstrating how to administer nasal medications (https://openstax.org/r/77NasalMeds) to a patient.

Inhalation Medication Administration

Inhalation medication administration involves delivering medications directly into the respiratory system through inhalation. This method is commonly used to treat respiratory conditions such as asthma, chronic obstructive pulmonary disease (COPD), and respiratory infections. Before administering inhaled medications, the nurse should perform hand hygiene and gather the necessary supplies, including the prescribed medication, inhalation device (such as a metered-dose inhaler or nebulizer), and a **spacer** (a clear tube that fits between the inhaler and the mouthpiece, allowing the medication to move into the spacer for the patient to inhale more slowly and with control) if indicated. To prevent errors, it is crucial to verify the patient's identity and confirm the correct medication, dosage, and route.

For inhalers **(**pocket-sized devices that deliver medications into the lungs without the use of electricity) and **metered-dose inhalers (MDIs)** (devices that use electricity to create an aerosolized mist of medication that is inhaled into the lungs), the nurse should instruct the patient to shake the **inhaler** well before each use and remove the cap. The patient should then exhale fully to empty the lungs, place the mouthpiece of the inhaler between their lips, and create a tight seal with their lips around the mouthpiece. While breathing in slowly and deeply, the patient should simultaneously press down on the inhaler to release the medication and continue to inhale until their lungs are full. After inhaling the medication, the patient should hold their breath for ten seconds to allow the medication to deposit in the lungs before exhaling slowly. If multiple doses are prescribed, the patient should wait the specified amount of time between doses as directed (National Heart, Lung, and Blood Institute, 2021a).

LINK TO LEARNING

Watch this video demonstrating how to administer metered-dose inhaler medications (https://openstax.org/r/77InhalerMeds) to a patient.

Small electric or battery-powered machines that deliver a fine mist of liquid medications, or nebulizers, are another common method for delivering inhaled medications and are particularly useful for patients who have difficulty using MDIs or require higher doses of medication. To administer medication via **nebulizer**, the nurse should assemble the nebulizer according to the manufacturer's instructions and add the prescribed amount of medication to the nebulizer chamber. The patient should then sit upright or in a comfortable position and insert the mouthpiece of the nebulizer into their mouth or use a mask if indicated. The nebulizer should be turned on, and the patient should inhale the medication mist produced by the nebulizer until all the medication is gone, which typically takes about five to ten minutes. After administration, the nebulizer should be cleaned and disinfected according to the manufacturer's instructions to prevent contamination and ensure optimal functioning for future use (National Heart, Lung, and Blood Institute, 2021b).

LINK TO LEARNING

Watch this video demonstrating how to administer nebulized medications (https://openstax.org/r/77NebulizedMeds) to a patient.

Vaginal Medication Administration

The insertion of medication into the vaginal canal, known as **vaginal** medication administration, treats various gynecological conditions such as vaginal infections and hormonal imbalances. It is also used to prepare for certain medical procedures. Before administering vaginal medications, the nurse should ensure privacy for the patient and explain the procedure to alleviate any concerns or anxieties. Hand hygiene should be performed, and appropriate supplies, including the prescribed medication, gloves, lubricant (if needed), and applicator (if provided), should be gathered.

To administer vaginal medications, the patient should be instructed to assume a comfortable position, such as lying on their back with knees bent, standing with one foot elevated on a stool, or a left lateral lying position. The nurse should don gloves and prepare the medication according to the provider's orders and manufacturer's instructions. If an applicator is provided, the medication should be drawn into the applicator barrel. If no applicator is provided, the medication may be applied directly from the container or with the nurse's gloved fingers.

Next, the nurse should gently insert the applicator or fingers containing the medication into the vaginal canal, aiming toward the small of the patient's back (Figure 11.15). The depth of insertion may vary depending on the specific medication and provider's instructions. Once the medication is deposited into the vagina, the applicator should be slowly withdrawn, or the nurse's fingers should be gently removed. Patients should be advised to remain lying down for a few minutes after administration to allow the medication to distribute evenly within the vaginal canal (Carter, 2024).

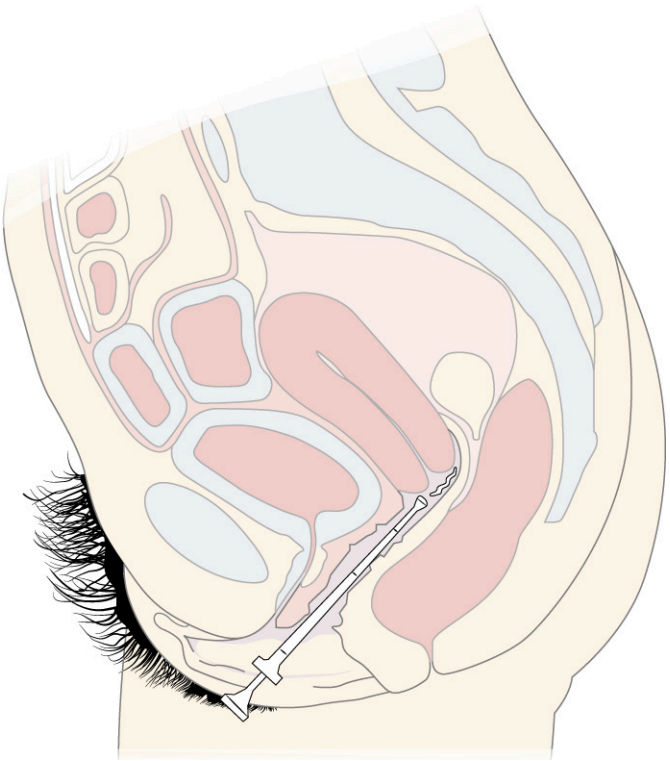

FIGURE 11.15 The filled applicator should be inserted into the full length of the vagina before pushing in the plunger. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

After administering the medication, the nurse should dispose of any used supplies appropriately and provide the patient with any necessary postadministration instructions. These instructions may include avoiding sexual intercourse or vaginal douching for a specified period, as well as any potential side effects or adverse reactions to monitor for.

LINK TO LEARNING

Watch this video demonstrating how to administer vaginal medications (https://openstax.org/r/77VaginalMeds) to a patient.

Rectal Medication Administration

The insertion of medication into the rectum for local or systemic effects is known as **rectal** medication administration. This route is commonly used when the oral route is not feasible due to patient conditions such as vomiting, unconsciousness, or inability to swallow. Before administering rectal medications, the nurse should ensure the patient's privacy and explain the procedure to alleviate any concerns. Hand hygiene should be performed, and appropriate supplies, including the prescribed medication, gloves, lubricant (if needed), and applicator (if provided), should be gathered.

To administer rectal medications, the patient should be instructed to assume a comfortable position, typically lying on their left side with the right knee bent. The nurse should don gloves and prepare the medication according to the provider's orders and manufacturer's instructions. If an applicator is provided, the medication should be drawn into the applicator barrel. If no applicator is provided, the medication may be applied directly from the container or with the nurse's gloved fingers.

Next, the nurse should gently insert the applicator or fingers containing the medication into the rectum, aiming toward the patient's umbilicus (Figure 11.16). The depth of insertion may vary depending on the specific medication and provider's instructions. Once the medication is deposited into the rectum, the applicator should be slowly withdrawn, or the nurse's fingers should be gently removed. Patients should be advised to remain lying down for a few minutes after administration to allow the medication to be absorbed (Wilson, 2023).

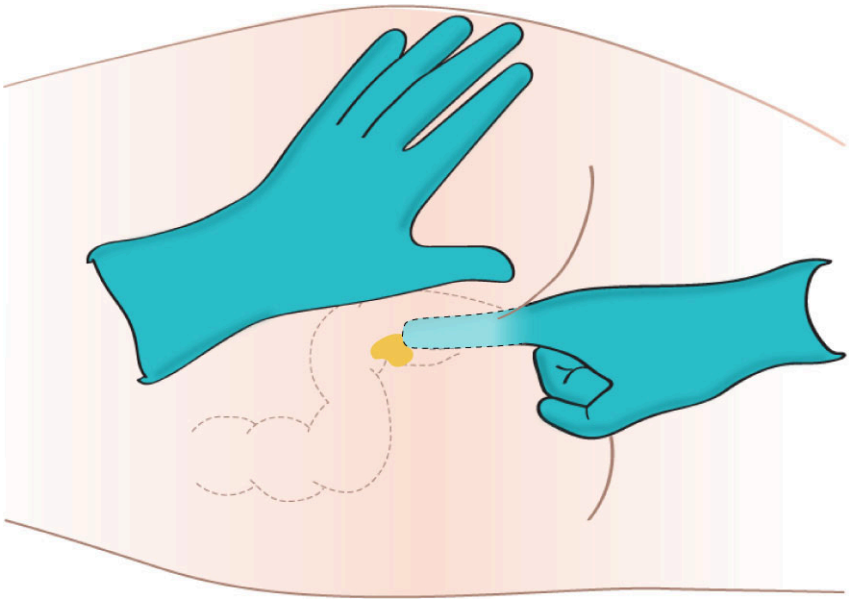

FIGURE 11.16 The nurse inserts the suppository into the rectum toward the umbilicus. (credit: modification of "Administering-med-rectally-2" by British Columbia Institute of Technology (BCIT)/Wikipedia, CC BY 4.0)

After administering the medication, the nurse should dispose of any used supplies appropriately and provide the patient with any necessary postadministration instructions. These instructions may include avoiding defecation for a specified period to allow the medication to be absorbed, as well as any potential side effects or adverse reactions to monitor for.

LINK TO LEARNING

Watch this video demonstrating how to administer rectal medications (https://openstax.org/r/77RectalMeds) to a patient.

Nursing Roles and Responsibilities of Medication Administration

Nurses play a pivotal role in the safe and effective administration of medications, encompassing a broad range of responsibilities that ensure optimal patient outcomes. These duties include thorough assessment, careful delegation of tasks, accurate documentation, evaluation of medication efficacy, education of patients and their families, and diligent reporting of any errors. By integrating these key responsibilities into their practice, nurses uphold high standards of care and patient safety in medication administration.

Assessment

When administering medications, one of the pivotal responsibilities of the nurse is comprehensive patient assessment. This assessment occurs before, during, and after medication administration. Prior to administering medications, nurses assess various aspects of the patient's condition, such as their ability to swallow, current dietary restrictions such as NPO status, and vital signs if deemed necessary. For instance, cardiac medications may require evaluation of heart rate and blood pressure to ensure patient safety. Similarly, reviewing laboratory results is crucial; administering potassium to a patient with elevated levels may lead to further complications. Additionally, before giving PRN medications, assessments of pain levels or sleep patterns are imperative, with the nurse's clinical judgment dictating whether administration is appropriate.

During medication administration, nurses conduct ongoing patient safety assessments. This includes verifying patient identity, checking for allergies, reviewing the medication "rights," and ensuring the patient can safely swallow medications. Any signs of difficulty swallowing, such as coughing or choking, warrant halting administration until further assessment can be made to ensure patient safety.

Following medication administration, nurses continue to assess the patient's response to the medications. This

entails monitoring tolerance, evaluating whether the intended response occurred, reassessing indications for PRN medications, and vigilantly observing for adverse reactions. These postadministration assessments inform clinical decision-making, guiding the nurse on potential changes to the patient's care plan. For example, persistent pain despite pain medication administration may necessitate alternative interventions or medication adjustments. Adverse reactions may prompt discontinuation of the medication and the need for new orders.

Delegation

When delegating medication administration to assistive personnel (if permitted in the state of practice), the nurse must ensure the five rights of delegation: right task, right circumstance, right person, right directions and communication, and right supervision and evaluation. In determining the right task, it is important for the nurse to ensure the assistive personnel has received the appropriate training and has been deemed competent in the skill. In determining the right circumstance, the nurse should consider the patient's circumstances before delegating the task. Instances in which the results are unpredictable, risks are involved, or medication administration challenges are predicted should not be delegated to the assistive personnel. The right person involves delegating the right task to the right person. It is important for the nurse to be aware of which assistive personnel have been credentialed to administer medications and correctly identify the patient to receive the medication. In ensuring the right directions and communication, the nurse should provide clear instructions regarding the task that needs to be completed, when it should be completed, as well as any additional expectations associated with the task. The right supervision and evaluation require the nurse to provide appropriate monitoring, evaluation, intervention, and feedback.

Documentation

Upon completion of administering medications, the nurse is responsible for documenting the medication administration as well as any required postadministration assessments. This step is the one in which the medication administration "rights" of right documentation and right response are verified. To ensure accurate documentation, guidelines have been developed to ensure that only approved abbreviations are used, documentation is timely, and there is adequate evaluation of the patient's response to the medication.

Accuracy of Documentation

Thorough and accurate documentation is critical for clinical decision-making and the delivery of high-quality care. The patient's medical record serves as a communication tool for the interdisciplinary team and is crucial for ensuring continuity of care. Not only does accurate documentation inform the care team of the patient's current situation and allow for treatment decisions to be made, but it also provides legal evidence that may be used in the court of law. Therefore, accurate documentation is needed to provide the very best care and to mitigate risks.

Approved Abbreviations

When documenting medication administrations, it is essential to use only approved abbreviations to avoid potential errors. Agencies should implement standardized abbreviations to ensure consistency and reduce confusion. The ISMP's National Medication Errors Reporting Program highlights numerous error-prone abbreviations linked to medication errors, which should be avoided. TJC's Do Not Use List must be incorporated into organizational policies. For instance, abbreviations for magnesium sulfate ($MgSO_4$) and morphine sulfate (MSO_4) should never be used due to the high risk of significant patient harm. Medication names should typically be spelled out in full to prevent confusion, such as avoiding HCT for hydrocortisone and HCTZ for hydrochlorothiazide.

LINK TO LEARNING

View The Joint Commission's Do Not Use List fact sheet (https://openstax.org/r/77DNUFactSheet).

Dosages should avoid fractions and Roman numerals, as they can be misinterpreted, and proper spacing between drug names, doses, and units of measurement should be maintained to prevent errors. For example, write "Metoprolol 25 mg" with adequate spacing to avoid it being read as "Metoprolol 125 mg." Use commas for numbers greater than one thousand, and use standard measurement units such as mL for milliliters and mcg for micrograms. Routes of administration should be written out in full, though some agencies may allow abbreviations such as PO for oral and IM for intramuscular. Additionally, documenting the administration site for injections is crucial to avoid confusion.

When expressing medication frequency, writing the frequency in full (e.g., daily, at bedtime) is safest, although abbreviations such as Q for *every* may be used with caution. For instance, QD can denote *daily*, but spelling out *daily* is recommended. Symbols are generally not recommended in medication documentation; instead, spell out terms such as *more than* and *less than* rather than using > and <. Similarly, use words such as *increase* and *decrease* instead of directional arrows, and avoid symbols such as @, &, and +, which can be misinterpreted. Using clear and standardized documentation practices is crucial to ensuring safe medication administration.

LINK TO LEARNING

View the ICMP's list of error-prone abbreviations (https://openstax.org/r/77ErrorAbbrev).

Timing of Documentation

Medications should be documented immediately after administration to reduce potential errors and ensure accuracy. This practice minimizes the risk of duplicate administration and can alert clinicians to any changes in the patient's condition. Documenting medication administration prior to actually administering the medication can lead to errors if the patient's condition changes. For instance, a nurse may document an IV medication before administration, only to discover the IV has infiltrated. Similarly, documenting oral medications before administration may be problematic if the patient cannot safely swallow, or if the patient refuses the medication when it is offered. There is also a risk that the nurse might document the administration of the medication but then forget to actually administer it.

Evaluation

After administering medications, it is crucial for the nurse to ensure the medication achieved the intended outcome as part of the nursing process. For instance, the nurse should check if the patient's blood pressure decreased after administering blood pressure medication or if a fever reduced after giving a fever reducer. If the medication does not produce the expected outcome, the nurse should report this to the provider and document the response in the patient's chart.

The timing for evaluating the medication's effect depends on its onset. Typically, oral medications should be assessed within thirty minutes to one hour, whereas IV medications should be evaluated much sooner, usually within five to fifteen minutes, depending on the medication. Nurses should follow their agency's policies for evaluation time frames.

In addition to the intended response, the nurse should document any adverse reactions, including allergic responses. For example, if a rash develops thirty minutes after administering a new medication, the nurse should document this reaction in the MAR and write a progress note detailing the response, including that the provider was notified and any additional orders received. PRN medications must also be evaluated, with clear documentation of the indication for the medication and reassessment according to its onset. For instance, pain assessments should be conducted thirty minutes to one hour after administering oral pain medications and within ten to fifteen minutes after administering IV pain medications.

Education

Educating patients about their medications is crucial for ensuring they understand the purpose, dosage, and potential side effects of their prescribed drugs. Nurses should explain how and when to take the medication, any dietary or activity restrictions, and the importance of adhering to the prescribed regimen.

Nurses should also explain what patients can expect with medication administration. This includes potential immediate effects, how long it might take for the medication to start working, and any common side effects they should watch for. Nurses should inform patients about signs of adverse reactions that would require contacting their healthcare provider. It is also important to teach patients how to administer their medications safely and effectively, demonstrating the proper techniques for the administration route.

Educating patients empowers them to take an active role in their own health care, promotes adherence to treatment plans, and enhances overall health outcomes. Nurses should also assess the patient's understanding and readiness to learn, tailoring their educational approach to meet individual needs and ensuring that the patient or caregiver can

correctly follow the medication regimen independently. Providing written materials or resources can help reinforce this information.

PATIENT CONVERSATIONS

Educating a Patient on Nasal Sprays

Nurse: Good morning, Mrs. Yang. I see here that your provider has prescribed a nasal spray for your congestion. Have you used one before?

Patient: Yes, I've used nasal sprays in the past, but it has been a while.

Nurse: No problem, I'll walk you through it. Nasal sprays are liquid medications that you spray into your nostrils to help clear congestion and reduce inflammation in your nasal passages.

Patient: How many times should I spray it?

Nurse: Your prescription indicates that you should administer one spray in each nostril once a day. It's important not to exceed this dosage unless instructed otherwise by your provider.

Patient: Got it. How do I use it?

Nurse: Before using the nasal spray for the first time, you'll need to prime the bottle. To do this, you'll pump the spray bottle a few times until you see a fine mist. Once it's primed, tilt your head slightly forward, insert the nozzle into one nostril, and point it toward the back of your head, away from the center of your nose. As you spray, inhale gently and then repeat the process for the other nostril.

Patient: Should I blow my nose before or after using the spray?

Nurse: It's best to blow your nose gently before using the spray to clear any excess mucus. Afterward, try to avoid blowing your nose for a few minutes to allow the medication to be absorbed properly.

Patient: Okay, that makes sense. Thank you for your help.

Nurse: You're welcome, Mrs. Yang. If you have any other questions or concerns, don't hesitate to ask.

Reporting Errors

Nurses are legally responsible for ensuring safe and accurate administration of medications and may be held liable for medication errors. When a medication error occurs, the nurse's first responsibility is to ensure the patient's safety by immediately monitoring the patient for any adverse effects and providing necessary interventions. Following this, the nurse must notify the appropriate healthcare team members, including the nurse manager (and/or charge nurse) and the prescribing provider, to ensure timely corrective measures are taken. Documentation of the error is also essential, often in the form of an incident report. This report should detail the nature of the error, the patient's response, and any actions taken. The aim of reporting is not to assign blame but to identify and address potential system-wide issues, contributing to a culture of safety within the healthcare environment. By reporting medication errors, nurses play a vital role in preventing future errors, enhancing patient safety, and fostering continuous quality improvement in healthcare settings.

The nurse is also legally responsible for delegated tasks. Some states may allow the nurse to delegate medication administration to unlicensed assistive personnel (UAP) (Carder & O'Keeffe, 2016). In these instances, the nurse is responsible for supervising the UAP throughout the medication administration process. Although some tasks may be delegated to the UAP, the nurse remains responsible for the assessment, planning, teaching, evaluation, and nursing judgment associated with the administration of medications.

Summary

11.1 Medication Orders

Different types of medication orders include routine orders, one-time orders, standing orders, STAT orders, PRN orders, and titration orders, each with specific indications for nursing practice. Routine orders are continuously followed until canceled, whereas one-time orders are for a single dose. Standing orders allow nurses to intervene promptly without waiting for provider orders, and STAT orders are administered urgently. PRN orders are used as needed for specific symptoms, and titration orders involve dose adjustments based on patient status.

The components of a medication order are crucial elements that ensure safe and effective medication administration. They include specific patient identifiers such as name and date of birth; details about the prescribed drug including its name, dosage, and route of administration; and the frequency and timing of administration. Additionally, the order must include the date and time it was written, along with the signature of the prescribing healthcare provider, to authenticate the order and ensure accountability.

11.2 Fundamental Principles of Medication Administration

To reduce the risk of medication errors, several safety measures should be implemented during medication administration. These measures include ensuring correct patient identification, checking medication orders for errors, maintaining a safe environment, and monitoring for adverse reactions. Adverse reactions are unwanted and unpredictable effects of drugs that can be influenced by various factors, including age, sex, genetics, and underlying conditions. Severe allergic reactions, such as anaphylaxis, require immediate medical attention. Drug toxicity, resulting from an accumulation of a drug in the body, can cause significant harm and must be promptly addressed. Tolerance, drug interactions, and paradoxical effects also play a crucial role in medication safety, necessitating thorough monitoring and appropriate interventions. An interdisciplinary approach involving nurses, providers, and pharmacists can further minimize errors by verifying safety at multiple checkpoints. Organizations such as the ISMP and TJC provide guidelines and standards to support these measures, including lists of high-alert medications and recommended abbreviations.

Nurses play a crucial role in ensuring patient safety during medication administration by adhering to the rights of medication administration, including confirming the right patient, drug, route, time, and dose. Additional rights recommended by the American Nurses Association (ANA), such as right reason, documentation, and response, further enhance safety and accountability. Bar Code Medication Administration (BCMA) is utilized to minimize errors by electronically confirming medication administration rights through barcode scanning. Nurses must also verify patient history, assess for drug interactions, provide education, and respect the patient's right to refuse medication, ensuring comprehensive medication safety and adherence to ethical standards.

11.3 The Medication Administration Process

The practice of medication administration in nursing involves various routes such as oral, intradermal, subcutaneous, intramuscular, intravenous, ophthalmic, otic, nasal, inhalation, vaginal, and rectal, each requiring specific techniques for effective delivery while minimizing adverse reactions. Oral medication administration, typically via tablets or liquids, involves assessing patient safety, verifying medication orders, positioning the patient, and ensuring proper swallowing and absorption. Intradermal injections, used for skin testing and local medications, require careful site selection, skin assessment, and slow injection to create a wheal. Subcutaneous injections, commonly used for insulin and vaccines, demand aseptic technique, proper site selection, skin pinching, and slow, steady injection. Intramuscular injections, for slow drug release or digestive system bypass, necessitate aseptic technique, appropriate needle selection, muscle assessment, and aspiration to avoid blood vessels. Intravenous administration delivers medications directly into the bloodstream, requiring meticulous asepsis, vascular assessment, and monitoring for adverse reactions. Ophthalmic, otic, nasal, inhalation, vaginal, and rectal routes demand similar attention to hygiene, patient positioning, medication preparation, and administration techniques to ensure safety and efficacy, emphasizing patient education and comfort throughout the process.

Nurses are integral to the safe and effective administration of medications, ensuring optimal patient outcomes through thorough assessment, careful delegation, accurate documentation, evaluation of medication efficacy, patient education, and diligent error reporting. Assessment is conducted before, during, and after medication

administration, encompassing aspects such as the patient's ability to swallow, vital signs, and allergy checks. Delegation involves ensuring the right task, person, circumstance, communication, and supervision. Documentation is crucial for verifying medication administration "rights" and ensuring accurate records of patient responses. Nurses also play a vital role in evaluating medication efficacy and educating patients while actively reporting errors to promote patient safety and continuous quality improvement.

Key Terms

adverse reaction an unwanted and undesirable effect of a drug
allergic reaction an immune system response to a drug
anaphylaxis a rare, life-threatening reaction to a drug
apothecary system a system of measurement that utilizes fractions as a part of the whole to measure weights and volumes
aspirate to pull back on the plunger to assess for blood return
buccally between the cheek and gum
capsule a powder or granules contained in a gelatin shell
catheter a small hollow tube placed in a vein
computerized provider order entry (CPOE) a patient order that the provider submits electronically
dependence a condition in which a patient depends on the drug in order to function
drug interaction a drug reaction with another drug, food, supplement, or medical condition
drug toxicity the degree to which a drug can be poisonous or harmful to the body
dysphagia difficulty swallowing
ear drop liquid medication applied into the ear canal
enteric-coated tablet a tablet covered in a substance that delays the medication from dissolving
extravasation the infiltration of damaging IV medications into the extravascular tissue around the site of infusion
eye drop liquid medication intended for use in the eye
gauge the diameter of the hole in a needle
household system a system of measurement utilizes everyday household items, such as measuring cups and tablespoons, to serve as the measuring device
infiltration the leakage of IV fluid into surrounding tissue as a result of the tip of the catheter slipping out of the vein.
inhaler a pocket-sized device that delivers medications into the lungs without the use of electricity
intradermal (ID) occurring within the dermis layer of the skin, just below the epidermis
intramuscular (IM) occurring within the muscle tissue
medication order a prescription ordered within clinical practice
metered-dose inhaler (MDI) a device that uses electricity to create an aerosolized mist of medication that is inhaled into the lungs
metric system a decimal-based system based on units of ten
nasal relating to the nose or nostrils
nebulizer a small electric or battery-powered machine that delivers a fine mist of liquid medications
ointment greasy semisolid that uses body warmth to melt into tiny drops
one-time order medication to be administered just one time
ophthalmic relating to the eye
otic relating to or located near the ear
paradoxical effect an effect of a drug that is opposite from the intended effect
patency the state of being open and unobstructed
phlebitis inflammation of a vein
PRN order a medication order that is administered as needed
rectal relating to or affecting the rectum
routine order a medication order that is continuously followed until canceled
side effect a predictable, undesirable effect related to a drug
spacer a clear tube that fits between the inhaler and the mouthpiece, allowing the medication to move into the spacer for the patient to inhale more slowly and with control
standing order a standardized order that may be implemented under certain circumstances

STAT order a medication order that is urgent or requires immediate action
subcutaneous (SQ) relating to or affecting the fatty tissue layer just beneath the skin
sublingually under the tongue
tablet powder or granules compressed into a pill shape
timed-release consisting of or containing medication that is released in small amounts over time for prolonged action
titration order a medication dose that is either progressively increased or decreased by the nurse in response to the patient's status
tolerance a decrease in the effectiveness of a drug over time due to repeated use
vaginal relating to or affecting the vagina
wheal a small, raised, and usually pale bump that forms at an injection site

Assessments

Review Questions

1. What medication order type allows the nurse to administer medications for pain, nausea, or vomiting without waiting for a provider's order?
    a. one-time order
    b. standing order
    c. PRN order
    d. STAT order

2. The provider has requested a medication to be given as quickly as possible. What medication order type would the nurse expect to be ordered?
    a. one-time order
    b. standing order
    c. PRN order
    d. STAT order

3. The nurse receives an order for "Ibuprofen (Advil) 400 mg every four hours." What action should the nurse take?
    a. Administer the medication to the patient.
    b. Call the pharmacy to clarify the order.
    c. Call the provider to clarify the order.
    d. Assess if the patient has a headache.

4. The provider writes an order for "Amoxicillin 500 mg PO QID." What is the correct interpretation of "QID"?
    a. once daily
    b. every four hours
    c. every hour
    d. four times daily

5. During medication administration, how should the nurse confirm the medications are for the right patient?
    a. Ask the patient to state their full name and compare the name given to the name on the patient's armband.
    b. Ask the patient to state their full name and birth date, comparing the information to the MAR and the patient's armband.
    c. Ask the patient to state their full name and room number, comparing the information to the MAR and the patient's armband.
    d. Ask the patient to state their last name and birth date, comparing the information to the MAR and the patient's armband.

6. The patient is prescribed warfarin (Coumadin) to prevent blood clots and is instructed not to consume large amounts of green leafy vegetables. These instructions are provided to prevent which potential adverse

reactions?
   a. allergic reaction
   b. drug interaction
   c. paradoxical effect
   d. toxic effect

7. The five core "rights" of medication administration should be checked at three different checkpoints during the medication administration process. What are the three medication checkpoints?
   a. when obtaining, preparing, and documenting the medication
   b. when preparing, administering, and disposing of the medication
   c. when obtaining, preparing, and administering the medication
   d. when preparing, administering, and documenting the medication

8. A new medication order is placed by the provider. Upon verifying the order, the nurse realizes the patient is allergic to the drug. Which patient "right" is the nurse concerned about in this scenario?
   a. right patient
   b. right drug
   c. right dose
   d. right route

9. What does a "paradoxical effect" mean in medication administration?
   a. The drug has no effect at all.
   b. The drug causes the opposite of the intended effect.
   c. The drug causes an allergic reaction.
   d. The drug's effect is exactly as intended.

10. The nurse is preparing to administer eye drops. What is the appropriate procedure for administering eye drops?
   a. Instruct the patient to keep their eyes closed for thirty seconds.
   b. Place the eye drop in the inner canthus of the eye.
   c. Press one finger against the inner canthus of the eye after administering the eye drop.
   d. Wipe dirt and debris away from the eye from the outer canthus to the inner canthus.

11. The nurse is preparing to administer a nasal medication. How should the patient be positioned?
   a. lying down with the head tilted toward the affected side
   b. lying down with the head tilted toward the unaffected side
   c. sitting with the head tilted backward
   d. sitting with the head tilted forward

12. The nurse is administering an intradermal injection. What is the proper technique for administering ID injections?
   a. Hold the syringe at a 10- to 20-degree angle from the site.
   b. Administer using a 22- to 24-gauge needle.
   c. Hold the syringe at a 10- to 15-degree angle from the site.
   d. Administer using a 20- to 22-gauge needle.

13. A patient is ordered an enteric-coated medication PO (by mouth) TID (three times a day); however, the patient is having difficulty swallowing the tablet. What action should the nurse take?
   a. Contact the prescribing provider to discuss alternatives.
   b. Divide the tablet in half using a pill splitter.
   c. Dissolve the tablet in a small amount of liquid.
   d. Crush the tablet and place it in applesauce.

Check Your Understanding Questions

1. What are the required components of a complete medication order?
2. What three systems of measurement are commonly used for medication dosing? Which system of measurement is the most accurate?
3. What are the eight rights of medication administration as recommended by the ANA?
4. List three safety measures that should be implemented when administering medications.
5. What is the purpose of using tall man lettering in medication names?
6. What is the appropriate needle gauge and length to use for an SQ injection?
7. A medication is ordered sublingual. How should the nurse administer the medication?
8. Describe the process for administering oral medications.
9. Explain the importance of using approved abbreviations in medication documentation.

Reflection Questions

1. Consider the importance of understanding different types of medication orders in your nursing practice. How does this knowledge contribute to patient safety?
2. Imagine a patient had an adverse reaction to a medication you administered. How would you respond?
3. Why should the patient's room number not be used for identification purposes?
4. While opening the package, the medication falls on the floor. What should the nurse do?
5. Discuss the challenges you might face when delegating medication administration tasks to UAP.

What Should the Nurse Do?

1. You are in the exam room with the patient and provider and hear the provider mention placing an order for an antibiotic. When you review the medication order, you notice the route is missing. What should you do?
2. You come across a medication order with an abbreviation that is not recognized and is not listed in any medication reference guide. What should be your next course of action?

Mr. Hammad, a 65-year-old male, complains of a headache. Upon looking at his chart, you notice the medication orders:

- Ibuprofen 800 mg PO Q6 hours PRN pain
- Tylenol 500 mg PO Q6 hours PRN pain

3. Which medication should the nurse administer?
4. What should the nurse do if the medication label does not match the medication order?
5. What steps should the nurse take if the patient refuses to take the prescribed medication?
6. While administering ophthalmic medications, the nurse drops the lid to the eye drop medication bottle on the floor. What should the nurse do?
7. What should the nurse do if a patient experiences difficulty swallowing during medication administration?
8. What should the nurse do if a medication error occurs?

Competency-Based Assessments

1. Create a table that outlines the various types of medication orders (routine orders, one-time orders, standing orders, STAT orders, PRN orders, and titration orders). Provide a description of the order type, when it may be used, and examples for each order type.
2. Outline how you would confirm the "right patient" before medication administration.

3. Create a presentation describing the nurse's role in assessing a patient before, during, and after medication administration.
4. Draw a diagram displaying the appropriate angles for intradermal, subcutaneous, intramuscular, and intravenous medication administration.

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CHAPTER 12
Assessment: Recognizing Cues

FIGURE 12.1 Nursing assessments are the foundation for efficient and effective patient-centered care. (credit: "Combat Nurses" by Tech. Sgt. D. Clare/U.S. Air Force, Public Domain)

CHAPTER OUTLINE

12.1 The Nurse's Role in Assessment
12.2 Types of Assessment
12.3 Collection of Assessment Data
12.4 Cognitive Process for Analyzing Assessment Data

INTRODUCTION It is a familiar scene that happens countless times each day: a nurse assesses a patient. The information collected about the patient's health will enable the care team to identify potential problems, diagnose the likely causes, and plan appropriate treatments. At one moment, the nurse may use a specific tool to assess a specific part of a patient's body, for example, an otoscope to check this patient's ears. However, the exam room contains numerous other assessment tools and sources of important information that the nurse needs to pay attention to, including the patient and family members or caretakers who have accompanied them. This chapter explores assessment, from the patient's initial examination to the diverse skills nurses use in gathering data and determining care priorities.

12.1 The Nurse's Role in Assessment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the primary focus of a nursing assessment
- Explain the domains of the nursing assessment
- Identify how to conduct assessments with clinical reasoning

The systematic and dynamic process of collecting and analyzing data about a patient's health is called **assessment**, and it forms the cornerstone of patient care (American Nurses Association, n.d.). In essence, the nursing assessment is a comprehensive approach to understanding a patient's health status. The process aims to identify the needs and concerns of patients, serving as the foundation for subsequent nursing care plans. A nursing assessment is not just an evaluation of physical symptoms—it encompasses a broader perspective that includes psychological, sociocultural, and environmental factors influencing a patient's well-being.

In every assessment, nurses must decipher a complex array of information. They must sift through various data points, from clinical signs and laboratory results to the patient's expressed concerns and behaviors. This process requires technical knowledge, expertise, and a keen sense of empathy and intuition. The goal is to create a holistic picture of the patient's health, enabling nurses to prioritize care and interventions effectively.

Primary Focus of a Nursing Assessment

The primary focus of nursing assessment is to gather comprehensive and accurate information about a patient's health status, including physical, psychological, social, and environmental factors. First, nurses gather detailed health histories encompassing past illnesses, surgeries, medications, allergies, and family medical backgrounds. Subsequently, a thorough physical examination is performed to evaluate vital signs, general appearance, skin condition, cardiovascular and respiratory functions, neurological status, and body systems. Psychosocial assessment is crucial, revealing a patient's mental health status, emotional well-being, coping mechanisms, support systems, cultural beliefs, and socioeconomic factors. Functional assessment evaluates the patient's ability to perform daily activities and mobility, while nutritional assessment delves into dietary habits, nutritional status, and related concerns. Pain assessment is fundamental, examining pain presence, intensity, duration, and impact. Medication review ensures accurate reconciliation and identifies potential drug interactions. Risk assessment aims to pinpoint safety concerns, and collaboration with the healthcare team facilitates comprehensive care planning. The nursing assessment is the foundation for developing an individualized care plan and effective nursing care.

To conduct a thorough and accurate assessment, nurses must recognize the signs of apparent physical health issues, such as high blood pressure or mottled skin, as well as the more subtle indicators that may suggest underlying problems. For example, a patient might mention specific sources of stress or allude to a family history of a particular condition. It is essential to recognize that assessment is an ongoing, dynamic process. Nurses continuously collect data, assess patient responses, and adapt care plans as the patient's condition progresses. This proactive approach ensures that care remains responsive and tailored to evolving patient needs.

Evaluate Patient's Response to Impaired Health

When evaluating a patient's response to impaired health, nurses consider the effect of health issues on the patient's overall well-being. The nurse must look at physical symptoms and assess how these symptoms affect the patient's mental and emotional health. For example, a patient recovering from surgery might show signs of depression or anxiety. A patient with chronic arthritis might experience reduced mobility, leading to feelings of frustration or dependency; they may experience social isolation or financial strain due to an inability to work. All these concerns are as important to address as the physical aspects of recovery.

A critical component of this evaluation is understanding the patient's resilience and coping mechanisms. This part of the assessment might include identifying a patient's support networks, such as family or community resources, or the use of coping strategies like meditation or exercise to manage pain. Nurses assess these factors to provide holistic care, which encompasses the physical, psychological, emotional, and spiritual dimensions of an individual patient.

Evaluate Basic Human Needs

Evaluating basic human needs is a fundamental component of the nursing assessment. This concept, rooted in theories such as Maslow's hierarchy of needs, suggests there are fundamental needs that must be met for a person to achieve optimal health. These needs include physiological requirements, safety and security, love and belonging, self-esteem, and self-actualization (McLeod, 2018). Maslow's hierarchy is discussed in greater detail in 12.3 Collection of Assessment Data.

Nurses primarily concentrate on assessing their patients' physiological needs, particularly in the initial stages of the assessment. They must thoroughly review factors such as nutrition, hydration, breathing, circulation, sleep patterns,

and pain management. Nurses assess these factors to ensure that a patient's fundamental health requirements are being met, which is crucial for recovery and stability. For example, a patient with diabetes requires careful monitoring of dietary intake and blood sugar levels, addressing their physiological need for homeostasis.

Safety and security also play a role in assessment. In particular, nurses seek to identify environmental or personal factors that might pose risks to a patient's health. For instance, in cases of malnutrition, nurses must address the patient's immediate dietary needs as well as explore potential causes like food insecurity or disordered eating. If these significant contributors are not addressed, the patient will continue to struggle with malnutrition.

REAL RN STORIES

Assessing Basic Human Needs as Part of the Nursing Assessment

Nurse: Leonard, RN
Clinical setting: Medical-surgical unit
Years in practice: 11
Facility location: Las Vegas, Nevada

I was working on a busy medical-surgical unit when I encountered a patient admitted for exacerbation of congestive heart failure. Upon initial assessment, it was evident the patient was experiencing significant difficulty breathing. They also exhibited anxiety and appeared fatigued. Since assessing basic human needs is important, I began my assessment by prioritizing the patient's physiological needs.

First, I made sure the patient's airway was clear and that oxygen therapy was initiated to improve oxygenation. While addressing the physiological aspect, I also recognized the patient's psychological needs, as evidenced by their anxious demeanor. I engaged in therapeutic communication with the patient, offering reassurance and support to alleviate their anxiety. I also assessed the patient's nutritional status and hydration, recognizing the importance of meeting these basic needs for their overall well-being and recovery. I collaborated with the dietitian to ensure the patient received dietary modifications and adequate hydration as appropriate for their medical condition. I also considered the patient's sociocultural needs, acknowledging their religious beliefs and preferences regarding care. I facilitated spiritual support by arranging for a visit from the hospital chaplain, who provided emotional and spiritual guidance to the patient and their family.

Throughout the patient's hospital stay, I continually reassessed their basic human needs, adjusting interventions as needed to promote healing and comfort. By holistically addressing the patient's physiological, psychological, and sociocultural needs, I provided comprehensive care that contributed to their recovery and well-being.

Actual Problems

In the context of nursing assessment, an **actual problem** refers to current health issues that are identifiable through a patient's symptoms or clinical evidence. They are the immediate concerns that the patient presents with and require prompt attention. The nurse's role is to accurately assess these concerns, document them, and initiate appropriate interventions (Ajibade, 2021).

Accurate identification of actual problems is crucial, as it forms the basis of the care plan and interventions. For example, when assessing a patient with respiratory distress, the nurse would note symptoms like shortness of breath, then check the patient's oxygen saturation levels and respiratory rate and listen to their lung sounds. This thorough evaluation allows the nurse to determine the severity of the problem and the urgency of the required care.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: Assessing a Patient's Pain Level

The nurse is providing care to a patient who is recovering from a recent surgery. When conducting an assessment, the nurse would gather data through observation and patient communication, noting the presence of pain behaviors such as grimacing, guarding of the surgical site, and verbal expressions of discomfort. The nurse would also assess the patient's pain level using a standardized pain scale.

On assessment, the nurse notes the presence of redness, swelling, and tenderness at the surgical incision site. The patient reports pain intensity of eight out of ten on the numerical pain scale. The pain significantly affects their ability to perform activities of daily living and rest comfortably.

Based on this assessment data, the nurse identifies "Acute Pain related to surgical incision" as an actual problem requiring nursing intervention.

Potential Problems

A **potential problem** includes a risk or condition a patient is susceptible to but is not currently manifesting symptoms of. A nurse's ability to foresee these issues is critical to preventive care. If not properly monitored and addressed, potential problems could become actual problems (Gaines, 2023). For example, a bedridden patient is at risk of developing pressure ulcers. Even if the ulcers are not present at the time of assessment, the nurse must recognize the risk and implement preventive measures like regular repositioning and skin assessments. Similarly, a patient with a history of falls requires a thorough assessment to identify any risk factors present, such as medication side effects or environmental hazards, to prevent future incidents. Identifying and addressing potential problems is a key aspect of proactive nursing care.

CULTURAL CONTEXT

Ethnicity and Genetic Predisposition in Nursing Assessments

Ethnicity and genetic factors can significantly impact a patient's risk for certain health conditions. However, nurses should always remain sensitive to individual variations and avoid stereotyping, ensuring that each patient's care is informed by their unique health profile and needs. Nurses must be aware of the predispositions common to their patients, otherwise assessments might miss potential problems. Here are a few examples:

- Individuals of Black ancestry are known to have a higher risk of hypertension, stroke, and type 2 diabetes. Tailoring assessments to these risks involves closely monitoring blood pressure and blood sugar levels and educating patients about the importance of lifestyle factors in managing these conditions (American Heart Association, n.d.).
- Individuals of South Asian descent often have an increased risk of heart disease, including myocardial infarction, at a younger age. Nurses should consider early cardiovascular screenings and discussions about heart health for patients in this demographic (Pursnani & Merchant, 2020).
- Individuals of Ashkenazi Jewish descent are more susceptible to certain genetic conditions, such as Tay-Sachs disease, and certain types of breast cancer (*BRCA1* and *BRCA2* mutations). Nurses should be aware of these risks when assessing symptoms and collecting family health histories (Levy, 2023).
- There is a heightened prevalence of type 2 diabetes in individuals of Hispanic and Latin American descent. Nurses should prioritize diabetes screening and provide culturally appropriate dietary and lifestyle education (Centers for Disease Control and Prevention, 2022).
- Individuals of American Indian descent have higher rates of death from several diseases, including heart disease, liver disease, and stroke. Assessments should include screenings for these conditions and discussions about preventive health measures (Indian Health Service, 2019).

By incorporating knowledge of specific predispositions into assessments, nurses can more effectively identify potential health risks within specific patient populations. This approach enables early intervention and personalized care planning, improving health outcomes for diverse patient populations.

Domains of the Nursing Assessment

To provide holistic care, the nurse must give each patient a comprehensive assessment covering all health domains, including physical, psychosocial, emotional, and spiritual (American Nurses Association, n.d.). These domains represent different aspects of a patient's well-being, and each plays a crucial role in determining how best to address their needs. Consider a patient with a history of cardiovascular disease who is complaining of shortness of breath and chest pains. A thorough assessment would likely begin by noting these physical symptoms, but the nurse would then need to assess the other domains to get a complete picture of the patient's health.

Physical

The physical domain of the nursing assessment involves a systematic examination of the body. To thoroughly assess a patient's physical health status, the nurse will focus on various aspects of the patient's anatomy, physiology, and functioning. Nurses begin by measuring vital signs, such as temperature, blood pressure, pulse rate, and respiratory rate, to assess the patient's physiological status. They observe the patient's general appearance, including skin color, hydration status, body posture, and grooming, which may provide valuable insights into overall health. A head-to-toe assessment follows, with nurses examining each body system, assessing the skin for abnormalities, auscultating heart and breath sounds, evaluating neurological status, and assessing musculoskeletal function. Additionally, they thoroughly examine the gastrointestinal (GI) and genitourinary (GU) systems, along with the lymphatic and endocrine systems, for any signs of dysfunction or irregularities. This comprehensive assessment allows nurses to identify any abnormalities or areas of concern, guiding interventions to promote optimal health and well-being. By focusing on the physical domain of assessment, nurses gather essential data to inform diagnosis, treatment planning, and ongoing patient care, ensuring holistic and individualized care delivery.

For example, a physical assessment for a patient with signs of cardiovascular disease would include measuring blood pressure, heart rate, and oxygen saturation. The nurse would also perform a cardiac examination, listen to the heartbeat to detect murmurs or irregularities, and inspect the patient's extremities for signs of poor circulation, such as edema or cyanosis. The nurse might also review the results of diagnostic tests, such as electrocardiograms (ECGs) or lipid profiles, to corroborate physical findings and obtain information that will help them determine the severity and specific characteristics of the patient's condition.

Psychosocial

The psychosocial domain includes both psychological and social components of mental health. This domain of nursing assessment delves into the patient's mental, emotional, and social well-being, recognizing the interconnectedness between psychological and social factors and how they affect health.

Nurses employ a holistic approach to gathering information about a patient's mental health status, emotional state, coping mechanisms, social support network, and cultural beliefs and values. Again, therapeutic communication and active listening help nurses establish rapport with patients, creating a safe and supportive environment for open expression of thoughts and feelings. The nurse comes to understand the patient's perception of their illness, their level of distress or anxiety, and their ability to cope with stressors. Additionally, nurses consider the patient's social context, including family dynamics, living situation, and socioeconomic factors, which may influence their health and treatment outcomes. By addressing psychosocial factors in nursing assessment, nurses can identify potential barriers to care, provide emotional support and counseling, and facilitate referrals to appropriate resources such as social services or mental health professionals.

To continue the previous example, the nurse would likely assess the patient's understanding of their condition, mental state, and any stressors that might exacerbate their symptoms of cardiovascular disease. Assessment questions might explore the patient's support network, occupation, lifestyle, and coping mechanisms. For example, a patient experiencing high stress at work or lacking a reliable support network may be at increased risk for a heart attack. The nurse might use validated tools such as the **Holmes-Rahe Life Stress Inventory** to measure the stress level experienced by an individual based on the occurrence of certain life events within a specified period, to quantify the patient's stress levels and guide interventions, such as educating them about stress management techniques or connecting them with support groups (American Institute of Stress, 2023).

LINK TO LEARNING

The Holmes-Rahe Life Stress Inventory (https://openstax.org/r/77holmesrahe) instructs patients to identify potentially stressful life events they have experienced in the past year, such as the death of a family member, a pregnancy, a vacation, or a legal problem. Each event is assigned a certain number of points. Patients who score higher on the inventory are experiencing more stress and are therefore more likely to experience a health problem in the near term.

Emotional

The emotional domain of the nursing assessment requires the nurse to observe the patient's demeanor and emotional responses regarding their health condition. Distinguishing between psychological and emotional needs, psychological needs encompass broader aspects of mental well-being such as cognition, behavior, and self-perception, while emotional needs focus specifically on feelings and expressions associated with experiences, including the need for validation, support, and empathy in response to emotional states. To elicit these responses, the nurse typically asks open-ended questions. The nurse will also employ empathetic communication and active listening skills to create a supportive environment where patients feel comfortable expressing their emotions and concerns. Through therapeutic interactions, the nurse can assess the patient's emotional responses to their illness or injury, including fear, anxiety, sadness, or frustration.

Another tool in the nurse's arsenal is screening for common mental health disorders, such as depression and anxiety, for which they can use standardized assessment tools as available and appropriate. Conducting screenings helps nurses identify patients who may require further evaluation or intervention from mental health professionals.

To continue with the example, the nurse might ask how the patient feels about their risk of heart attack and listen for signs of anxiety, depression, or other emotional responses. The nurse would also observe nonverbal cues, such as body language or facial expressions, to gauge emotional state. Tools such as the **Beck Depression Inventory**, a widely used self-report questionnaire designed to assess the severity of depression symptoms, may be used for more structured emotional assessment (American Psychological Association, 2020).

LINK TO LEARNING

The Beck Depression Inventory (https://openstax.org/r/77beckdepress) consists of twenty-one questions relevant to the patient's feelings of optimism and self-esteem.

Effective communication skills help nurses encourage patients to express their concerns and fears. For instance, a patient who is anxious about their condition may need reassurance and information about their treatment plan, and providing that information can alleviate anxiety and improve compliance with medical recommendations.

Spiritual

The nurse also needs to assess a patient's spiritual needs, which involves understanding their religious practices, if any. It also explores their beliefs and values concerning their place in the universe, as well as the fundamental meaning and purpose of their life. These beliefs may shape the patient's approach to their health care and preferences about treatment.

The nurse should approach the spiritual assessment with sensitivity and respect for the diverse spiritual and religious backgrounds of patients. It is important to use open and nonjudgmental communication to explore a patient's spiritual beliefs, including their faith traditions, rituals, and sources of spiritual strength or comfort. The nurse will specifically ask about a patient's spiritual needs, such as the desire for prayer, religious rituals, or pastoral support, to ensure that these aspects of care are incorporated into the patient's treatment plan, if desired. The nurse will also need to understand how the patient's spiritual beliefs influence their coping mechanisms, resilience, and sense of meaning and purpose in life.

The nurse could start this conversation by asking the patient open-ended questions, such as the following:

- Please tell me about your spiritual and religious preferences.
- Please tell me about your religious practices that may impact your health care.
- How does your faith or spirituality help you cope with challenges?
- How important is your faith in your health and healing process?
- How would you describe your connection to a religious or spiritual community?
- How does your community support you during difficult times?

The **Faith, Importance and Influence, Community, and Address (FICA) tool**, a tool used by healthcare professionals to assess patients' spiritual and religious beliefs and practices, provides a more structured approach to understanding a patient's spirituality (GW Institute for Spirituality and Health, 2024).

LINK TO LEARNING

The FICA tool is a framework used by healthcare professionals, including nurses, to assess and address the spiritual needs of patients. FICA stands for the following:

- faith, belief, meaning
- importance and influence
- community
- address/action in care

More information about FICA (https://openstax.org/r/77infoFICA) is provided at this website, including a free download of the tool.

Conducting Assessments

Nursing assessment is a critical skill that requires **clinical reasoning**, a structured, thoughtful approach that synthesizes a nurse's knowledge and experience with patient data to determine an appropriate response to a medical problem (Gruppen, 2017). An effective assessment is not just about collecting data; it involves collecting the right data in the right way. Data should be purposeful, prioritized, complete, systematic, accurate, and significant, and the nurse should ensure that documentation follows established standards and guidelines. We explore each of these aspects in the context of a patient presenting with signs of cardiovascular disease.

Purposeful

A purposeful assessment involves conducting evaluations with specific goals in mind. Before beginning an assessment, nurses clearly define the objectives they aim to achieve, such as identifying symptoms, assessing responses to treatment, or evaluating progress toward therapeutic goals.

Purposeful assessments help focus attention on relevant information, leading to more efficient use of time and resources. For example, when caring for a patient with potential heart disease, the nursing assessment would be specifically tailored to look at the function of the patient's cardiovascular system. In addition to physical tests, the nurse would take the patient's personal and family history of previous heart conditions and identify any relevant lifestyle factors, such as smoking or exercise habits. This targeted approach ensures that the information gathered is directly relevant to the patient's current health concerns.

Prioritized

Prioritizing assessments is how the nurse arranges for the most urgent and essential aspects of a patient's condition to be addressed first. Nurses must triage assessments based on the patient's immediate needs, severity of symptoms, and potential risks. For a patient with cardiovascular risk, priority might be given to evaluating the intensity of their chest pain, asking about shortness of breath, and identifying other signs of an imminent heart attack, such as lightheadedness or nausea. Such prioritization is critical in acute settings where timely interventions can be lifesaving.

Complete

A complete assessment covers relevant aspects of the patient's health. This includes gathering information about physical, psychological, social, and environmental factors that may affect the patient's well-being. Nurses must consider the patient's medical history, current symptoms, functional status, and risk factors during assessments. For a patient with chest pain, the nurse would assess related systems and risk factors, such as blood pressure, lipid profiles, and glucose levels, to create a more comprehensive picture of the patient's current health status.

Systematic

Systematic assessments follow a structured and organized approach, ensuring consistency and reliability in data collection. Nurses should use standardized assessment tools and protocols, when possible, to guide their evaluations. By following a systematic process, healthcare professionals can methodically gather information, identify patterns or trends, and track changes over time. When assessing a patient for cardiovascular disease, for instance, the nurse would follow a set sequence, typically starting with a health history, then a physical examination, and a review of diagnostic tests. This systematic approach promotes thoroughness and reduces the likelihood of

assessment errors or omissions.

Accurate

Accuracy in assessments involves collecting reliable and precise data that reflect the patient's true health status, which is crucial for correct diagnosis and treatment planning. Nurses should use validated assessment techniques and reliable, evidence-based measurement tools to ensure the accuracy of their observations. They should also critically evaluate the quality of information gathered, considering factors such as source credibility, relevance, and consistency. For example, assessing a cardiac patient involves using precise techniques for measuring blood pressure, accurately interpreting heart sounds, and correctly reading diagnostic tests like ECGs. Each nursing assessment needs to be original and not just copied from the previous nurse's assessment to ensure that any changes in the patient's condition are accurately identified. Accuracy ensures the reliability of the assessment data.

Significant

Significance in assessment refers to the importance and relevance of the data collected. The nurse must ascertain the most relevant information for a patient's condition and care plan. Significant assessments help healthcare professionals identify priorities, set goals, and tailor interventions to meet each patient's unique needs. For example, a cardiovascular assessment of a patient may provide the nurse with a wealth of important data, including a history of myocardial infarction or the presence of risk factors like hypertension. Identifying a smoking history would be relevant and significant to the cardiac patient as well as even learning that the patient's favorite snack is a salty food, which may increase fluid retention.

Documentation Follows Standards and Guidelines

Proper documentation in nursing assessments is critical for ensuring effective patient care and legal compliance. It involves adhering to established protocols and regulations that govern how patient information is recorded and shared. Key aspects of these standards and guidelines include the following:

- Accuracy and completeness: Documentation must accurately and completely reflect the nursing assessment. This means recording all relevant findings, including the patient's statements, observations made during the physical examination, and results from diagnostic tests. Documenting both normal and abnormal findings is essential to provide a full picture of the patient's health status.
- Timeliness: Entries should be made as soon as possible after an assessment to ensure the information is current and accurate. Timely documentation is crucial when a patient's condition changes rapidly, as it can significantly impact subsequent care decisions.
- Confidentiality and privacy: Throughout an assessment, the nurse must adhere to laws and regulations related to patient confidentiality, such as the Health Insurance Portability and Accountability Act (HIPAA), a U.S. law protecting identifiable patient health information and preventing its disclosure without patient consent. These regulations dictate how patient information can be shared and stored, emphasizing the need to protect patient privacy.
- Standardized format: Many healthcare facilities have standardized formats for documenting information, including an electronic health record (EHR), a digital version of a patient's comprehensive medical history. These systems often include templates or checklists that guide nurses in recording specific information, ensuring consistency and completeness in the documentation process, and enabling all members of a patient's care team, including the patient, to easily access the information.
- Legibility and professional language: Documentation should be legible and use professional, nonbiased language. In the case of electronic records, this includes ensuring that entries are typed accurately. Standardized medical terminology and abbreviations are necessary for clear communication among healthcare professionals.
- Legal and ethical considerations: Nurses must be aware of the legal implications of nursing documentation. Inaccurate or incomplete documentation may violate federal or state laws and negatively affect the quality of patient care. Ethically, nurses are responsible for ensuring their documentation reflects an honest and accurate account of the assessment. This documentation also serves as proof of care when legal issues arise.

By following these protocols and regulations, nurses ensure that their documentation is a reliable and useful tool in the patient care continuum. Well-documented assessments aid in clinical decision-making, ensure continuity of care, and provide legal protections for both the patient and the healthcare providers (American Nurses Association, 2010).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Enhancing Nursing Assessment Documentation with QSEN Competencies

Streamlining nursing assessment documentation while adhering to Quality and Safety Education for Nurses (QSEN) competencies ensures high-quality patient care. By integrating QSEN competencies into documentation practices, nurses can enhance patient safety, improve care coordination, and promote evidence-based practice. The following is how key QSEN competencies align with effective documentation of nursing assessments:

Patient-centered care:

- Ensure that documentation reflects a patient-centered approach, emphasizing the patient's preferences, values, and goals.
- Include patient-reported outcomes and concerns in the assessment documentation to ensure care plans are tailored to individual needs.
- Document communication with patients and families, including education provided, shared decision-making, and care preferences.

Teamwork and collaboration:

- Document interdisciplinary communication and collaboration regarding assessment findings, care plans, and patient progress.
- Clearly communicate assessment findings and care priorities to other members of the healthcare team through comprehensive documentation.
- Document interprofessional care conferences, consultations, and recommendations to facilitate coordinated care delivery.

Evidence-based practice:

- Ensure assessment documentation is based on evidence-based guidelines, protocols, and best practices.
- Document the rationale behind assessment decisions, interventions, and care plans, referencing current evidence to support clinical decisions.
- Use standardized assessment tools and validated measures to gather and document data systematically and accurately.

Quality improvement:

- Document outcomes of nursing assessments and interventions, tracking progress over time and identifying areas for improvement.
- Use documentation data to identify trends, patterns, and opportunities for enhancing the quality and effectiveness of nursing assessments.

Safety:

- Document safety measures implemented during assessments to prevent adverse events and ensure patient safety.
- Document patient identifiers, allergies, and precautions to prevent medication errors, falls, and other safety incidents.
- Use documentation to report and follow up on safety concerns, near misses, and adverse events, contributing to a culture of safety within the healthcare organization.

Informatics:

- Utilize EHR systems to streamline documentation.
- Leverage telehealth platforms and remote monitoring devices to conduct virtual assessments and monitor patients' vital signs remotely.
- Incorporate mobile health applications and patient portals to empower patients in self-assessment, symptom tracking, and health management.

By aligning documentation practices with these competencies, nurses can enhance the accuracy, efficiency, and effectiveness of nursing assessments, ultimately improving patient outcomes and experiences.

12.2 Types of Assessment

LEARNING OBJECTIVE

By the end of this section, you will be able to:

- Explain the key differences in the types of nursing assessments and when to use each type

Nursing practice demands a dynamic and adaptable approach to patient assessments, as these are not one-size-fits-all tools for data collection. Assessments vary depending on a patient's condition, the clinical setting, and the specific point in the care process. Understanding the different types of assessments is fundamental for nurses, as each type serves a unique and vital purpose in patient care.

This section explores the nuances of various types of assessments and explains when and why each would be appropriate. This knowledge ensures procedural competence as a nurse and enhances critical-thinking and decision-making skills. By understanding the purpose and application of different assessments, nurses are better equipped to respond to the diverse needs of patients, ensuring high-quality care tailored to each individual's situation.

Different Types of Nursing Assessments

At the heart of nursing is the goal of providing patient-centered care. To achieve this goal, nurses utilize a spectrum of assessment techniques tailored to meet the diverse needs of their patients (Table 12.1). These assessments range from initial evaluations, which provide a comprehensive view of the patient's health, to more focused assessments targeting specific health problems. Rapid and targeted assessments are crucial in emergencies to address immediate and life-threatening concerns. In contrast, ongoing and time-lapsed assessments help monitor a patient's progress over time and adjust care plans accordingly (Lloyd-Davies, 2024; Verve College, n.d.).

Type of Assessment	Description	Example of When to Use
Initial	Comprehensive assessment performed on admission or entry	When a patient is admitted to a hospital or clinic
Problem-focused	Assessment focused on a specific problem or complaint	When a patient complains of chest pain or nausea
Ongoing	Continuous assessment performed at regular intervals	During routine rounds or shift changes
Emergency	Rapid assessment conducted in critical or life-threatening situations	When a patient experiences cardiac arrest or trauma
Time-lapsed	Assessment performed after a longer period to compare changes over time	When checking progress after a week of treatment

TABLE 12.1 Types of Assessments

Initial Assessment

The **initial assessment** is the first extensive evaluation of a patient's overall health status. This type of assessment is typically conducted on a patient's admission to a healthcare facility or at the time the patient begins receiving care. The primary goal of the initial nursing assessment is to establish a baseline understanding of the patient's health condition so that any immediate health concerns or problems can be identified. It involves a comprehensive evaluation of the patient's physical condition, medical history, and current symptoms.

Typically, an initial assessment begins with collecting basic demographic information, followed by conducting an in-

depth review of the patient's medical and surgical history. This includes any chronic conditions, medications, allergies, past hospitalizations, and surgeries, as well as the patient's perspective on the issues that brought them to the facility. The nurse also inquires about the patient's lifestyle choices, such as diet, exercise habits, and tobacco or alcohol use, which can significantly impact health. The nurse also investigates social determinants of health (societal and environmental conditions in which individuals live and work), encompassing factors like housing stability, socioeconomic status, access to health care, and social support networks, to gain a comprehensive understanding of the patient's health needs within the context of their environment.

Physical examination forms a significant part of the initial assessment. The nurse conducts a head-to-toe exam to systematically evaluate each body system. This examination includes assessing vital signs such as blood pressure, heart rate, and temperature. The nurse will also observe the patient for signs of distress or discomfort (Nightingale College, 2022).

LINK TO LEARNING

A checklist is a useful tool for ensuring the nurse conducts a comprehensive physical examination. This sample checklist (https://openstax.org/r/77checklist) provided by Nightingale College details the steps in a typical head-to-toe assessment.

The initial assessment sets the stage for all future healthcare interactions and decisions for the patient. It provides a comprehensive view of the patient's health and helps identify any immediate health concerns that need addressing. Even for patients who are healthy and well, this assessment serves as a baseline to which future assessments can be compared to monitor for changes. Effective communication skills are essential, as establishing trust and rapport with the patient is necessary for obtaining accurate and complete information. During this process, the nurse must be attentive, empathetic, and sensitive to the patient's needs and concerns.

Establishing a Complete Database

The initial assessment is also an opportunity to begin compiling a complete database for the patient. This database serves as the cornerstone for all subsequent nursing care and interventions. It includes detailed information about the patient's physical, psychological, and emotional status, which form the basis for developing an individualized care plan.

The process of creating a patient database involves gathering both subjective and objective data. The patient's descriptions of their symptoms, feelings, and perceptions are known as **subjective data**. Subjective data may also include relevant descriptions from friends or family members. The measurable and observable information collected during a physical examination, such as blood pressure, heart sounds, and lung sounds, and any data obtained from lab results are called **objective data** (Lukey, 2023).

In addition to health-related information, a comprehensive dataset includes an assessment of the patient's social and environmental factors, which encompasses family health history, social relationships, cultural background, and environmental factors like living conditions, financial circumstances, and occupational hazards. These elements are crucial in understanding the broader context of the patient's health and wellness.

PATIENT CONVERSATIONS

Conducting an Initial Assessment

Scenario: Mrs. Sanchez, a 64-year-old Mexican American female, has come to a neighborhood clinic complaining of chest pain. After checking the patient's vital signs, Nurse Jordan proceeds with the initial examination.

Nurse: Mrs. Sanchez, you mentioned you were experiencing some chest discomfort. How would you describe the pain you are feeling?

Patient: It's like a heavy pressure, especially when I'm walking.

Nurse: When did you first notice this discomfort?

Patient: About two days ago.

Nurse: Do you have any other symptoms, like shortness of breath, dizziness, or nausea?

Patient: I've felt a little short of breath, but no dizziness or nausea.

Nurse: Thank you for sharing that. It's important information. Have you ever experienced anything like this before?

Patient: No, this is the first time.

Nurse: I see. Let's talk about your medical history. Do you have any chronic conditions like hypertension or diabetes?

Patient: I've had high blood pressure for years. I take medication for it.

Nurse: Tell me the name of your medication, and are you taking it as prescribed?

Patient: It's lisinopril, I think. I take it most days, but sometimes I forget.

Nurse: Forgetting can happen. Is there someone in your household who could support you in remembering to take your medication?

Patient: Actually, I have lived alone since my partner passed away last year. So, there's no one around to remind me.

Nurse: I'm sorry to hear that. It's important to manage your hypertension, especially with your current symptoms. Let's talk about some strategies that could help you remember to take your medication. Some patients find setting a daily alarm on their phone or using a pill organizer helpful. What do you think about these options?

Patient: An alarm might work. I do have a smartphone.

Nurse: Great! Setting an alarm can be a simple, yet effective reminder. Now, about your support network: do you have family, friends, or neighbors who check in on you? Or someone you feel comfortable reaching out to if you need to?

Patient: My daughter lives out of state, but we talk on the phone. My neighbor, Mrs. Omar, has been kind enough to check on me sometimes.

Nurse: It's good to have someone to talk to and check in on you. I would encourage you to keep in regular contact with your daughter and perhaps inform Mrs. Omar about your current health condition, just so she's aware. Having a support system, even if it's not in-house, can be very beneficial.

Problem-Focused Assessment

A **problem-focused assessment** is a targeted examination conducted to assess a specific health issue or symptom identified in a patient. This type of assessment is narrower in scope than an initial assessment and is crucial when a patient presents with new or worsening symptoms. It allows nurses to quickly and efficiently address and monitor specific health concerns.

For example, if a patient complains of acute abdominal pain, a problem-focused assessment would involve evaluating the abdomen, including noting the location, nature, and severity of the pain, as well as any accompanying symptoms like nausea or vomiting. The nurse would also review relevant aspects of the patient's medical history, such as recent surgeries or digestive issues, and check for any changes in vital signs that might indicate a serious underlying problem.

This type of assessment is also key for managing chronic conditions, where it can monitor specific aspects of the patient's health. For example, in patients with heart failure, regular, problem-focused assessments can be used to monitor fluid status and heart function, ensuring that any changes to the patient's condition are caught and treated promptly.

Ongoing Assessments

An **ongoing assessment** is a fundamental subset of problem-focused assessments that involve continuous monitoring and evaluation of the patient's health status, their response to treatment, and any changes in their condition over time. Unlike the initial assessment, which provides a comprehensive snapshot of the patient's health

at a specific point, ongoing assessment is dynamic and occurs over time. Nurses regularly collect and analyze data, including vital signs, laboratory results, and observations of the patient's physical, psychosocial, and emotional status. Ongoing surveillance allows nurses to detect subtle changes or deterioration in the patient's condition promptly, intervene as necessary, and modify care plans to address evolving needs.

When planned at specific intervals, ongoing assessments are critical for patients when regular monitoring is essential for managing a condition, for example, when a patient is recovering from an acute illness or surgery or is living with chronic illness. In a postoperative context, for example, ongoing assessments might include frequent monitoring of wound healing, pain levels, nausea and vomiting, vital signs, and signs of infection.

In acute care settings, such as emergency departments, ongoing assessments ensure timely interventions for patients with rapidly changing conditions. In chronic disease management, such as diabetes, scheduled assessments may include regular monitoring of blood glucose levels, foot examinations, and review of medication adherence. These assessments facilitate the early identification of complications and adjustments in the management plan.

PATIENT CONVERSATIONS

Focused Assessment for Feet in Patients with Diabetes

Scenario: Keiko, an emergency room nurse, is caring for Mr. Strout, who presented with hyperglycemia. Mr. Strout has poorly controlled diabetes mellitus and has not seen a healthcare provider for follow-up for several years because he does not have health insurance. The nurse is assessing the patient and is ready to move on to the foot examination.

Nurse: Mr. Strout, I'd like to take a look at your feet next. Can you take your shoes off, or would you like some help?

Patient: My feet? What do you want to look at them for? I'm here 'cause my sugars are bad.

Nurse: Your feet can actually be affected by diabetes. Is it okay with you if I take a look at them? I'll explain as I go along.

Patient: Well, I guess, if you say so. Could you give me a hand . . . with my feet? Ha!

Nurse: Sure thing.

[The nurse helps Mr. Strout remove his shoes and socks and proceeds with the assessment.]

Nurse: So, what I'm going to look for are signs that there is damage to your feet that could be related to your high blood sugar levels. If there's damage, you may not be getting enough blood and oxygen flowing to your feet. This can lead to things like discoloration or even ulcers. Have you noticed anything like that?

Patient: No, but I don't look at my feet very much, honestly.

Nurse: Do you have any pain or feelings like tingling or numbness?

Patient: Well...now that you mention it, they do feel funny sometimes.

[The nurse continues to closely examine Mr. Strout's feet, looking at the skin and nails for any signs of discoloration, poor healing, or infection. Feeling the feet and pulses gives the nurse an idea of blood flow, and noting any other signs, like an odor, will also be an important part of the assessment. At the same time, the nurse continues to engage with the patient and answer questions and elicit more information about the patient's foot health.]

Nurse: Can you tell me more about what "funny" feels like?

Patient: You know, like TV static in your foot. Like it falls asleep.

Nurse: How often does that happen?

Patient: I don't know, exactly. Once in a while.

Nurse: That feeling comes from your nerves. Sometimes, nerves can get damaged by diabetes too. We call that

neuropathy. And that can be dangerous in any part of your body, but especially in your feet. Please be sure to tell the provider about those feelings in your feet, and I'll make a note in your chart.

Patient: Okay . . . sorry I didn't trim my toenails, didn't think I'd be getting a pedicure today.

Nurse: Do you trim your nails regularly?

Patient: Yup, if I don't, they get all ingrown and hurt.

Nurse: Great habit to get into. Foot hygiene is very important, things like keeping them nice and clean and dry, and trimming your nails, making sure you don't get any fungus . . . that all helps keep them healthy.

Patient: If my sugars don't get better, could I not be able to walk?

Nurse: Diabetic foot problems can be very serious, Mr. Strout. In severe cases, people are in a lot of pain and can't walk. When they get bad infections, they may even need to have a foot amputated.

Patient: Yikes! Well, how do they look? My feet?

Nurse: I don't see any wounds, which is great. But I want you to tell the provider about those tingling feelings. They'll talk to you more about how you can take care of your feet and work on getting those blood sugars under control.

[The nurse will document the findings and make sure to answer any further questions from the patient before completing the assessment.]

Emergency Assessment

An **emergency assessment** is conducted when a patient presents with life-threatening or potentially life-threatening conditions. The goal of emergency nursing assessment is to swiftly identify and address immediate threats to the patient's life or health, initiating appropriate interventions to optimize outcomes and promote patient survival. This type of assessment has a rapid and focused nature and is aimed at identifying and addressing critical health issues promptly. In emergency settings, time is of the essence, and the accuracy of these assessments can have significant implications for patient outcomes.

In critical moments, nurses prioritize the assessment of vital signs and airway, breathing, and circulation (ABCs) to quickly determine a patient's stability and the need for urgent interventions. This assessment may involve assessing the patient's level of consciousness, oxygen saturation, heart rate, blood pressure, and respiratory rate. For example, if a patient exhibits signs of a stroke, the nurse quickly assesses for balance, vision changes, facial drooping, arm weakness, and speech difficulties in a timely manner. Following the primary survey, a secondary survey is conducted to gather more detailed information about the patient's condition and history.

CLINICAL JUDGMENT MEASUREMENT MODEL

Form a Hypothesis: Emergency Pain Assessment

Identifying cues: John, a 62-year-old male, is brought into the emergency department by ambulance after collapsing at home. On arrival, he is unconscious and unresponsive. His wife, who accompanied him, informs the medical team that John has a history of hypertension and diabetes, for which he takes medications regularly. She reports he has been complaining of severe headaches and dizziness for the past week but attributed it to stress from work. She also mentions that he has been increasingly fatigued and has experienced episodes of confusion and blurred vision.

Analyzing cues:

- unconsciousness and unresponsiveness upon arrival
- history of hypertension and diabetes
- complaints of severe headaches and dizziness for the past week
- increased fatigue and episodes of confusion and blurred vision

Forming a hypothesis: Given John's medical history, symptoms, and recent complaints, a hypothesis could be

that he is experiencing a hypertensive crisis or a diabetic emergency, such as diabetic ketoacidosis or hyperosmolar hyperglycemic state. These conditions are characterized by severe fluctuations in blood pressure or glucose levels, which can lead to neurological symptoms and loss of consciousness if left untreated.

The nurse's role in an emergency assessment is to swiftly collect critical data and initiate necessary interventions, such as administering oxygen or initiating CPR if required. The ability to make quick, informed decisions is crucial in these high-stakes scenarios. Although nurses can formulate nursing diagnoses and intervene based on their assessments, it is important to acknowledge that the formal medical diagnosis is the responsibility of the healthcare provider.

Physiological Crisis

In emergency nursing assessment, a **physiological crisis** refers to a critical situation where the patient's physiological functions are severely compromised, posing an immediate threat to life or health. Conditions such as heart attacks, severe respiratory distress, or major trauma would all fall under this category. When encountering a physiological crisis, nurses must act quickly and decisively to stabilize the patient's condition and prevent further deterioration. A crisis may manifest in various ways, such as respiratory distress, cardiac arrest, severe bleeding, or neurological deterioration.

Assessment during a physiological crisis typically begins with a rapid evaluation of the patient's ABCs, which are vital for sustaining life. Nurses assess the patency of the airway, the adequacy of breathing, and the presence of a pulse to determine the patient's immediate needs. This assessment may involve interventions such as administering oxygen, initiating cardiopulmonary resuscitation (CPR), or controlling severe bleeding. For example, in a patient experiencing a severe asthma attack, the assessment would include evaluating respiratory rate, oxygen saturation, and the presence of wheezing or other abnormal breath sounds. Immediate interventions might include administering bronchodilators or corticosteroids.

In addition to the ABCs, nurses gather pertinent information about the circumstances leading to the crisis, the patient's medical history, allergies, and medications. This information helps guide the assessment and subsequent interventions. Vital signs such as heart rate, blood pressure, respiratory rate, and oxygen saturation, are closely monitored to assess the patient's physiological status and response to treatment.

The ultimate goal of the emergency nursing assessment during a physiological crisis is to stabilize the patient's condition, restore physiological function, and initiate appropriate interventions to prevent further harm. During a physiological crisis, nurses must maintain clear communication with other members of the healthcare team and prioritize interventions based on the patient's condition and the resources available. Multidisciplinary collaboration is crucial for delivering timely and effective care, especially in high-stakes situations.

Psychological Crisis

A **psychological crisis** refers to a state of acute emotional or mental distress that significantly impairs an individual's ability to cope with their current circumstances. These crises may arise due to various factors such as trauma, acute stress, psychiatric disorders, substance abuse, or suicidal ideation. In such cases, the emergency assessment focuses on evaluating the patient's mental status, ensuring their safety, and identifying immediate psychological needs. Key components include assessing the patient's level of consciousness, cognition, thought processes, mood, and affect.

When encountering a psychological crisis, nurses must employ compassionate and effective assessment techniques to ensure the safety and well-being of the patient. Nurses utilize active listening skills to allow patients to express their feelings and concerns openly. To ensure a safe environment, the nurse may need to implement measures like constant observation if the patient poses a risk to themselves or others. Recommending a referral to mental health specialists and initiating crisis intervention protocols are often part of the response in such situations.

Time-Lapsed Assessment

A **time-lapsed assessment** is a systematic process for evaluating a patient's health status and progress over time, usually every few months. Unlike initial assessments performed on admission or during the early stages of care, time-lapsed assessments occur at regular intervals throughout a patient's treatment trajectory, allowing nurses to monitor changes, track trends, and adjust care plans accordingly. These assessments serve several purposes,

including assessing the effectiveness of interventions, detecting new health issues or complications, evaluating the patient's response to treatment, and promoting continuity of care.

The frequency and timing of time-lapsed assessments vary depending on factors such as the patient's acuity level, the nature of their health condition, the goals of care, and institutional protocols. For patients with chronic conditions or complex medical histories, time-lapsed assessments may occur weekly, monthly, or at other predetermined intervals. In contrast, patients with acute conditions or undergoing rapid changes in status may require more frequent assessments.

This type of assessment is common in all settings but is particularly important in chronic disease management and long-term care. For example, in a patient with hypertension, a time-lapsed assessment might include reviewing changes in blood pressure readings over several months, assessing medication effectiveness, and making necessary adjustments in the treatment plan. It also includes reevaluating the patient's lifestyle changes and the impact of these changes on health outcomes.

Documentation plays a critical role in time-lapsed assessments because it allows nurses to document changes in the patient's condition, track progress toward goals, and communicate findings with other members of the healthcare team. As they help providers track the improvement or worsening of a condition, time-lapsed assessments support timely interventions and modifications in the care plan. They are integral to ensuring continuity of care and adapting care strategies to meet the evolving needs of the patient.

12.3 Collection of Assessment Data

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Verbalize primary sources to collect data during an assessment
- Recognize the importance of establishing priorities during the assessment
- Recall how the nurse will analyze data collected during the assessment

The information nurses gather about a patient's health status is referred to as **data**. This information guides clinical decision-making and is essential in developing a personalized approach to care. Data collected during nursing assessments can be categorized into two types: objective and subjective (Lukey, 2023).

- Objective data are quantifiable and measurable aspects of a patient's condition, such as vital signs, laboratory test results, and physical examination findings. These observable facts provide concrete evidence about the patient's health.
- Subjective data consist of information provided directly by the patient or their caretakers, including their personal experiences, feelings, and perceptions of their health and symptoms. These data offer invaluable insights into the patient's personal view of their health status and contribute to a holistic understanding of their needs.

Both types of data are indispensable in nursing assessments, complementing each other to create a full picture of a patient's health.

This module explores the various data sources, discusses how nurses set priorities during the assessment process, and explains how nurses analyze the data they collect. Mastering these skills is integral to becoming a proficient and compassionate nursing professional.

Sources of Data

Nurses gather assessment data from a variety of sources, including the patients themselves and their family members or other caretakers. Information that comes directly from the patient is **primary data**, while **secondary data** comes from another source, such as a patient's family member or medical record. Nurses also utilize their clinical skills and observations. Each data source provides unique insights, contributing to a comprehensive understanding of the patient's health status.

The Patient

The patient is often the most important source of data in nursing assessments. Through direct communication with patients, nurses gather subjective data by asking open-ended questions, actively listening to their concerns, and

exploring their perspectives on their health condition.

Subjective data gathered from the patient include their personal experiences, symptoms, feelings, beliefs, past medical history, medication history, and perceptions of their health. For example, a patient's description of their pain—its location, intensity, and character—provides indispensable information that cannot be obtained through objective means alone. Patients can also offer key information about their lifestyle, such as dietary habits, exercise routines, and substance use, which are critical to understanding their overall health and well-being.

In addition to verbal communication, nonverbal cues from the patient, such as facial expressions, body language, and overall demeanor, offer valuable data. For instance, a patient's posture and facial expressions can indicate pain or discomfort, even if they have not verbally expressed it. Effective communication skills, including active listening and empathetic engagement, are essential for nurses to interpret and utilize the data provided by the patient accurately.

The Family

Family members and significant others can also be key sources of data on a patient, especially in situations where the patient is unable to communicate effectively. Such may be the case for many pediatric, geriatric, or critically ill patients. Family members can provide historical information, corroborate patient reports, and offer insights into the patient's normal behavior and daily functioning. For example, when assessing a patient with Alzheimer disease, family members can provide crucial information about the patient's baseline cognitive function and recent changes in behavior or memory.

Family-provided data also extend to understanding the patient's home environment and social support system, which are significant in planning postdischarge care. In pediatric care, the observations of parents and guardians when discussing a child's symptoms, eating habits, and developmental milestones are invaluable in forming a complete assessment. It is also important for nurses to consider cultural and familial dynamics, as these influences determine the information provided by family members and the patient's health practices and beliefs.

CULTURAL CONTEXT

Cultural Diversity and the Collection of Data

Understanding and respecting cultural diversity is essential in nursing assessments. Nurses often encounter patients from various cultural backgrounds, and recognizing how cultural factors influence health beliefs and practices is crucial for collecting accurate data. Here are some examples illustrating the importance of cultural awareness (U.S. Department of Health and Human Services, 2004):

- Communication styles: In some cultures, direct eye contact might be considered disrespectful, while in others, it is a sign of honesty and engagement. For instance, patients from certain Asian cultures may avoid direct eye contact with healthcare providers as a sign of respect, which should not be misinterpreted as disinterest or noncompliance.
- Pain expression: Cultural norms can influence how patients express pain. Some cultures encourage vocal expression of pain, while others may value stoicism. Nurses must realize that a patient who does not outwardly seem to be in pain might nevertheless be hurting.
- Family involvement: In many cultures, family plays a central role in healthcare decisions. In Hispanic and South Asian cultures, for example, family members, including extended family, often participate actively in care discussions and decision-making. Understanding these dynamics is important for communicating effectively and obtaining accurate health histories.
- Health beliefs and practices: Traditional health practices and beliefs can significantly influence a patient's approach to illness and treatment. Many people that immigrate to the United States may use traditional healing practices alongside or in place of conventional medicine. Being open to these practices and respectfully discussing them can enhance trust and rapport.
- Dietary considerations: Dietary habits rooted in cultural practices can impact health and treatment plans. For example, certain religious practices, like fasting during Ramadan for Muslims or dietary restrictions in Hinduism, can affect medication schedules and nutritional needs.

By incorporating cultural awareness into the data collection process, nurses can ensure they are gathering complete and accurate information while also respecting each patient's cultural background. This approach contributes to more holistic and patient-centered assessments, a crucial component of quality health care.

Nursing Skills

Nursing skills play a fundamental role in the collection of assessment data. These skills encompass a range of techniques and methods that nurses use to gather information about a patient's health status. From observational skills to specific physical examination techniques, each skill contributes uniquely to the overall assessment. Proficiency in these skills enables nurses to collect both subjective and objective data effectively, forming the basis for accurate diagnoses and care planning (American Nurses Association, n.d.).

LINK TO LEARNING

An overview of nursing skills for data collection (https://openstax.org/r/77nurskdata) is provided in this video.

Observational Skills

Observational skills in nursing involve the use of all senses to gather data about a patient. This includes noticing changes in skin color, body posture, facial expressions, and behaviors that might indicate pain or discomfort. For example, observing a patient's gait can reveal a lot about their physical condition. A shuffling gait might indicate fear of falling, possibly due to balance issues or muscle weakness. A patient with a limp may be experiencing pain in the hip, knee, or foot, or they could have a muscular or skeletal abnormality. Alternatively, an unsteady or irregular gait might suggest neurological issues, such as those seen in patients with stroke history or Parkinson disease. By noting these specifics, a nurse can tailor the assessment and care plan to address mobility concerns.

Observational skills also extend to monitoring changes over time, such as tracking the progression of a wound's healing or changes in a patient's response to treatment. These skills are critical for identifying subtle changes that might not be explicitly communicated by the patient. Consider a patient who has reported feeling fine for several days but appears to wince when moving in bed one morning. This apparent contradiction between the patient's words and behavior, caught through keen observation, can lead the nurse to uncover an issue that might otherwise have been overlooked.

Communication Skills

Effective communication skills are vital in nursing assessments to elicit subjective data from the patient. These skills include active listening, open-ended questioning, and empathetic responses that encourage patients to share concerns and symptoms. For instance, asking a patient to describe their pain in their own words and following up with open-ended questions can provide valuable information about the location, quality, and severity of the pain. A patient might initially complain of pain in their chest, but a skilled nurse can guide them to provide a more detailed description, such as "a squeezing sensation that radiates to my left arm." A more specific description can be crucial for accurate diagnosis and timely intervention.

Communication skills also involve educating and informing patients about their condition and the assessment process, which can alleviate anxiety and build trust. Consider a patient who is hesitant to discuss their mental health and initially downplays their anxiety levels. Through empathetic and nonjudgmental communication, a nurse can create a safe space for the patient to open up about ongoing stressors. With this knowledge, specific strategies for alleviating stress can be incorporated into the patient's care plan.

Inspection

A fundamental nursing skill known as **inspection** is when the nurse visually examines the patient's body for normal and abnormal findings (Burke, 2023). It is often the first step in the physical examination process and can provide immediate clues about the patient's health status. During inspection, nurses observe the patient's overall appearance, noting factors such as skin color, posture, hygiene, and level of consciousness. Skin inspection allows nurses to assess for abnormalities such as pallor (pale color), cyanosis (blue color), jaundice (yellow color), rashes, bruises, lesions, or signs of inflammation, which may indicate underlying health conditions or injuries. For example, a nurse might inspect a patient's skin for rashes, lesions, or signs of infection or a patient's throat for redness or

swelling. Posture and body alignment provide insights into musculoskeletal function and potential mobility limitations, while personal hygiene reflects the patient's self-care abilities and overall health practices. For example, a patient with COPD may present with barrel chest and use of accessory muscles to breathe.

Inspection also extends to the patient's behavior and affect, including facial expressions, gestures, speech patterns, and interactions with others. Observing for signs of distress, agitation, lethargy, or confusion helps nurses evaluate the patient's cognitive and emotional status, detect changes in mental functioning, and assess their ability to communicate effectively. For example, a nurse caring for an older patient may assess cognitive function before and after a procedure to watch for any concerning changes from baseline.

Additionally, nurses may observe for nonverbal cues of pain or discomfort, such as grimacing, guarding, or restlessness, which inform pain assessment and management strategies. A common example would be observing a postoperative patient who has not yet fully recovered from anesthesia and sedation for nonverbal signs of discomfort.

Palpation

The technique of using one's hands to feel the body for abnormalities during a physical examination is called palpation (Figure 12.2) (Burke, 2023). It assesses the texture, temperature, moisture, and size of organs and tissues. For example, during an abdominal assessment, the nurse may feel a pulsating mass in the midabdominal area, raising suspicion of an abdominal aortic aneurysm. Such a finding would warrant urgent medical evaluation.

Palpation can be light to assess surface characteristics or deep to assess organs or other structures within the body. This skill is crucial for obtaining information that cannot be gained through inspection alone.

FIGURE 12.2 The nurse is palpating the child's abdomen to check for abnormalities. (credit: "Abdominal palpitation of a boy" by Cohen A. Young, U.S. Air Force/Wikimedia Commons, Public Domain)

Percussion

Tapping on the body to assess underlying structures is known in the healthcare field as **percussion** (Burke, 2023). The sound produced can indicate the presence of fluid, air, or solid tissue and is useful in assessing the size and density of organs. Percussion is commonly performed in respiratory and abdominal assessments. For instance, in respiratory assessments, percussion can help detect areas of lung consolidation or fluid accumulation; dull sounds over the lung fields, instead of the expected resonance (echoing sound), might indicate pneumonia. When percussing the abdomen, a shift in sound from the expected tympany (hollow sound) to dullness can confirm the presence of ascitic fluid, guiding further diagnostic testing and management. This technique requires skill to elicit and interpret the sounds correctly.

LINK TO LEARNING

Learn the proper techniques for conducting a physical assessment (https://openstax.org/r/77physassess) in this video.

Auscultation

Listening to the sounds produced within the body, typically using a stethoscope, is called **auscultation** (Figure 12.3) (Burke, 2023). This technique is essential for assessing the function of the heart, lungs, and abdomen. For instance, when auscultating a patient's heart, a nurse listens for abnormalities such as murmurs, which could indicate valvular heart disease. On the other hand, a high-pitched, whooshing sound heard at the heart's apex could signify mitral regurgitation. Identifying specific sounds such as these is crucial for early intervention and referral to cardiology.

FIGURE 12.3 Healthcare providers typically use a stethoscope to auscultate (or listen to) the sounds made by a patient's heart, lungs, bowels, and other organs. (credit: "Standardized-Patient-Program-examining-t he-abdomen" by University of Michigan Medical School Information Services/Wikimedia Commons, CC BY 2.0)

Auscultation of the lungs involves listening to breath sounds, including inspiratory and expiratory sounds, and any adventitious (unusual) sounds, such as crackles, wheezes, or rhonchi. These lung sounds provide information about the patency of the airways, ventilation-perfusion ratios, and the presence of conditions such as pneumonia, bronchitis, or pulmonary edema. For example, a patient with heart failure may present with crackles in the lung bases, indicative of fluid accumulation. Recognizing these abnormal breath sounds can prompt immediate interventions such as diuretic therapy to manage heart failure more effectively.

In addition to cardiac and respiratory auscultation, nurses may also perform auscultation of the gastrointestinal system to assess bowel sounds. Normal bowel sounds indicate the presence of peristalsis (digestive movement) and normal gastrointestinal motility, while changes in bowel sounds may signify conditions such as bowel obstruction (intestinal blockage), ileus (intestinal paralysis), or intestinal inflammation. Auscultating the abdomen allows nurses to monitor gastrointestinal function, assess for signs of bowel obstruction or impaction, and evaluate the effectiveness of interventions such as bowel rest or nasogastric tube decompression.

Establishing Priorities during Assessment

When assessing a patient to collect data, prioritization is usually necessary. Nurses often face complex situations

and multiple health issues that need attention. They must quickly identify the most critical needs to address to ensure patient safety and well-being. This approach is particularly vital in emergency settings or with patients who have multiple chronic conditions of varying immediacy and severity. Prioritizing ensures that the most urgent conditions are treated promptly while still allowing other important health needs to be addressed in a systematic manner. Even for routine assessments, it is important to prioritize, as not every piece of data is relevant to a patient's care.

ABCs

The **ABC framework** is a fundamental approach nurses use to establish priorities during an assessment, especially in emergency and acute care settings. This system uses the letters A (airway), B (breathing), and C (circulation) to remind providers to assess these components of health (Marymount University, 2022):

- Airway: An obstructed airway can rapidly lead to respiratory arrest. Therefore, the priority is to ensure the patient's airway is open and clear. For example, in cases of trauma, swelling or foreign objects can obstruct the airway, necessitating quick intervention.
- Breathing: Once the airway is secured, the nurse assesses the patient's breathing. This includes checking the rate, depth, and effort of breaths and observing for signs of respiratory distress. For instance, assessing for wheezing and use of accessory muscles is critical to managing the breathing of a patient with asthma.
- Circulation: The third priority is circulation. The nurse should assess the patient's heart rate, blood pressure, and perfusion. Any signs of circulatory compromise, such as weak pulse, hypotension, or cyanosis, require immediate attention. For example, in a cardiac arrest scenario, restoring circulation through CPR is a priority.

Maslow's Hierarchy

Another framework used by nurses to establish priorities, particularly for patients in less acute settings, is Maslow's hierarchy of needs. Based on the work of the American psychologist Abraham Maslow, the hierarchy uses a triangle to organize human needs from the most basic (at the bottom) to the most complex (at the top) (Figure 12.4) (McLeod, 2018). Before humans can focus on meeting any particular need, they must have met the needs lower in the hierarchy (Marymount University, 2022).

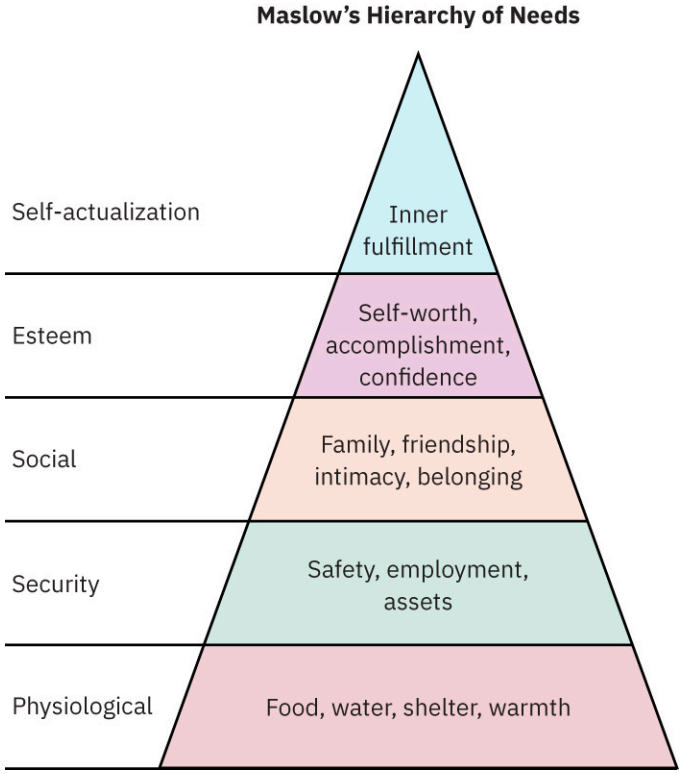

FIGURE 12.4 According to Maslow's hierarchy of needs, the most basic needs are physiological (including food, water, and sleep) and safety. Once these needs are met, humans can seek to meet their needs for love and belonging, self-esteem, and ultimately, self-actualization—the state of having reached one's full potential. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

- The hierarchy begins with physiological needs, which include basic requirements such as air, food, water, and shelter. In nursing, this means ensuring that a patient's basic health needs, such as nutrition, hydration, and pain management, are met. For instance, a diabetic patient's need for blood sugar regulation is a primary physiological concern.
- Safety and security needs come next, encompassing both a patient's physical safety and psychological security. In a healthcare setting, this might involve reducing the risk of falls in older adult patients or reassuring anxious patients about their care and treatment.
- The hierarchy also includes psychological and self-fulfillment needs, such as love and belongingness, self-esteem, and self-actualization, which are more relevant in long-term care and holistic patient well-being. For example, addressing a patient's social interactions and self-esteem issues is essential in mental healthcare and rehabilitation settings.

Nursing Process

The nursing process is a systematic method nurses use to provide individualized patient care. It consists of five steps: assessment, diagnosis, planning, implementation, and evaluation. Each step involves prioritizing patient needs and ensuring that the most critical issues are addressed effectively. Table 12.2 illustrates this process using the example of a patient, Mrs. Smith, who has been admitted with congestive heart failure.

Step	Explanation	Connection to Prioritization
Assessment	The first step in the nursing process involves gathering relevant data about the patient, including medical history, medication regimen, and lifestyle factors.	The nurse should focus on Mrs. Smith's most pressing symptoms, such as difficulty breathing and fluid retention.
Diagnosis	Based on the assessment, the provider determines the cause of the health issue. This step helps in setting clear goals for the patient's treatment.	For Mrs. Smith, a primary nursing diagnosis might be "impaired gas exchange related to congestive heart failure." This issue should take precedence over less urgent ones.
Planning	The planning phase involves setting short-term (e.g., can be achieved within hours to days) and long-term (e.g., can be achieved over weeks to months) goals and determining the course of action for treating the issue.	The plan should be tailored to address the most critical needs first. For Mrs. Smith, high-priority goals include stabilizing her breathing and managing her heart function. Lower-priority goals might involve education about lifestyle modifications and long-term management of her condition.
Implementation	During this phase, the prioritized care plan is put into action.	High-priority interventions for Mrs. Smith might include administering diuretics to manage fluid retention and providing oxygen therapy to improve her breathing. Secondary interventions could involve nutritional counseling and mobilization strategies as her condition stabilizes.
Evaluation	In the final step, the nurse evaluates the patient's response to the treatment plan. The care team can then determine whether the plan needs to be adjusted.	Prioritizing in this step involves assessing whether the high-priority goals for Mrs. Smith, such as improved breathing and reduced edema, have been achieved.

TABLE 12.2 Prioritization and the Nursing Process

The **Clinical Judgment Measurement Model (CJMM)**, a framework designed to assess and evaluate the clinical judgment skills of nurses, intersects with each phase of the nursing process (Figure 12.5), enriching and refining nurses' clinical decision-making skills. During the assessment phase, CJMM emphasizes gathering thorough patient data and recognizing subtle cues to inform subsequent clinical judgments and interventions. In the diagnosis phase, CJMM guides nurses in formulating precise nursing diagnoses, integrating assessment data and evidence-based practice. The CJMM supports nurses in developing holistic care plans in the planning phase, prioritizing interventions, and collaborating with interdisciplinary teams. During implementation, CJMM assists in executing care plans with adaptability and incorporating evidence-based interventions. In the evaluation phase, CJMM facilitates a comprehensive review of patient responses, enabling critical analysis and continuous quality improvement. Integrating CJMM enhances nurses' ability to promote patient safety, deliver high-quality care, and make informed clinical judgments throughout patient care delivery.

Comparing the Clinical Judgment Measurement Model (CJMM)						
Nursing Process	**Assessment**	**Analysis**		**Planning**	**Implementation**	**Evaluation**
CJMM	Recognize cues	Analyze cues	Prioritize hypotheses	Generate solutions	Take actions	Evaluate outcomes

FIGURE 12.5 The alignment between the Clinical Judgment Measurement Model (CJMM) and the nursing process is evident in how CJMM principles guide each step of the nursing process to facilitate informed clinical judgments and improve patient outcomes. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Analyzing Data Collected during the Assessment

Analyzing the data collected during a nursing assessment is a critical step in the nursing process. It involves interpreting the gathered information to make informed decisions about patient care. This analytical process requires nurses to identify significant clues, make inferences, recognize patterns, and apply both inductive and deductive reasoning. These skills enable nurses to translate assessment data into actionable insights, forming the basis for accurate nursing diagnoses and effective care plans.

Clues and Inferences

Clues are pieces of observable, measurable, and factual information obtained during the assessment process. These may include vital signs, physical examination findings, patient statements, and laboratory results. For example, if a patient reports increased shortness of breath and the nurse observes swelling in the legs, these clues might suggest heart failure.

Inferences are the conclusions drawn from these clues. Nurses use critical-thinking skills to analyze the data, recognize patterns, identify deviations from the norm, and consider the significance of each finding in the context of the patient's overall health. In this case, the nurse might infer that the patient's heart failure is worsening. Making accurate inferences based on observed clues is crucial for identifying a patient's health issues and planning appropriate interventions.

Patterns

Recognizing patterns in the assessment data is another crucial aspect of analysis. Patterns refer to recurring themes, trends, or relationships observed across various aspects of the assessment. To analyze patterns effectively, nurses compare and contrast data points collected over time or across different assessment parameters. They look for consistency or inconsistency in the findings, noting any deviations from the expected or normal range. For instance, a pattern of increasing blood pressure readings over several visits might indicate poorly controlled hypertension. Recognizing these patterns helps nurses anticipate and prevent complications, adjust treatments, and advocate for changes in the care plan.

Inductive Reasoning

Making generalizations based on specific observations is known as **inductive reasoning** (Burke, 2023). For example, if a nurse observes a patient's wound is not healing despite standard care and knows that similar cases have improved with a different treatment, then the nurse may conclude that their patient may benefit from an alternative treatment. This form of reasoning allows nurses to formulate hypotheses about a patient's condition and potential

responses to treatment based on observed trends and outcomes.

Deductive Reasoning

In **deductive reasoning**, general principles are applied to make conclusions about specific cases (Burke, 2023). For instance, knowing that immobility increases the risk of pressure ulcers, a nurse caring for a bedridden patient will deduce the need for regular repositioning and skin assessments. This type of reasoning allows nurses to apply established knowledge and guidelines to individual patient scenarios, ensuring evidence-based and personalized care.

REAL RN STORIES

Reasoning in Action: A Complex Case of Diabetes Management

Nurse: Maria, RN, BSN
Clinical setting: Endocrinology unit
Years in practice: 12
Facility location: San Antonio, Texas

As a nurse in the endocrinology unit, I encounter many patients with complex cases of diabetes. One such case that stands out involved a patient, Mr. Hernandez, who was admitted with poorly controlled type 2 diabetes and recurrent foot ulcers.

From the initial assessment, it was clear that Mr. Hernandez's situation was multifaceted. He reported being diligent with his medication, yet his blood glucose levels were consistently high. Through careful observation, I noticed his reluctance to discuss dietary habits and a general lack of knowledge about diabetes management. This was my first clue that there might be more to his condition than medication adherence.

Using my communication skills, I gently probed into his daily routine and eating habits. This revealed a pattern of sporadic mealtimes and consumption of high-carbohydrate foods despite his medication regimen. It became evident that Mr. Hernandez's understanding of diabetes management was limited, impacting his ability to control his condition effectively.

Applying inductive reasoning, I hypothesized that a lack of education about diabetes and inadequate nutritional guidance were contributing to Mr. Hernandez's poor health outcomes. This was further supported by the pattern of his uncontrolled blood glucose readings in relation to his eating habits.

Using deductive reasoning based on the general principles of diabetes management, I concluded that comprehensive patient education was crucial. I worked with the diabetes education team to develop a tailored education plan for Mr. Hernandez, focusing on nutrition, medication management, and foot care.

The integration of in-depth assessment, inductive and deductive reasoning, and a focus on patient education led to significant improvements in Mr. Hernandez's condition. His experience is a testament to the impact of holistic nursing care and the importance of collecting and analyzing a wide range of data when managing complex health conditions.

12.4 Cognitive Process for Analyzing Assessment Data

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify ways a nurse will analyze data collected from health assessment
- Describe the skills needed for effective critical thinking, clinical reasoning, and clinical judgment
- Define steps needed to successfully implement critical thinking, clinical reasoning, and clinical judgment

In the dynamic healthcare environment, a nurse's role extends beyond collecting patient data. Nurses rely on cognitive processes to interpret and make sense of the information gathered during patient assessments, diagnostic tests, and monitoring. Cognitive processes are the mental activities people use to acquire, process, store, and use information. For the nurse analyzing healthcare data, these mental processes play a vital role in understanding the patient's condition, identifying potential problems or risks, and formulating appropriate interventions or treatment

plans.

Here is an example case: A 60-year-old patient who underwent surgery two days ago to remove an infected appendix has developed a fever. The nurse providing care for the patient needs to analyze the myriad of data collected during the patient's stay in the hospital—his vital signs, physical examination findings, patient history, and subjective descriptions of his symptoms. To navigate this complex information, the nurse must employ a structured approach, integrating nursing knowledge, observational insights, and experiential understanding. This involves not just identifying the apparent symptoms but also interpreting underlying patterns, making inferences, and ultimately, formulating a clinical judgment that will guide the patient's care plan.

This section explores how nurses can use various cognitive skills to sift through and make sense of patient data, apply critical thinking to identify key health concerns, use clinical reasoning to understand the implications of data, and exercise clinical judgment to make informed decisions. By mastering these cognitive processes, nurses ensure that their assessments lead to effective and individualized patient care.

Analyzing Knowledge

Analyzing knowledge in nursing is a multifaceted process that involves clinical reasoning, critical thinking, and clinical judgment. These skills are essential for transforming the raw data collected from patient assessments into meaningful, actionable information. They enable nurses to understand the implications of the data, anticipate patient needs, and make informed decisions about care and treatment (Figure 12.6).

FIGURE 12.6 The nurse must analyze what they know and observe about a patient to appropriately diagnose and treat them. (credit: "U.S. Navy Doctors, Nurses and Corpsmen Treat COVID Patients in the ICU Aboard USN Comfort" by Navy Medicine/Flickr, Public Domain)

Clinical Reasoning

As learned in Conducting Assessments, clinical reasoning is the process by which a healthcare provider combines their knowledge and experience with data obtained through various patient assessments to generate hypotheses about a patient's condition and determine an appropriate response (Hong et al., 2021). The nurse will consider observable and subjective data on the patient gleaned from a current assessment and use the medical record to review the patient's history. Once they have processed the information at hand, the nurse will formulate a hypothesis that will guide examination and potential interventions.

Critical Thinking

The disciplined, systematic process of applying skillful reasoning to guide belief or action is **critical thinking**. It involves questioning assumptions, considering alternative perspectives, and weighing evidence to make informed clinical judgments. It encompasses skills such as logical reasoning, analysis, reflection, and skepticism, enabling healthcare professionals to assess the validity and reliability of information and apply sound reasoning in clinical practice (Falcó-Pegueroles et al., 2021).

Clinical Judgment

The nurse's ability to synthesize information, draw conclusions, and make decisions about patient care based on clinical reasoning and critical-thinking skills is **clinical judgment**. It involves assessing the significance of patient data, recognizing patterns or trends, and predicting potential outcomes to guide clinical actions and interventions. Clinical judgment integrates knowledge, experience, intuition, and evidence-based practice to make informed decisions that promote positive patient outcomes and ensure safe and effective care delivery. It is the culmination of the assessment process when the nurse decides on a course of action based on the data and their analysis (Conner et al., 2023).

CLINICAL JUDGMENT MEASUREMENT MODEL

Form a Hypothesis: Using Clinical Judgment to Formulate Hypotheses

Imagine a scenario in which a nurse is conducting a health assessment on a patient who presents with shortness of breath and chest pain. The patient, a 55-year-old male, arrives at the emergency department clutching his chest and is visibly distressed. He reports a sudden onset of chest pain that radiates to his left arm and is accompanied by difficulty breathing. The nurse quickly ushers the patient into a private examination room and begins the assessment.

- Identifying cues: The nurse gathers relevant data by asking the patient about their medical history, current symptoms, and any precipitating factors. The patient mentions a history of hypertension and smoking, as well as recent travel by plane. Additionally, the nurse performs a physical examination and reviews vital signs, noting the patient's elevated blood pressure (160/90 mm Hg), tachycardia (heart rate of 110 bpm), and respiratory rate of 24 breaths per minute. Auscultation reveals diminished breath sounds on the left side of the chest.
- Analyzing cues: When collecting data, the nurse meticulously analyzes the cues to identify patterns, trends, and deviations from the norm. The nurse recognizes that the patient's shortness of breath and chest pain, especially when accompanied by radiation to the left arm and risk factors such as hypertension and recent air travel, could be indicative of various underlying conditions, such as a heart attack or a pulmonary embolism.
- Forming hypotheses: Based on the analyzed cues, the nurse forms hypotheses about the possible causes of the patient's symptoms. The nurse considers potential conditions, weighing the likelihood of each condition based on the patient's clinical presentation, risk factors, and relevant diagnostic tests. Hypotheses may include pulmonary embolism due to recent surgery or prolonged immobility, myocardial infarction due to cardiovascular risk factors and typical symptoms, or pneumonia due to a recent respiratory infection or compromised immune status.

Nursing Skills Needed for Critical Thinking, Clinical Reasoning, and Clinical Judgment

The application of critical thinking, clinical reasoning, and clinical judgment is underpinned by a set of core skills nurses must have. These skills, which include observation, knowledge, experience, reflection, and interpretation, are essential for nurses to analyze patient data effectively and make informed decisions.

Observation

Observation is a crucial skill for effective critical thinking, clinical reasoning, and clinical judgment in health care. Through careful observation, healthcare professionals meticulously attend to details, nuances, and subtle cues in a patient's presentation, history, and physical examination. This attention to detail enables the collection of accurate and comprehensive information, laying a solid foundation for critical thinking.

Moreover, observation facilitates the identification of patterns, trends, and relationships within the data gathered, thereby fostering deeper analysis and synthesis of information critical for problem-solving. In clinical reasoning, observation serves as the primary data collection method, observing the patient's appearance, behavior, vital signs, and physical signs and symptoms to gather information about their health status.

It is through observation that healthcare professionals interpret findings, identify potential health issues, and formulate hypotheses to guide clinical decision-making. For clinical judgment, observation is pivotal in assessing the patient's condition and determining the appropriate course of action. Vigilant observation enables nurses to detect subtle changes in the patient's condition, facilitating timely adjustments to treatment plans and interventions.

Knowledge

Effective critical thinking, clinical reasoning, and clinical judgment in nursing rely heavily on a solid knowledge foundation spanning many domains. First, nurses must possess a comprehensive understanding of anatomy, physiology, and pathophysiology to grasp the human body's complexities and recognize deviations from normal functioning. This knowledge allows for accurate interpretation of clinical data and identification of underlying health issues.

Second, proficiency in medical terminology and pharmacology is crucial for effective communication and medication management. Nurses must be able to accurately document patient assessments, communicate with interdisciplinary team members, and administer medications safely.

Third, familiarity with evidence-based practice guidelines, clinical protocols, and healthcare policies is essential for making informed decisions and providing quality care. Healthcare professionals need to stay updated on the latest research findings and clinical guidelines to ensure that their practice aligns with best practices and standards of care.

Last, but certainly not least, a solid understanding of cultural competence and ethical principles is vital for delivering patient-centered care and respecting patients' autonomy and rights.

Experience

A nurse's experience complements their knowledge by providing practical insights they have gained over time. Nurses need proficiency in patient assessment techniques, including history-taking, physical examination, and diagnostic interpretation. This hands-on experience enables nurses to gather accurate and relevant data from patients, laying the foundation for informed decision-making.

Exposure to diverse clinical scenarios and patient populations enhances adaptability and flexibility in problem-solving. By encountering a variety of cases and situations, nurses develop the ability to recognize patterns, anticipate potential complications, and tailor care plans to meet individual patient needs. Practical experience fosters the development of intuition and clinical judgment, allowing healthcare professionals to make rapid yet thorough assessments of complex situations. Through exposure to real-world challenges, nurses refine their ability to prioritize tasks, identify red flags, and navigate ethical dilemmas.

Reflection

Reflection involves reflecting on one's own experiences and learning from them. Nurses must be able to reflect on their own experiences, actions, and decisions to identify strengths, weaknesses, and areas for improvement.

Through self-reflection, nurses can critically evaluate their clinical practice, identifying patterns of success and areas where they may have made errors or faced challenges. This introspective process enables nurses to continuously refine their clinical skills and enhance their ability to make informed decisions in future patient encounters.

Reflection skills encourage healthcare professionals to consider the perspectives and experiences of others, including patients, colleagues, and interdisciplinary team members. By reflecting on interactions with patients and colleagues, nurses can gain insights into different communication styles, cultural perspectives, and professional dynamics.

Interpretation

Interpretation is the ability to make sense of all the gathered information. Interpretation skills involve synthesizing

complex information from multiple sources, including patient histories, physical examination findings, laboratory results, and diagnostic imaging studies, to develop a comprehensive understanding of the patient's health status.

Nurses must be able to integrate the data they gather, critically analyze it, and derive meaningful insights to inform their clinical reasoning and decision-making. This process requires recognizing connections between different pieces of information and drawing logical conclusions based on the available evidence.

PATIENT CONVERSATIONS

Managing Migraines

Scenario: Ms. Chang, a 50-year-old Chinese American female, is seeing her primary care provider, Nurse Patel, a board-certified nurse practitioner, for a routine wellness visit. Note how Nurse Patel utilizes the five core skills you just read about.

Nurse: Good morning, Ms. Chang. How have you been since our last visit?

Patient: Good morning, Nurse Patel. It's been tough. The migraines are more frequent now.

OBSERVATION

Nurse: I see you're rubbing your temples. Are you experiencing a headache right now?

Patient: Yes, it started this morning. It's quite intense.

Nurse: I noticed you seemed sensitive to the light when you walked in. Light sensitivity is common with migraines. Have you experienced any nausea or other symptoms?

KNOWLEDGE

Patient: I feel a bit nauseous, yes.

Nurse: Nausea often accompanies migraines. Are there any activities or foods you've noticed that seem to trigger these episodes?

Patient: I think stress and maybe certain foods. I'm not sure which ones, though.

Nurse: It's helpful to track your diet and activities. Sometimes, aged cheeses, processed foods, or even skipping meals can trigger migraines.

EXPERIENCE

Patient: Skipping meals? I didn't know that.

Nurse: Yes, maintaining a regular eating schedule can sometimes help. In my years of working with migraine patients, I've also seen stress management techniques make a significant difference. Have you tried any relaxation methods?

Patient: I used to meditate, but I haven't found the time recently.

Nurse: Rediscovering those helpful habits could be beneficial. Many patients find that resuming meditation helps manage their stress levels and reduce migraine frequency.

REFLECTION

Patient: Maybe I should give that a try again.

Nurse: Reflecting on what has worked for you in the past is a great approach. In addition to meditation, do you recall any other activities or treatments that brought relief?

Patient: I remember feeling better when I used to exercise regularly.

Nurse: Exercise can be an effective way to manage stress and potentially reduce migraine occurrences. Incorporating regular physical activity into your routine might be something to consider.

INTERPRETATION

Patient: I could start with some light exercise, maybe walking or yoga.

Nurse: That sounds like an excellent idea. Based on our conversation and your symptoms, it seems managing stress and maintaining a healthy lifestyle could play a key role in your migraine treatment plan. We can explore this further and adjust your care plan accordingly.

Implementation of Critical Thinking, Clinical Judgment, and Reasoning

The implementation of critical thinking, clinical judgment, and reasoning in nursing practice is a dynamic and multifaceted process. It requires the nurse to move beyond data collection, employing a structured approach to conceptualize, apply, analyze, synthesize, and evaluate information as they make informed decisions about patient care. This process is crucial to ensuring that care is effective and tailored to each patient's unique needs.

Conceptualizing

Forming an initial understanding of the patient's situation based on the data collected is called **conceptualizing**. The nurse must be able to synthesize complex information, identify relationships between concepts, and construct mental models that represent the underlying principles or mechanisms governing clinical phenomena. Nurses conceptualize concepts such as pathophysiology, pharmacology, and anatomy to understand the underlying mechanisms of disease processes and treatment modalities.

By conceptualizing these concepts, clinicians can analyze clinical scenarios, anticipate potential outcomes, and devise effective interventions or management strategies. When a nurse understands the implications of different clinical scenarios and considers the broader context of patient care, they can prioritize interventions, anticipate potential complications, and optimize patient outcomes.

Applying

The practical implementation of knowledge, skills, and strategies to address clinical challenges, solve problems, and make informed decisions in healthcare settings is called **applying**. It involves putting theoretical concepts into practice and translating abstract ideas into concrete actions that impact patient care and outcomes. By translating knowledge and skills into action, healthcare professionals can effectively address the multifaceted challenges of patient care, promote evidence-based practice, and ensure the delivery of safe, high-quality care that meets the needs of diverse patient populations.

Analyzing

The systematic examination and evaluation of information, data, or evidence to derive meaning, identify patterns, and draw conclusions is called **analyzing**. Analyzing is the breaking down of information into smaller parts to understand the significance of each part and the relationships among them. This step is critical in moving from having a general understanding of a patient's health status to having more specific insight into it.

Synthesizing

The process of integrating, combining, or organizing diverse pieces of information, data, or evidence to develop a coherent understanding, formulate hypotheses, or generate solutions is called **synthesizing**. It involves drawing connections between different sources of information, identifying patterns or relationships, and synthesizing findings to inform decision-making and problem-solving processes.

As they become skilled at integrating diverse sources of information, nurses develop nuanced understandings of complex clinical scenarios, make informed decisions, and provide high-quality, patient-centered care that optimizes patient outcomes and enhances the quality and safety of healthcare delivery.

Evaluating

Assessing, appraising, or judging the quality, relevance, and effectiveness of information, data, or evidence to make informed decisions, solve problems, or improve outcomes is called evaluating. The process involves critically examining the strengths and weaknesses of various options, interventions, or approaches and determining their suitability or appropriateness based on established criteria or standards.

Through systematically assessing and appraising information, data, and decisions, nurses can make informed

judgments, optimize patient outcomes, and continuously improve the quality and safety of healthcare delivery.

Summary

12.1 The Nurse's Role in Assessment

Nursing assessment is a systematic process of gathering comprehensive and accurate information about a patient's health status. A comprehensive nursing assessment includes physical signs as well as psychosocial, emotional, and spiritual factors to ensure holistic care.

Using the information gathered, the nurse can tailor care and treatment to a specific patient's needs. The process starts with examining a patient's current condition, identifying changes or risks, and prioritizing health needs for intervention. An accurate assessment is essential for a correct diagnosis and appropriate planning and emphasizes the significance of the data collected.

Nurses use clinical reasoning skills to perform focused assessments to address immediate concerns while covering all necessary health aspects using a systemic approach. Proper documentation that adheres to confidentiality requirements and standardized formats is necessary not only for legal compliance but also for ensuring effective communication among healthcare providers who are part of the patient's care team.

12.2 Types of Assessment

There are several types of nursing assessments, each tailored to meet specific patient needs and clinical situations. Understanding when and how to employ each type is a key skill for nurses, enabling them to provide effective, patient-centered care across a range of healthcare settings.

An initial assessment is the most comprehensive. It is typically conducted on admission to a healthcare setting and includes a complete evaluation of the patient's physical condition, medical history, lifestyle, and current symptoms. This type of assessment provides a baseline of a patient's health. It is also an opportunity to establish a complete database on which future care and decisions are based.

In contrast, problem-focused assessments are more specific, targeting particular health issues or symptoms. These are often shorter, scheduled, and ongoing, with the focus on monitoring a specific problem or chronic condition. Emergency assessments are rapid and focused, aimed at addressing life-threatening crises and stabilizing the patient's condition.

Time-lapsed assessments are conducted when several months have passed since the previous assessment. They are crucial for evaluating a patient's progress over time, particularly in chronic disease management and long-term care. Ongoing assessments also allow the nurse to track a patient's well-being and function over time and observe for any concerning deviations from their established baseline. These assessments also play an important role in evaluating treatments and informing how care may evolve for a patient as time and other life factors change their healthcare needs.

12.3 Collection of Assessment Data

Nurses gather assessment data from various sources, including the patient and their family, as well as their observations and skills. The information gathered during an assessment informs patient care and is crucial to providing care that is tailored to a patient's individual needs. Obtaining information requires the nurse to use techniques like observation and physical examination (observation, communication, inspection, auscultation, palpation, and percussion), to get a "big picture" sense of a patient's physical state and needs.

Once the nurse has acquired the patient data, they need to decide the most important need that must be met before all others. A patient's most basic needs, like safety, must be addressed before other, broader needs can be tackled.

Prioritization frameworks like ABCs (airway, breathing, circulation) and Maslow's hierarchy help nurses focus on the most urgent needs first. The nurse will then analyze assessment data through pattern recognition, inductive/deductive reasoning, and identification of clues. This skilled analysis allows nurses to interpret the information accurately and make informed clinical decisions, ensuring that the interventions align with and support a patient's unique needs.

12.4 Cognitive Process for Analyzing Assessment Data

The cognitive process of analyzing patient data is a critical component of patient care. The nurse will take a structured approach to apply a variety of skills to interpret information collected during health assessments. Nurses must integrate their knowledge, observations, and experiences to produce meaningful, actionable patient information. The nurse achieves this by interpreting underlying patterns, making inferences, and formulating a clinical judgment that informs a patient's care.

Critical thinking, clinical reasoning, and clinical judgment are three essential skills that facilitate the process. Critical thinking involves systematically questioning and evaluating information to form a reasoned judgment. The skill enables nurses to consider various possibilities and outcomes based on patient data. Clinical reasoning is the process of collecting cues, processing the information, and understanding the patient's health problem. It guides nurses in planning and implementing interventions, evaluating outcomes, and learning from the process. This reasoning requires the nurse to move beyond data collection and use a structured approach to conceptualize, apply, analyze, synthesize, and evaluate information to make informed decisions about patient care.

The culmination of these efforts is clinical judgment, through which nurses make informed decisions based on the analyzed data. They must synthesize all gathered information, including observations, patient history, and clinical knowledge, to arrive at a conclusion and action plan.

All the nurse's cognitive skills are called on to ensure that care is thorough, evidence based, and tailored to individual patient needs. The successful implementation of these skills requires ongoing practice and reflection, making them fundamental to the role of the nurse in patient care and treatment.

Key Terms

ABC framework a system that uses letters as reminders to establish three fundamental priorities during a nursing assessment: airway, breathing, and circulation
actual problem current health issues that are identifiable through symptoms or clinical evidence
analyzing the systematic examination and evaluation of information, data, or evidence to derive meaning, identify patterns, and draw conclusions
applying the practical implementation of knowledge, skills, and strategies to address clinical challenges, solve problems, and make informed decisions in healthcare settings
assessment the systematic and dynamic process of collecting and analyzing data about a patient's health
auscultation the technique of listening to the sounds produced within the body, typically using a stethoscope
Beck Depression Inventory a widely used self-report questionnaire designed to assess the severity of depression symptoms experienced by an individual
clinical judgment utilizing nursing knowledge, critical thinking, and clinical reasoning, drawing from evidence, theories, and interdisciplinary insights to make informed and patient-centered decisions
Clinical Judgment Measurement Model (CJMM) the latest framework developed by the National Council of State Boards of Nursing (NCSBN) to aid in identifying nursing-focused clinical problems
clinical reasoning the process by which a healthcare provider combines their own knowledge and experience with data obtained through various patient assessments to diagnose a medical problem and determine an appropriate response
conceptualizing forming an initial understanding of the patient's situation based on the data collected
critical thinking the disciplined, systematic process of applying skillful reasoning as a guide to belief or action
data information that nurses gather about a patient's health status
deductive reasoning the process of applying general principles to draw conclusions about specific cases
emergency assessment an assessment conducted when a patient presents with life-threatening or potentially life-threatening conditions
Faith, Importance and Influence, Community, and Address (FICA) tool a tool used by healthcare professionals to assess patients' spiritual and religious beliefs and practices
Holmes-Rahe Life Stress Inventory a tool used to measure the stress level experienced by an individual based on the occurrence of certain life events within a specified period
inductive reasoning the process of making generalizations based on specific observations
initial assessment the first extensive evaluation of a patient's overall health status, including their physical

condition, medical history, and current symptoms; typically conducted on a patient's admission to a healthcare facility

inspection a fundamental nursing skill by which the nurse visually examines the patient's body for normal and abnormal findings

objective data measurable and observable information collected by the healthcare provider

ongoing assessment assessment conducted continuously, often in response to changes in the patient's condition

percussion the technique of assessing the body's underlying structures based on the sound they make when tapped

physiological crisis a critical situation where the patient's physiological functions are severely compromised, posing an immediate threat to life or health

potential problem risk or condition that a patient is susceptible to but not currently manifesting symptoms of

primary data information provided directly by the patient

problem-focused assessment a targeted examination conducted to assess a specific health issue or symptom identified in a patient

psychological crisis a state of acute emotional or mental distress that significantly impairs an individual's ability to cope with their current circumstances

secondary data information collected from a family member, chart, or other source

subjective data descriptions provided by the patient or family members of the patient's symptoms, feelings, and perceptions

synthesizing the process of integrating, combining, or organizing diverse pieces of information, data, or evidence to develop a coherent understanding, formulate hypotheses, or generate solutions

time-lapsed assessment an assessment conducted when several months have passed since the previous assessment to evaluate the progress of a patient's health over time

Assessments

Review Questions

1. What is the primary focus of a nursing assessment?
   a. to ensure a patient is comfortable and pain free
   b. to refer a patient to the most appropriate specialist
   c. to systematically identify and prioritize a patient's health comzncern
   d. to prescribe appropriate medications based on a patient's symptoms

2. A nurse asks a patient questions to determine the strength of their support network. These questions address what domain of a nursing assessment?
   a. emotional
   b. physical
   c. psychosocial
   d. spiritual

3. What action will the nurse take to use clinical reasoning while assessing a patient?
   a. focus solely on medical history and current symptoms
   b. follow a systematic approach that elicits significant data
   c. rely primarily on the patient's self-diagnosis and perception of illness
   d. limit the assessment to what the patient finds comfortable and convenient

4. Addressing the physical, psychological, emotional, and spiritual dimensions of an individual patient's needs is practicing what kind of care?
   a. homeopathic
   b. heuristic
   c. holistic
   d. hospice

5. What type of comprehensive assessment allows the nurse to check for abnormalities in each body system?

a. cultural/spiritual
b. head-to-toe
c. focused
d. psychosocial

6. What type of nursing assessment is typically conducted upon a patient's admission to a healthcare facility?
a. emergency
b. initial
c. problem focused
d. time lapsed

7. How does a problem-focused assessment differ from an initial assessment?
a. It covers the patient's complete medical history.
b. It is only conducted when a patient has an emergency.
c. It targets a specific health issue identified in the patient.
d. It involves monitoring the patient's progress over several months.

8. When is a time-lapsed assessment most appropriately conducted?
a. immediately before issuing a referral to a specialist
b. immediately after the patient is admitted to the hospital
c. when the patient presents with a life-threatening condition
d. when several months have passed since the previous assessment

9. In emergency nursing assessment, what type of crisis refers to a critical situation where the patient's cardiovascular and respiratory functions are severely compromised, posing an immediate threat to life or health?
a. physiological
b. psychological
c. pathological
d. prelogical

10. What assessment is the nurse using when evaluating progress in a patient who is newly diagnosed with type 2 diabetes and learning how to manage their blood sugars with an insulin pump and glucose checks?
a. emergency
b. initial
c. problem focused
d. ongoing

11. What is a primary source of data during a nursing assessment for a patient who is unable to communicate verbally?
a. medical textbooks
b. the patient's caretakers
c. pharmaceutical guidelines
d. online medical databases

12. The nurse is providing care for a patient who is recovering from surgery. At 0900, the nurse needs to assess the patient's pain level and do a wound check. As the nurse enters the room, they observe the patient trying to get out of bed unassisted, stating, "I need to use the bathroom." The nurse notes the patient is short of breath when speaking and looks pale. What should the nurse prioritize for this patient?
a. oxygen levels
b. assisting to the bathroom
c. pain level
d. wound check

13. When a nurse applies general principles to draw a conclusion about a specific patient case, they are using which nursing skill?
   a. palpation
   b. auscultation
   c. inductive reasoning
   d. deductive reasoning

14. The nurse is assessing a patient in the emergency room who was brought in after a motor vehicle accident. What is an example of subjective patient data collected by the nurse?
   a. pain level
   b. heart rate
   c. temperature
   d. blood alcohol level

15. The nurse is assessing a newly admitted patient. When the nurse asks about any dietary needs, the patient states they are allergic to eggs. What step will the nurse take next?
   a. tell kitchen about patient's food allergy
   b. document patient food allergy
   c. notify provider of patient food allergy
   d. confirm patient food allergy with family

16. What three skills do nurses need to transform raw data collected from their patients into meaningful, actionable information?
   a. clinical judgment, clinical reasoning, critical thinking
   b. initial assessment, problem-focused assessment, ongoing assessment
   c. checking a patient's airway, breathing, and circulation
   d. prioritizing between physiological, psychological, and social needs

17. To effectively engage in critical thinking about patient data, what must the nurse be able to do?
   a. Administer a wide range of medications.
   b. Follow hospital protocols without deviation.
   c. Accurately document vital signs in medical records.
   d. Systematically analyze and evaluate patient information.

18. What process allows nurses to turn details collected from patient assessments into meaningful, actionable information?
   a. clinical judgment
   b. analyzing knowledge
   c. observation
   d. clinical reasoning

19. What step allows the nurse to think about their own experiences, actions, and decisions and learn from them?
   a. conceptualizing
   b. observing
   c. interpreting
   d. reflecting

20. The nurse is assessing a patient and looking at details about the person's appearance and behavior. What skill is the nurse using?
   a. evaluating
   b. analyzing
   c. observation
   d. judgment

Check Your Understanding Questions

1. Why is a nursing assessment important in patient care?
2. Consider the four domains of a nursing assessment. How does each domain contribute to a holistic understanding of a patient's health?
3. Choose two key principles of conducting an assessment with clinical reasoning. Why is each principle important in the assessment process?
4. What is the primary purpose of an emergency assessment?
5. How does a time-lapsed assessment differ from a problem-focused assessment in terms of its timing and objectives?
6. Consider a patient scheduled for surgery. When would the patient likely undergo an initial assessment, and when would they likely undergo a problem-focused assessment? Explain why each type is important in this context.
7. Explain how nurses use their observational skills as a source of data during patient assessments. Provide an example of what a nurse might observe and how it contributes to the assessment.
8. Discuss how a nurse might use Maslow's hierarchy of needs to prioritize care for a patient who has both physiological and psychological needs. Which needs should be addressed first, and why?
9. Describe a situation where a nurse would use inductive reasoning to analyze patient data. How does this reasoning help in formulating a nursing diagnosis or care plan?
10. What is the difference between clinical reasoning, critical thinking, and clinical judgment?
11. Describe how a nurse might use clinical reasoning to determine the cause of a postoperative fever in a patient.
12. How do reflection and interpretation contribute to a nurse's critical-thinking skills when addressing a complex patient case?
13. Explain the steps a nurse should take to effectively implement clinical judgment in managing a patient with severe asthma exacerbation. Describe how the nurse would evaluate the effectiveness of the care plan.

Reflection Questions

1. Imagine you are assessing a patient who has just been diagnosed with a chronic illness. Reflect on how you would address each domain of the nursing assessment (physical, psychosocial, emotional, spiritual) for this patient. How might the approach differ from an assessment for an acute condition? Consider the long-term implications of a chronic illness on each domain and how this would influence your nursing care plan.
2. Reflect on a clinical experience or a case study in which a comprehensive assessment was crucial in identifying and treating a patient's health issue. How did principles of clinical reasoning influence the assessment? Evaluate which principles were the most critical in this scenario and explain how they contributed to patient care and outcomes.
3. Reflect on a clinical scenario where you might encounter a patient with a chronic condition, such as diabetes. How would you use different types of nursing assessments throughout the continuum of this patient's care? Explain how each assessment type would contribute to the patient's overall treatment and care plan, highlighting the importance of each type at different stages of the patient's healthcare journey.
4. Reflect on a clinical scenario in which you had to rely on multiple sources of data to assess a patient. How did you integrate information from the patient, their family, and your nursing skills to form a comprehensive assessment? Which needs and issues did you prioritize during the assessment, and why?
5. Think of a patient case in which you had to analyze a complex set of data. Describe how you used both inductive and deductive reasoning to interpret the data and formulate a plan of care. What patterns did you identify, and how did they influence your clinical decisions?

6. What strategies can nurses employ to systematically analyze patient data and identify relevant clinical findings?

What Should the Nurse Do?

Mr. Thompson, a 65-year-old male with a history of type 2 diabetes, presents to a clinic with complaints of increased fatigue, shortness of breath, and occasional dizziness over the past two weeks. He states that these symptoms have become more pronounced while climbing stairs. His medical history includes hypertension and a recent diagnosis of arthritis. He lives alone and admits to occasionally forgetting to take his medications. Mr. Thompson has a family history of heart disease.

1. Given the primary focus of a nursing assessment, what should be the initial step in assessing Mr. Thompson's condition?
2. How should the nurse evaluate Mr. Thompson's psychosocial and emotional states?
3. What approach should the nurse take to ensure the assessment is complete and systematic? Why is this approach important in Mr. Thompson's case?
4. After conducting the assessment, what are the key considerations for the nurse in terms of clinical reasoning and planning Mr. Thompson's care?

Mr. Lee, a 72-year-old male with a history of COPD, presents to the clinic for a routine follow-up. He mentions feeling shorter of breath than usual over the past week. He also reports a persistent cough and increased fatigue. Mr. Lee lives alone and admits to struggling with his inhaler technique. His last full assessment was six months ago.

5. Identify the type of nursing assessment most appropriate for Mr. Lee at the beginning of this clinic visit. Explain your reasoning.
6. Considering Mr. Lee's history and current symptoms, how should you approach his care differently now than if you were performing an initial assessment?
7. If Mr. Lee's condition were to suddenly worsen during the visit, necessitating an emergency assessment, describe what immediate actions should be taken.

Lena, a 32-year-old teacher, arrives at the emergency department experiencing an acute asthma attack. She is struggling to breathe, is using accessory muscles, and appears anxious. She is accompanied by her partner, who reports that Lena's usual inhaler has not been effective, and she has been experiencing increased stress at work due to her school district's new testing requirements for students.

8. What primary sources of data should the nurse use in Lena's assessment, and why are they significant?
9. Considering Lena's presentation, how should the nurse prioritize her needs during the assessment?
10. How should the nurse analyze the collected data to develop a care plan for Lena? Describe the application of inductive and deductive reasoning in this process.

Nurse Rivera is caring for Mr. Nguyen, a 70-year-old patient who has been hospitalized due to COPD exacerbation. Mr. Nguyen, a long-term smoker, is struggling with severe shortness of breath, experiencing coughing fits, and feeling increasingly anxious about his breathing difficulties. Nurse Rivera is tasked with managing his immediate respiratory needs while also considering his long-term care and lifestyle changes.

11. How should Nurse Rivera use clinical reasoning to assess and prioritize Mr. Nguyen's immediate and long-term care needs?
12. Describe how Nurse Rivera can apply critical-thinking skills in developing a comprehensive care plan for Mr. Nguyen.
13. What steps should Nurse Rivera take to implement and evaluate her clinical judgments in Mr. Nguyen's care?

Competency-Based Assessments

1. Mrs. Rodriguez, a 45-year-old female, was brought to the emergency department by ambulance. Mrs. Rodriguez presents with complaints of severe abdominal pain, nausea, and vomiting for the past twenty-four hours. She reports a history of gallstones and has undergone cholecystectomy (gallbladder removal) surgery five years ago. On initial assessment, Mrs. Rodriguez appears pale and diaphoretic and is in severe pain. Her vital signs include a heart rate of 110 bpm, blood pressure of 140/90 mm Hg, respiratory rate of 22 breaths per minute, and oxygen saturation of 95 percent on room air. What are the actual and potential problems identified in this scenario?

2. Mrs. Smith, a 68-year-old female, has been admitted for exacerbation of chronic obstructive pulmonary disease (COPD). She presents with increased dyspnea, productive cough with purulent sputum, and generalized weakness. Mrs. Smith has a history of smoking for forty years and lives alone in a small apartment. She has been feeling increasingly isolated since her husband passed away three years ago. Explain how the nurse should assess the patient's physical, psychosocial, emotional, and spiritual health.

Nurse Emily is working in a primary care clinic. She is assigned to conduct assessments on three different patients with varying health concerns. Patient A is a 70-year-old male with a history of diabetes and hypertension who presents with complaints of dizziness and shortness of breath. Patient B is a 35-year-old female who recently underwent knee surgery and is experiencing postoperative pain. Patient C is a 45-year-old male who is seeking advice for smoking cessation.

3. For patient A, what type of nursing assessment would be most appropriate, and why?
4. What specific assessments would Nurse Emily prioritize for patient A's complaints of dizziness and shortness of breath?
5. Considering patient B's recent knee surgery, what type of nursing assessment would Nurse Emily conduct for postoperative pain management?
6. What assessments would be included in the problem-focused assessment for patient B?
7. For patient C, what type of nursing assessment would be beneficial in addressing his smoking cessation needs?
8. How would Nurse Emily approach the initial assessment for patient C to gather relevant information for smoking cessation counseling?

You are working as a nurse in the emergency department of a hospital. It is a busy Friday night, and the department is filled with patients requiring urgent care. Suddenly, the emergency alarm rings, signaling the arrival of a critically injured patient. The paramedics rush in with a middle-aged male who was involved in a high-speed car accident. The patient is unconscious and bleeding profusely from a head injury. Vital signs reveal a weak pulse and shallow breathing. The patient's family informs you that the patient has a history of hypertension and diabetes, but they are unsure of any other medical conditions.

9. How would you apply the ABCs framework in prioritizing patient care during this emergency situation?
10. Explain how Maslow's hierarchy of needs can guide your prioritization of care for patients with complex healthcare needs.
11. Provide examples of clues that may indicate underlying health issues during a patient assessment.
12. Discuss the difference between inductive and deductive reasoning and how each can be applied in analyzing assessment data to formulate a care plan.

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CHAPTER 13

Diagnosis and Planning: Analyzing, Prioritizing, and Generating Solutions

FIGURE 13.1 Diagnosis and planning are the second and third phases in the nursing process, following the assessment phase. A thorough assessment is essential to identify a diagnosis and plan for care correctly. (credit: Jason W. Edwards/NARA & DVIDS Public Domain Archive, Public Domain)

CHAPTER OUTLINE

13.1 Evolution of Nursing Diagnosis
13.2 Focus of Nursing Diagnosis
13.3 Categories of Nursing Diagnosis
13.4 Focus of the Planning Phase

INTRODUCTION A fundamental part of working as a nurse is formulating a nursing diagnosis, which guides outcomes and corresponding interventions to achieve patient care goals. It is a dynamic method of assessment and data aggregation that encompasses the depth and breadth of the nurses' scope of practice and, in many situations, serves as a tool to aid in critical thinking. To write and apply an appropriate nursing diagnosis, the nurse must gather patient data incorporating the scientific, physiological, and medical aspects of a patient's situation. The critical thinking skills necessary for this process enable nurses to make clinical judgments based on evidence and experience.

How do nurses learn to do this? How does a nurse learn to think in a way that leads to the appropriate decisions and conclusions? It is one thing to learn clinical knowledge—facts, figures, anatomy, and physiology—but how do nurses learn to go a step further to think critically and apply clinical judgment? The nurse acquires these key skills by creating a systematic method of gathering data, assessing, forming a hypothesis, creating a plan, putting the plan into action, and reevaluating.

This chapter begins with the evolution of nursing diagnoses and a discussion of the nursing process, which is the basis for developing nursing thought. Then, the chapter goes through the various thinkers and theories that moved the development of nursing diagnoses to the newest process in place, the Clinical Judgment Measurement Model (CJMM) developed by the National Council of State Boards of Nursing (NCSBN). The section ends with a discussion on the role nursing diagnosis plays in clinical decision-making, the different categories of nursing diagnosis, and how to formulate the diagnosis from the tools available. Understanding nursing diagnosis is an important part of nursing.

13.1 Evolution of Nursing Diagnosis

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the development and evolution of a nursing diagnosis
- Explain how a nursing diagnosis is used as a problem-solving approach for planning patient care
- Understand the rationale for transitioning to the clinical judgment measurement model

Most people have heard of medical diagnoses, but few outside the healthcare profession know about nursing diagnosis or what its purpose is. The role of nursing has evolved in health care, and in today's healthcare world, it is often up to nurses to facilitate a patient's entry into the healthcare system. There must be a systematic and structured method of obtaining the necessary data to achieve that outcome. The development of nursing diagnosis began with the need for a common language to communicate across the profession.

In carefully constructed, concise statements, the nursing diagnosis identifies patient issues (clinical and psychosocial) and articulates potential causes of the problem. Using this statement structure and medical terminology as part of this system allows a patient with diabetes to go from being described as "a diabetic" or "a person with type 2 diabetes mellitus" to the more detailed and descriptive statement of "risk for unstable blood glucose levels related to insufficient diabetes management." Changing the medical diagnosis to the nursing diagnosis allows the nurse to identify a patient's specific needs—which, in the case of a patient who has diabetes, may be unstable glucose levels. Now, the nurse can develop a plan of care to help the patient manage the identified problem.

Given the many factors involved in caring for complex patients, a common and concise form of communication was essential for the growth of the nursing profession. This problem-solving approach to articulating patient problems or needs is the basis for planning care and interventions, as it lays the foundation for critical thinking.

Development of Nursing Diagnosis

Nursing diagnosis began in the 1960s, first as the nursing process. The **nursing process** is a five-step method of guiding decision-making for nurses:

- assessment
- diagnosis
- planning
- implementation
- evaluation

These five steps of the nursing process are also named by the American Nurses Association (ANA) as the approved Standards of Practice to designate a "competent level of nursing care . . . and forms the foundation of the nurse's decision-making" (American Nurses Association [ANA], 2015a). However, more standardization and commonality were needed to develop this process further. In the 1970s, the North American Nursing Diagnosis Association (NANDA) developed a list of nursing diagnoses, which were delineated, patient-focused statements formed through this nursing process and selected through patient assessment.

A methodical way to provide and evaluate appropriate patient care is called **nursing diagnosis**. These diagnoses were updated and modified several times throughout the next four decades, with the last update in 2024 of *NANDA-I International Nursing Diagnoses: Definitions & Classification, 2024–2026,* 13th edition by T. Heather Herdman, Shigemi Kamitsuru, and Camila Lopes.

The NANDA diagnosis list utilizes a problem-solving approach that helps provide individualized nursing care to

patients. In short, it provides a framework for decision-making based on collected data related to the patient's condition. Articulating these nursing-focused problems as diagnoses created a way for nurses to begin their patient care in a planned and organized fashion, and using the NANDA-approved diagnoses gave nurses the common language to understand these interventions across the profession.

Nursing diagnosis became the foundation of what makes nursing a distinct and autonomous profession in health care. The dynamic ability of nursing diagnoses enables nurses to address multiple facets of their patients' healthcare needs, including clinical, pathophysiological, psychosocial, and environmental.

Nursing diagnosis is a step-by-step way to gather patient data and to create, deploy, and evaluate a plan for patient care. It helps nurses conduct research and drives quality initiatives in clinical and outpatient settings. Most importantly, it provides a common language and decision-making framework that enable nurse educators to teach future generations of nurses.

LINK TO LEARNING

This quick video explains how to write a nursing diagnosis (https://openstax.org/r/77nursediag) when developing patient plans of care.

ANA Standards of Practice

The **Standards of Practice** designed by the ANA and based on the nursing process provided a problem-solving-focused approach to nursing practice. The Standards of Practice was the beginning of the definition of nursing as a clinically, technically rigorous, and autonomous profession. Within the Standards of Practice, the ANA defines the job of the nurse as including "the diagnosis and treatment of human responses to actual or potential health problems" (ANA, 2015b). This statement and these standards bolster the strength of nursing diagnosis as a decision-making tool of an autonomous profession. These standards outline the level of care that should be provided by a competent level nurse modeling the nursing process as a critical thinking model.

ANA Competencies for Nursing Diagnosis

The nursing process has six competencies that nurses use as part of their critical thinking process and decision-making (ANA, 2015a). As you learned in 12.4 Cognitive Process for Analyzing Assessment Data, critical thinking describes a process of thought that uses structured methods of observation, reasoning, and thought to make educated and rational decisions. Critical thinking sets nurses apart from those who simply "follow orders." Steps in the nursing-specific critical thinking process include the following:

1. Assessment: The nurse gathers data from the patient's history and physical symptoms and compares them to normal values. Refer back to Chapter 12 Assessment: Recognizing Cues for a recap on nursing assessment.
2. Diagnosis: The nurse groups the data and uses them to focus on one or more patient problems. These problems can then be prioritized.
3. Identifying expected outcomes: The nurse focuses on one problem and then thinks about the best end result or desired outcome for this specific patient.
4. Creating a plan to achieve these expected outcomes: The nurse will decide on planned activities the patient must complete to meet the determined result or desired outcome. These are tasks that the patient must be able to do alone or collaboratively with healthcare professionals.
5. Implementing the plan: This is the phase in which the patient completes the planned activities. This step is where the action happens.
6. Evaluating the plan's effectiveness: The nurse reviews the patient's progress toward the desired outcome or intended results. Was the goal met—fully, partially, or not at all? Is the patient making progress toward the intended results? Does anything about the plan need to be changed? Or can it continue as planned? Or, perhaps, more time is needed for the patient to achieve the goal? The answers to these questions will determine if the plan is continued, modified, or discontinued completely.

It is important to note when engaging in this process that nurses do not only consider the patient themselves but all those involved in providing care. Families, significant others, loved ones, and perhaps even friends can all be part of the patient's support network. Therefore, each of them has a collaborative part in this process alongside the patient.

Problem-Solving Approach

The problem-solving approach to planning patient care nursing began with the development of a diagnosis and identifying the relevant problems. To pinpoint those, the nurse must conduct an assessment. The nurse's assessment is focused on the collection and analysis of clinical data.

The first data point is the patient's problem. The nurse must start by identifying the patient's chief complaint. Using collected data referred to as the patient's signs and symptoms, the nurse will determine if the identified problem is currently happening or at risk of happening. The problem-solving approach to care planning gives the nurse a clear starting point to assign interventions and evaluate their effectiveness.

Methods to complete the problem-solving approach have evolved over time and consist of three tactics. The first was NANDA-I, followed by Tanner's Clinical Judgement Model (CJM), which transitioned into the Clinical Judgement Measurement Model (CJMM). Research states that no one tactic is better than the other; rather, nurses should be able to incorporate a combination of all three.

NANDA International (NANDA-I)

In 2002, NANDA officially became NANDA International. The name changed again in 2011, to NANDA International, Inc., after considering the significant growth of membership outside North America. The organization continues to use "NANDA" as part of its name due to its familiarity (NANDA-I, 2024). However, "NANDA" is no longer the appropriate acronym. The organization is now known as **NANDA-I**, whose purpose is still to facilitate the development, modification, distribution, and use of standardized nursing diagnostic terminology.

NANDA-I nursing diagnoses are easily identified as clear statements written and developed by the evidence-based organization. The terminology gives nurses a starting point for the problem-solving approach used to develop a nursing diagnosis. For clarity, the organization created a taxonomy, or classification system, for arranging or listing the patient's identified problem. In 2002, the work of Dr. Mary Gordon's Functional Health Assessment Patterns was used as the framework to develop what is known as Taxonomy II. **Taxonomy II**, the current classification method for listing nursing diagnoses, has three levels: domains, classes, and nursing diagnosis (Figure 13.2).

TAXONOMY II Classification Method for Nursing Diagnosis	
DOMAIN 1 • Health promotion **Class 1:** Health awareness **Class 2:** Health management **DOMAIN 2 • Nutrition** **Class 1:** Ingestion **Class 2:** Digestion **Class 3:** Absorption **Class 4:** Metabolism **Class 5:** Hydration **DOMAIN 3 • Elimination/Exchange** **Class 1:** Urinary function **Class 2:** Gastrointestinal function **Class 3:** Integumentary function **Class 4:** Respiratory function **DOMAIN 4 • Activity/Rest** **Class 1:** Sleep/Rest **Class 2:** Activity/Exercise **Class 3:** Energy balance **Class 4:** Cardio-vascular/Pulmonary responses **Class 5:** Self-care **DOMAIN 5 • Perception/Cognition** **Class 1:** Attention **Class 2:** Orientation **Class 3:** Sensation/Perception **Class 4:** Cognition **Class 5:** Communication **DOMAIN 6 • Self-perception** **Class 1:** Self-concept **Class 2:** Self-esteem **Class 3:** Body image	**DOMAIN 7 • Role relationship** **Class 1:** Caregiving roles **Class 2:** Family relationships **Class 3:** Role performance **DOMAIN 8 • Sexuality** **Class 1:** Sexual identity **Class 2:** Sexual function **Class 3:** Reproduction **DOMAIN 9 • Coping/Stress tolerance** **Class 1:** Post-trauma responses **Class 2:** Coping responses **Class 3:** Neuro-behavioral stress **DOMAIN 10 • Life principles** **Class 1:** Values **Class 2:** Beliefs **Class 3:** Value/Belief/Action congruence **DOMAIN 11 • Safety/Protection** **Class 1:** Infection **Class 2:** Physical injury **Class 3:** Violence **Class 4:** Environmental hazards **Class 5:** Defensive processes **Class 6:** Thermo-regulation **DOMAIN 12 • Comfort** **Class 1:** Physical comfort **Class 2:** Environmental comfort **Class 3:** Social comfort **DOMAIN 13 • Growth/Development** **Class 1:** Growth **Class 2:** Development

FIGURE 13.2 Taxonomy II is a classification system used to organize, define, and list nursing diagnoses according to domains of care. This system allows nurses to use a problem-solving approach to planning patient care. (data source: Herdman & Kamitsuru, 2018; attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The domains are broken out into thirteen groups. The domains consist of topics such as health promotion, activity, comfort, and safety. The domains are further organized into forty-seven classes directly related to each domain. For instance, the domain of health promotion has two classes: health awareness and health management. The domain of comfort has three classes: physical comfort, social comfort, and environmental comfort. The nursing diagnoses are coded according to seven different criteria and include the diagnostic concept, time, unit of care, age, health status, descriptor, and topology.

In addition, nursing diagnoses are listed alphabetically by their concept, not by the first word in the diagnosis. NANDA-I and Taxonomy II are both used today in clinical practice as a problem-solving approach to clinical decision-making.

Tanner's Clinical Judgment Model (CJM)

After years of growing the nursing profession to one that is based on evidence and research, nurses started to realize that only those experienced in the profession could truly understand how to incorporate NANDA-I and the development of a nursing diagnosis into the patient's plan of care accurately and efficiently. New nurses were

struggling with not knowing what they didn't know.

In 2006, a nursing educator, Christine Tanner, published a researched model of clinical judgment, which was the product of extensive research and synthesis used to identify the essential themes of how new nurses develop strong clinical judgment skills (Tanner, 2006). **Tanner's Clinical Judgement Model (CJM)** is a helpful framework that offers a different articulated perspective to the problem-solving approach for developing nursing diagnoses. Tanner's model consists of four steps (Tanner, 2006):

- Noticing: What are the clinical cues, and why are they relevant? The key to effective nursing and safe patient care begins with the ability to recognize when the data are relevant and important.
- Interpreting: What do the data mean? Understanding the data and processing them in terms of the patient's pathophysiology is essential to interpreting the data correctly.
- Responding: Now that the nurse has recognized necessary data and has interpreted them correctly, what is the course of action taken by the nurse? Knowing the appropriate response is key to planning and implementing an intervention.
- Reflecting: Once the plan is implemented and the intervention accomplished, it is time to reassess and see if the patient's response to the intervention was as expected. Tanner elaborates on this last step by identifying two methods of reflection:
  - Reflection *in* action—decisions that are made to the plan of care immediately and in the moment.
  - Reflection *on* action—thinking done after the care is provided to determine if the decisions made were the right ones, and if not, what could be done differently going forward (Rischer, 2020).

PATIENT CONVERSATIONS

A Therapeutic Conversation: Responding

Scenario: A patient is in the medical-surgical floor and is complaining of pain. The nurse was called to the room to assess the situation.

Nurse: Good morning, Levi. How are you feeling today?

Patient: Not so good, the pain in my back is still bothering me.

Nurse: I'm sorry to hear that. Can you tell me more about your pain?

Patient: It's a sharp pain in my lower back, and it gets worse when I try to move. Right now, it's a 9 out of 10.

Nurse: I see you have been taking your pain medication the doctor ordered. Does the medication seem to help your pain?

Patient: Not really, even when I take the pain medication it only comes down to a 7 out of 10. They helped for a little while, but the pain comes back so strong, well before my next does is available.

Nurse: I understand. I am going to call your provider to discuss possible options to help with your pain.

Patient: Thank you. I appreciate you listening and responding to my needs.

Tanner's model is important because of what sets it apart from the nursing process. Its focus was to help develop the beginning nurse's clinical judgment skills, as they have no prior nursing experience. The realistic assumption is that nurses need to be taught through a combination of education and clinical experience. The model reframes the thought processes that are needed for clinical judgment.

Transition to the Clinical Judgment Measurement Model (CJMM)

However, healthcare technology continues to evolve, and patient populations are becoming increasingly complex with both clinical and psychosocial demands. It has now become clear that while North American Nursing Diagnosis Association (NANDA) provided a good framework for developing nursing diagnoses, it does not always work well with the complexities of today's patient needs.

For example, unexpected changes in patient conditions require immediate changes to the plan of care. Many of

these unexpected changes do not fit into a ready-made diagnosis. Nurses started having trouble thinking outside the box.

As a profession, nurses realized they needed to develop critical thinking and clinical judgment skills that are required to dynamically revise nursing diagnoses as needed. This need led to the development of a more flexible and focused method of learning how to think and develop clinical judgment skills, the Clinical Judgement Measure Model.

The Clinical Judgment Measurement Model (CJMM) is the latest framework developed by the National Council of State Boards of Nursing (NCSBN) to aid in identifying nursing-focused clinical problems. The CJMM is based on the most current research and literature in nursing pedagogy, nursing science, and psychology (NCSBN, 2020) (Figure 13.3.

Comparing the Clinical Judgment Measurement Model (CJMM)

Tanner	**Noticing**	**Interpreting**			**Responding**	**Reflecting**
Nursing Process	**Assessment**	**Analysis**		**Planning**	**Implementation**	**Evaluation**
CJMM	Recognize cues	Analyze cues	Prioritize hypotheses	Generate solutions	Take actions	Evaluate outcomes
Example	*A patient is breathing 22 times a minute and states, "I can't catch my breath. My head hurts."*	*The nurse recognizes that the patient is in respiratory distress.*			*The nurse raises the head of the bed, and tells the patient to take deep breaths and breathes with them while making eye contact. A nasal cannula is also applied to give supplementary oxygen to the patient.*	*The nurse observes the patient and looks for signs of improvement or deterioration. If the patient is doing well then the nurse will make sure the situation is safe and then notify the healthcare provider about the incident and document it in the chart.*

FIGURE 13.3 Understanding that the basis of the CJMM lies in the frameworks of the nursing process and Tanner's model of clinical judgment. Although the three types of clinical judgment models are interrelated, the Clinical Judgment Measurement Model refines the methodology and improves decision-making by adding two levels of modeling thought that help build complexity into decision-making. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

The NCSBN created the Clinical Judgement Measurement Model (CJMM) (https://openstax.org/r/77CJMM) to explore new ways of testing clinical judgment in nursing as part of the National Council Licensure Examination (NCLEX). The diagram at this site shows the layers of the model.

The CJMM incorporates elements of the nursing process and Tanner's model of clinical judgment with two additional levels of modeling thought that help build complexity into decision-making. Understanding the components of this framework provides yet another method of clinical decision-making.

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize a Hypothesis: Developing a Nursing Diagnosis

A nurse hears a patient's vital sign monitor go off. She walks into the room and sees several things at once: the patient looks very uncomfortable—they are grimacing, their eyes are wide, their skin is pale, and they are diaphoretic (sweaty). The patient's respirations are 22 breaths a minute, and he is saying, "I can't catch my breath, and my chest hurts." His blood pressure is elevated at 160/90 mm Hg, heart rate is 128 beats per minute, and the patient is sitting up in bed in a tripod position. The nurse quickly asks how the patient is feeling, and they respond with, "I can't catch my breath, and I don't feel good at all."

- Recognizing cues: The nurse swiftly identifies alarming cues, including the patient's grimacing, diaphoresis, and complaints of difficulty breathing and chest pain. These cues prompt immediate attention and further assessment.
- Analyzing cues: Through rapid analysis, the nurse interprets the patient's symptoms as indicative of distress. Recognizing the urgency, the nurse correlates the respiratory distress with elevated vital signs, indicating a potential critical condition.
- Prioritizing a hypothesis: Prioritization comes from Airway, Breathing, and Circulation (ABCs) in acute or emergent situations. ABCs is an effective priority framework that focuses on lifesaving interventions. Understanding the gravity of the situation, the nurse prioritizes hypotheses focused on acute respiratory distress or cardiac compromise, recognizing the patient has a potential breathing and circulation issue. This prioritization will guide subsequent interventions and decision-making.

Based on the presented scenario, a potential nursing diagnosis for the patient could be "impaired gas exchange related to inadequate ventilation secondary to respiratory distress as evidenced by tachypnea (22 breaths per minute), dyspnea ("I can't catch my breath"), elevated blood pressure (160/90 mm Hg), elevated heart rate (128 beats per minute), diaphoresis, and the patient's inability to lie flat (sitting up in bed in a tripod position)."

Six Cognitive Skills

The CJMM includes six cognitive skills each nurse must master to think critically through a patient care situation. The cognitive skills needed to implement the CJMM are as follows:

- Recognize Cues can be defined as identifying relevant clinical data using multiple sources available to the nurse, including the presenting scenario, medical history, vital signs, nursing assessment, and laboratory values, then extracting important clinical data from these sources.
- Analyze Cues can be defined as taking the data that have been collected and interpreting it using an existing knowledge base. It also includes organizing the clinical data, recognizing patterns, and generating hypotheses regarding the clinical cues collected.
- Prioritize a Hypothesis is described as using the data articulated as hypotheses, narrowing down what the most pressing problem is, and thus identifying which is the priority.
- Generate Solutions is determining the expected outcomes or goals for the patient. This skill also includes developing a plan of care and identifying nursing interventions that need to be in place to bring about the expected outcome.
- Take Action can be described as implementing the solutions generated that will address the identified priority hypothesis as well as subsequent priorities as they exist. This requires nurses to determine which interventions are the most appropriate and to implement them in order of importance to the patient's health and well-being.
- Evaluate Outcomes is determining whether patient outcomes were met. They can be either fully or partially met and may require revision to continuously work toward achieving the expected outcome. They can also be marked as complete if it is determined that the outcome has been achieved.

LINK TO LEARNING

Read this evidence-based research article on the importance of critical skills in nursing (https://openstax.org/r/77critskills) to learn how they are used to develop critical thinking.

The six cognitive steps are needed to incorporate the CJMM into developing accurate and efficient critical thinking skills. As nurses transition from school to clinical settings, they will understand the six cognitive skills and how practicing nurses really think when determining the best possible care for their patients.

13.2 Focus of Nursing Diagnosis

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the foundational steps for clinical decision-making
- Recognize the difference between a nursing diagnosis and a medical diagnosis
- Identify how the nursing diagnosis can promote expected patient care outcomes

This section discusses the focus of nursing diagnosis. Just as the focus of each role for different healthcare clinicians varies, so does the focus of the nursing diagnoses. The primary focus is for the nurse to explain why the patient needs nursing care versus medical care. The diagnosis identifies nursing care that treats a patient's problem or concern and can be performed independently by the nurse instead of the provider.

This section analyzes foundational steps for clinical decision-making using a model that focuses on preventing problems or issues. It also discusses the differences between nursing and medical diagnoses and explores how these differences highlight the uniqueness of each profession. This section also demonstrates how nursing diagnosis promotes the desired patient outcome.

Foundation for Clinical Decision-Making

Before the evolution of nursing diagnosis and the autonomy of the profession, the healthcare mindset was to have providers diagnose while nurses treat and care for patients. Hence, the foundation of the nursing profession is to care for those in need. Since the evolution of an autonomous profession that collaborates with other healthcare clinicians, the trend has shifted to place more value on the nurse, basing patient care on evidence-based research and incorporation of clinical decision-making.

The foundational steps for incorporating clinical decision-making for patient care are to predict, prevent, manage, and promote (PPMP). Through evidence-based interventions, nurses can address their patients' needs by predicting potential problems, preventing problems before they start, managing problems when they do arise, and providing health promotion strategies.

Predict

In the presence of known problems, nurses must predict the most common and dangerous complications associated with each problem. This involves looking at the big picture and thinking about the best and worst possible outcomes. The best outcome will show signs and symptoms of the patient's progress toward recovery. In contrast, the worst outcome will represent signs of patient deterioration and decompensation.

The nurse must always be thinking two steps ahead. While it sounds daunting, most people use this thinking in daily life without realizing it. For example, most people wouldn't just hit the open roads on a road trip without thinking first about their destination or plan to get there. It takes a plan to make sure the trip is enjoyable and goes off without a hitch.

Prevent

The nurse has a primary role in keeping the patient safe. This responsibility means nurses are constantly looking for potential problems and determining how to prevent them from happening. Think of the road trip example again. Getting the car's oil and tires checked, mapping out the route, and packing extra snacks and water in case of a breakdown on the road are all steps that can be taken ahead of time.

The same planning applies when using thinking skills in clinical decision-making. Nurses must think through the many possible scenarios that could happen to a patient and carefully put measures in place to prevent the worst scenarios from taking place. Nurses must be ready to take immediate action when a potential problem becomes an actual problem.

Manage

If a potential problem cannot be prevented, the nurse will initiate the management phase. This step includes managing the problem through interventions such as involving the patient in decision-making, using evidence-based sources and protocols, and asking other interdisciplinary team members to collaborate on care if needed. The nurse will organize monitoring of the patient to be watchful for signal changes in a patient's condition or deterioration.

The road trip example applies here, too. What if a car's tire blows out? Some people may change the tire themselves, while others would call a rescue service such as a tow truck company or a local mechanic. What they would *not* do is sit on the side of the road and wait for the tire to fix itself. The same goes for nursing care for identified patient problems. The nurse must manage the situation to prevent the patient's situation from getting worse.

Promote

The nurse always ensures that the safety and learning needs of the patient are being met by promoting peak functioning and independence. Patients will not need nurses forever. The nurse will actively encourage a patient to heal and self-manage their disease or condition. Often, the most natural way to promote health is to include the patient in their care. A patient will become empowered to protect their own well-being by learning to identify the signs and symptoms of potential problems. While the nurse has knowledge about disease management, the patient has a front-row seat to the actual problem and the effects it has on their quality of life.

Just like a driver would promote their own safety and the safety of their passengers while on a road trip, safety is at the forefront of all nursing interventions regardless of outcome. The knowledge and experience gained from a specific patient scenario informs future scenarios and provides information for how to plan for, prevent, and manage any complications.

As the nurse starts interpreting and analyzing data to predict, prevent, manage, and promote, they may identify the need for collaborative care to ensure the best possible outcomes for a patient. For example, perhaps the provider will need to re-evaluate the patient's medical diagnosis or order new diagnostics. Maybe other interdisciplinary team members need to initiate interventions such as wound care, physical therapy, or respiratory therapy. In such situations, the nurse is responsible for reporting their findings and working collaboratively with each discipline to resolve the identified patient problem.

Nursing Diagnosis versus Medical Diagnosis

A **medical diagnosis** identifies a disease or a condition and describes a problem toward which providers direct the treatment plan. Treatment plans focus on the **etiology**, the cause (or causes) of a specific disease state. A nursing diagnosis identifies a patient's response to health and illness-related problems. The diagnosis process is performed independently within the nurse's professional scope of practice. It is also fluid and ever-changing based on the patient's response to interventions. These key distinctions reflect the differences between medical and nursing diagnoses (Table 13.1).

	Nursing Diagnosis (Care-Focused)	Medical Diagnosis (Etiology-Focused)
Definition	Identifies the signs and symptoms of the disease stated by the patient and their caregiver(s)	Identifies the clinical process behind the disease itself and the pathophysiology responsible for its cause
Focus	Emphasis is on the person and their physiological and/or psychological response to the illness	Emphasis is on the illness or condition
Example 1	Ineffective cardiac tissue perfusion related to reduced coronary blood flow	Myocardial infarction (heart attack)
Example 2	Risk for aspiration related to altered sensory perception	Cerebrovascular accident (stroke)
Example 3	Risk of deficient fluid volume related to gastrointestinal losses and NPO status	Small bowel obstruction

TABLE 13.1 Nursing Diagnosis versus Medical Diagnosis

It is important to remember that a nursing diagnosis is based on the patient as a whole person and includes physical, mental, and social factors. The patient's response to the disease process affects all of these domains of their life, so they must be part of the plan of care. The nurse considers actual responses and potential risks. They also look at how areas of concern could affect psychosocial factors, such as family or community support, access to resources, healthcare access in general, and financial barriers to care.

The nurse must also be aware of their own potential biases when doing assessments. These biases can present with preconceived notions about particular groups or situations and may ultimately affect how nurses provide care. Poor outcomes could look like inadequate patient assessment, inappropriate diagnosis and treatment plans, or the lack of education and follow-up for the patient and family.

Actual Problems

Another important consideration is that disease processes do not affect all patients in the same way. As such, the same nursing diagnosis will not fit every patient with the same medical diagnosis. The nurse must ensure the diagnosis chosen is an actual problem or a problem the individual patient is or could potentially experience. Actual problems are discussed in the context of nursing assessment in [link to: Chapter 12, section 12.1 H4]Actual Problems[/link].

A common example of this would be the medical diagnosis of diabetes in two different patients. One patient goes home and asks their entire family for help, changes their diet, and begins to exercise every day. The second patient internalizes the medical diagnosis, feels depressed and ashamed, and keeps the diagnosis a secret from their family and friends. The patient goes for walks occasionally but gives up when the weather gets hot in the summer.

The first patient was energized and ready to learn how to manage the disease and change their life in response to it. Their plan of care might start with a nursing diagnosis, such as "readiness for enhanced knowledge." The nurse could provide education related to disease management. The second patient is not coping well with the new diagnosis. They have isolated themselves by not involving family and will have less-than-optimum outcomes if they do not change their mindset. The patient's response to the diagnosis must be addressed before the nurse can start to educate the patient on how to manage the disease. This patient's plan of care might start with a nursing diagnosis of "ineffective coping." The nurse would need to provide the patient with education on healthy coping mechanisms and how they affect disease progression. The nurse may connect the patient with community support and resources.

Nursing Diagnosis versus Collaborative Problem

A nursing diagnosis is also different from a **collaborative problem**. Collaborative problems require interdisciplinary team members to complete. Response to these problems can be initiated by the provider, the nurse, or another discipline, but the responsibility of ensuring the task is completed falls on the nurse.

When the nurse identifies an expected outcome or goal, if it cannot be initiated without a medical order, then it is not a nursing diagnosis. Rather, it is a collaborative problem. For example, perhaps the nurse is planning care for a patient who has just undergone a knee replacement. The nurse recognizes the patient has "impaired physical mobility" and recommends a goal of "the patient will walk to the nurses' station and back without assistance before discharge." This task cannot be completed without the provider writing an order for physical therapy (PT) to evaluate and treat the patient. Therefore, it is a collaborative problem and not a nursing diagnosis. If the patient reports severe pain and cannot tolerate PT, the nurses could write a nursing diagnosis of "impaired physical mobility related to pain" and would need to administer medication before physical therapists can work with the patient.

Collaborative problems and nursing diagnoses are often intertwined. Therefore, it is imperative that collaborative problems are identified early within the treatment plan so that preventive nursing care can be initiated sooner rather than later.

Another way to think of collaborative problems is as interdisciplinary problems. See Table 13.2 for a side-by-side comparison of nursing and medical diagnoses with collaborative problems. Any time another interdisciplinary team member is involved in a patient's plan of care, it is a collaborative problem. Nurses can use nursing-prescribed actions within the scope of their license and skill set to carry out provider-prescribed orders. The focus of collaborative problem-solving is monitoring patients for changes in clinical status, understanding who can best address the identified problem, and recommending new interventions. Nurses not only utilize appropriate nursing interventions but can also implement treatments as prescribed by providers.

Nursing Diagnosis	Collaborative Problem	Medical Diagnosis
Disturbed body image	Need for prosthetic: rehabilitation therapist to fit for prosthetic device	Amputation
Ineffective airway clearance	Need for chest physical therapy (CPT): respiratory therapist to perform chest physiotherapy	Pneumonia
Imbalanced nutrition	Need for specialized diet: dietician to evaluate and treat	Malnutrition: failure to thrive
Ineffective activity tolerance	Potential complications related to respiratory failure: cardiopulmonary rehabilitation	Chronic obstructive pulmonary disease (COPD)
Total self-care deficit	Potential complications related to deconditioning: occupational therapy (OT)/speech therapy (ST)/physical therapy (PT) to assist with activities of daily living	Cerebrovascular accident (stroke)

TABLE 13.2 Nursing Diagnoses, Medical Diagnoses, and Collaborative Problems

Potential Complications

It is important to remember that a nursing diagnosis is not based on a medical diagnosis—it's based on a patient's response or reaction to their condition or disease. Nurses use information gathered during the assessment process and analyze the data collected. Determining a healthy response from a nonhealthy response is not as easy as it sounds. To avoid making a **diagnostic error** or failing to identify a response as unhealthy, the nurse must incorporate common evidence-based comparative standards when interpreting and analyzing data.

Recognizing which data are significant data is an important first step in preventing potential complications. For example, a blood pressure of 136/88 mm Hg may be considered elevated for a patient without a history of high blood pressure. However, the same blood pressure could be considered normal for a patient with a medical diagnosis of hypertension. According to the National Institutes of Health (NIH), some common comparative standards to use when analyzing patient data include the following:

- Unexplained changes in normal health patterns such as growth and development.
  - Example: A 7-year-old child suddenly develops an inability to control their bladder.
  - Rationale: Most 7-year-old children have bladder control.
- A marked change from what is considered a population norm.
  - Example: A previously social teenager suddenly becomes withdrawn and isolates themselves from peer interactions.
  - Rationale: Depression is linked to a sudden change in social habits.
- Personal behavior that is described as nonproductive to the body as a whole (Young et al., 2023).
  - Example: A college student suddenly loses weight and is seen binging food after being accepted to the cheerleading team.
  - Rationale: Unhealthy nutritional habits and a negative self-perception are dysfunctional and have negative implications for one's health.

REAL RN STORIES

Patient Education to Prevent Potential Complications

Nurse: Marilynn, RN
Clinical setting: Primary care office
Years in practice: 2
Facility location: Southern Indiana

One day when I was working, a mom brought her 11-year-old daughter in for her yearly well-child visit. The mom said things are going great, the only thing she has been having an issue with is difficulty getting her daughter to drink milk or eat any dairy products. The mom reported, "I do not really see it as a problem because I do not like milk or dairy, either." I asked if the daughter's diet consisted of other sources of calcium. The mom said, "No, not really, we like snack-style foods like pastries and pizza." I educated the mom on the importance of a well-balanced diet, but especially the need for calcium in her daughter's diet as well as in her own diet. I discussed bone formation at this age in growth and development, and talked about how her daughter was in her formative years. I got some supplemental printouts to help the mom select some foods rich in calcium that the daughter might like. After reviewing the list of foods, the mom said, "Oh, we love walnuts and almonds. I will make sure to keep a good supply of those on hand. We can try to incorporate some of these other options, too."

Promotion of Expected Outcomes

Articulating outcomes is similar to goal setting when conducting patient and family education. Like planning goals, planning nursing outcomes from interventions should be clear, focused, and SMART—specific, measurable, achievable, relatable, and timely. The difference is that the outcomes are not measured solely on achieving a goal—rather, they are based on the progress toward attaining the desired outcomes.

LINK TO LEARNING

This article outlines SMART goals (https://openstax.org/r/77SMARTgoals) in nursing practice.

Many times, nurses will see several problems occurring for a patient at the same time. This means that one patient can have several nursing diagnoses. For example, they may have problems with pain, a wound, and a cough. The nurse must formulate these diagnoses and think about the common threads between them. It's necessary to consider how the diagnoses are related and, subsequently, how interventions can be planned and implemented to

address multiple diagnoses.

13.3 Categories of Nursing Diagnosis

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how to determine the category for the nursing diagnosis
- Describe how to validate the nursing diagnosis
- Explain how to refine the nursing diagnosis

To make safe and effective clinical judgments using nursing diagnoses, nurses need to understand how the diagnoses are categorized. The categories also differentiate nursing diagnoses from medical diagnoses.

This section discusses the different nursing diagnosis categories and explains how to identify a valid and appropriate diagnosis for a patient's condition. The discussion also covers how nurses refine a nursing diagnosis to make it more specific and beneficial, thereby promoting positive outcomes for patients.

Determine the Category

Throughout the evolution of nursing diagnosis and the formation of NANDA-I, the organization of categories has been simplified to accommodate the simultaneous progression to an electronic database.

NANDA-I developed a structure that allowed for the expansion of the classification structure without having to change codes when new diagnoses, refinements, and revisions are added (NANDA-I, 2020). This is accomplished through a five-digit code. The code structure is compliant with recommendations from the National Library of Medicine concerning healthcare terminology codes.

The categories for nursing diagnosis can be broken down into problem-focused, risk, health promotion, and syndrome (Figure 13.4). Knowing in which category a diagnosis belongs helps the nurse direct their thought process when planning care and strengthens their critical thinking skills.

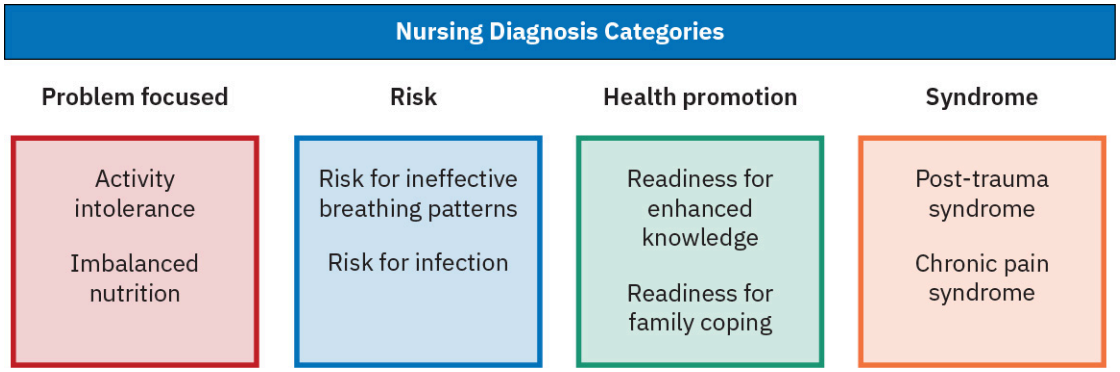

FIGURE 13.4 These are examples of nursing diagnosis categories. Having a solid understanding of each category allows nurses to provide effective patient care through proper identification and application of diagnoses to each individual patient. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

This tutorial provides NANDA-I -approved nursing diagnoses (https://openstax.org/r/77NANDAI)to help students develop an understanding of grouping nursing diagnoses.

Problem-Focused Diagnosis

An actual problem identified or recognized during the assessment process falls into the problem-focused category of nursing diagnoses. Unwanted responses to a health condition would be a **problem-focused diagnosis**. They are identified or based on the presence of clinical signs and/or symptoms and are the foundation for nursing diagnosis selection.

A problem-focused nursing diagnosis has four components: label, definition, defining characteristics, and related

factors. These components will be discussed further in this section. Examples of problem-focused nursing diagnoses include

- impaired mobility related to musculoskeletal injury as evidenced by limited range of motion and difficulty ambulating;
- ineffective breathing pattern related to chronic obstructive pulmonary disease (COPD) as evidenced by shortness of breath and use of accessory muscles for breathing;
- impaired skin integrity related to pressure ulcer on sacrum as evidenced by erythema and skin breakdown; and
- ineffective coping related to the recent loss of a loved one as evidenced by tearfulness and social withdrawal.

Risk Diagnosis

A **risk diagnosis** is developed through clinical judgment based on the vulnerability of the patient's individualized situation. A risk diagnosis is recognized when the nurse identifies a potential problem that can/will develop if no intervention is initiated. This is in direct contrast to a problem-focused diagnosis, which is based on the actual presence of signs and symptoms rather than the potential for a problem's development. Risk diagnoses are broader and used to cover the "what if" situations that could occur. For example, consider an older adult living alone with vertigo. In this patient's case, the risk diagnosis would be "risk for falls." The patient has not yet fallen, but their situation lends itself to putting them at risk for this outcome.

Examples of risk nursing diagnoses include

- risk for falls related to history of falls, impaired mobility, and use of sedative medications;
- risk for infection related to compromised immune system secondary to chemotherapy treatment;
- risk for aspiration related to dysphagia and impaired gag reflex; and
- risk for impaired skin integrity related to immobility and prolonged bed rest.

Health Promotion Diagnosis

A **health promotion diagnosis** can help promote and improve a patient's overall well-being and health, as well as their family/support structure/community. The diagnoses are not about identified problems or potential risks but about potential benefits based on the patient's current situation. This category of nursing diagnosis is more concerned with the patient's motivation and desire to improve their overall well-being and increased quality of life.

Examples of health promotion nursing diagnoses include

- readiness for regular exercise related to expressed interest in starting a fitness program;
- readiness for health literacy enhancement related to limited understanding of medication management;
- readiness for enhanced nutrition related to expressed desire to improve dietary habits and increase intake of fruits and vegetables; and
- readiness for smoking cessation related to acknowledgment of health risks associated with smoking and expressed willingness to quit.

Syndrome Diagnosis

The last category, according to NANDA-I, is syndrome diagnosis. A **syndrome diagnosis** occurs when a group or cluster of nursing diagnoses can be utilized based on certain life events or situations. The diagnosis can be actual, risk, or health promotion, but all are commonly used for the patient's situation.

Evidence-based research shows that most people who experience trauma will go through certain phases of healing and experience many of the same signs and symptoms. A syndrome diagnosis is not a "one-and-done" tactic, meaning that the nurse must ensure a diagnosis still relates to the individual patient. That said, it is a helpful way to identify several potential nursing diagnoses based on a specific life event.

Examples of syndrome nursing diagnoses include

- chronic pain syndrome related to neuropathic pain secondary to diabetic neuropathy as evidenced by reports of persistent pain and altered sleep patterns;
- chronic fatigue syndrome related to chronic illness and sleep disturbances, as evidenced by reports of profound fatigue despite adequate rest;
- post-traumatic stress syndrome related to a traumatic event as evidenced by flashbacks and hypervigilance;

and

- disorganized infant feeding syndrome related to maternal anxiety and lack of breastfeeding support.

Validate the Nursing Diagnosis

The validation stage comes after the identification of a nursing diagnosis. To **validate** means confirming the chosen diagnosis is appropriate for the individual patient using evidence to support it. While NANDA-I has developed a database that transitioned to digital format seamlessly (and it makes the identification of nursing diagnosis easier, based on the data collected and documented in the electronic health record), it is still crucial for the nurse to take the extra step to manually validate the diagnosis. There are several key factors used to prove validity. The following are a few questions the nurse can use to help validate the chosen diagnosis:

- Are the collected assessment data appropriate, accurate, and supported by nursing research?
- Did I use the data to identify the existence of a pattern?
- Is the identified pattern characteristic of the defined health problem?
- Does the nursing diagnosis use scientific nursing knowledge and evidence-based practice standards as the basis for selection?
- Can the nursing diagnosis be reduced or resolved by independent nursing action or interventions?
- Would other qualified clinicians formulate the same nursing diagnosis based on my data?

It is important at this stage to actively encourage, rather than ignore, the patient's ongoing participation in the process. Ask, "What are the patient's perceptions of the problem?" "What do they think will help resolve the problem?" "How do these perceptions and thoughts compare with the nursing interventions, plans, and expected outcomes?"

For example, the identified nursing diagnosis of "activity intolerance" can be validated and confirmed by the patient through expressed statements such as, "I am unable to complete the assigned tasks due to weakness."

Related Factors

Related factors are derived from the etiology or pathophysiology of the disease process or condition. Simply put, a **related factor** is the reason behind the signs and symptoms the patient is experiencing.

For example, if the chosen nursing diagnosis is "ineffective breathing patterns," the related factors, expressed as a "related to" statement, could be described as "related to decreased lung expansion." The identified problem or negative response is ineffective breathing, and the related factor used to explain the presence of the problem is decreased lung expansion.

Some related factors are easily identified, while others may stem from different origins. It is important for the nurse to identify which factors are related to the individual patient being in a specific situation. For example, consider the nursing diagnosis of pain. The related factors for pain could range from sources of physical, psychological, psychosocial, or even spiritual and cultural factors. The nurse needs good clinical judgment to determine the exact cause of the patient's pain and correctly associate the related factor for the formal nursing diagnosis.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: Asking Specific Questions

As the nurse enters the room, the patient complains of pain at the surgical site. During inspection of the site, the nurse notices that the patient's skin is red, swollen, and hot to the touch. The nurse is using clinical signs to begin the process of formulating the hypothesis—the patient has an infection. Upon further data collection, the nurse identifies abnormal vital signs that include elevated heart rate and increased temperature. Using analysis, the nurse determines these cues are not related to the nursing diagnosis of pain but to a possible change in the patient's condition.

Defining Characteristics

The **defining characteristic** of a nursing diagnosis are the actual signs and symptoms being exhibited by the problem. The phrase used to write defining characteristics is "as evidenced by." To continue with the example of "ineffective breathing pattern," the defining characteristics are the signs and symptoms exhibited or expressed by

the patient during data collection. The nurse noticed signs and symptoms such as dyspnea (shortness of breath), coughing, and difficulty breathing.

Putting all of these elements together, the nursing diagnosis would be "ineffective breathing pattern (category) related to decreased lung expansion (related factors) as evidenced by dyspnea, coughing, and difficulty breathing (defining characteristics)."

Refine the Nursing Diagnosis

After validating and applying the nursing diagnosis, the nurse may need to refine it. This can be considered the evaluation phase of formulating a nursing diagnosis. To **refine the nursing diagnosis**, the nurse may need to select a new diagnosis or narrow it down more specifically to assign new interventions based on outcomes. Think of this as the application of patient care. What worked? What did not work?

Sometimes social or environmental factors and disease progression require that the diagnosis be reassessed and the care plan altered. Take the previous nursing diagnosis of "ineffective breathing patterns related to decreased lung expansion as evidenced by dyspnea, coughing, and difficulty breathing" and assume the following interventions were implemented:

- The nurse will encourage the use of incentive spirometry.
- Respiratory therapy will administer breathing treatments as needed per provider's orders.
- The nurse will assist the patient into semi-Fowler's position (head of the bed is elevated at an angle of approximately 30 to 45 degrees) to help increase lung expansion.

Now, let's assume the patient continued to display signs and symptoms of dyspnea, coughing, and difficulty breathing even after the interventions were implemented. This situation would warrant redefining the nursing diagnosis. Things to consider would be the recommendation of further diagnostic tests to determine a more specific underlying cause of the problem, such as impaired gas exchange or possible lung infection. At this point, the nurse would recommend an order for an ABG (arterial blood gas) to help identify ineffective gas exchange or possible sputum analysis to identify any infections.

PATIENT CONVERSATIONS

Refining a Nursing Diagnosis

Scenario: Mrs. Winters is an 80-year-old female diagnosed with heart failure and is now being discharged home with a new prescription of furosemide. Currently, Mrs. Winters's nursing diagnosis is risk for fluid volume overload. The nurse, Samuel, goes into the room to provide discharge instructions to Mrs. Winters.

Nurse: Okay, Mrs. Winters, do you have any other questions for me?

Patient: Yes, I have questions about that water pill.

Nurse: The new diuretic your provider ordered is called furosemide. This is a diuretic that will help you urinate excess fluid, which will help reduce strain on your heart. What questions do you have?

Patient: Well, I live alone. There are two bathrooms in my house, but the only one that works is downstairs. If I am going to pee more than normal, I'm worried I won't be able to make it to the bathroom in time.

Nurse: Just to make sure I understand—you have two bathrooms, but the one upstairs located near your bedroom doesn't work? Only the bathroom on the main floor is functioning. Is that right?

Patient: Yes, that's right. I really don't want to pee my pants, but I'm scared about running up and down those stairs at my age!

Nurse: I completely understand, and those are valid concerns. We want to keep you safe, and rushing up and down the stairs at night would be considered a fall risk. Let me talk to the social worker. She may be able to get you a bedside commode for you to use at night, and then when the home health aide comes in the daytime, they can empty and clean it for you.

Patient: That sounds pretty good. Let's see if we can make that work. Thank you!

Scenario follow-up: Samuel refines the nursing diagnosis to include risk for falls in addition to risk for fluid volume overload.

13.4 Focus of the Planning Phase

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define the need to research evidence to support the plan of care
- Recognize how to establish priorities during the implementation of care
- Analyze the importance of outcome identification
- Explain the nurse's role in the planning phase

The primary focus of the outcome identification and planning phases is to develop with the patient a plan of care for the patient. This section discusses creating a plan of care and the nurse's role in implementing that plan. To create a plan, first consider what research the plan is based on and what evidence is available to support positive patient outcomes. Once those questions are answered, the nurse can determine how to establish priorities while implementing a care plan. Finally, the nurse must identify outcomes and evaluate the effectiveness of the plan.

The nurse is involved in every step of the planning phase, from the first stage of identifying the needs to thinking through the priorities, designing the plan, and putting the plan into action. To perform their role in the planning process, nurses must understand the importance of developing interpersonal competence, recognize the stages of comprehensive planning, and understand their role as care coordinators in the implementation phase.

Research Evidence to Support Plan of Care

An evidence-based practice (EBP) is the responsible and thoughtful use of current and best evidence to guide the implementation of patient care. Everything nurses say and do must be supported and validated by evidence-based research. Nursing research provides the evidence needed to support the implementation of specific nursing actions to facilitate patient recovery.

EBP has freed nurses from relying on anecdotal or historical healthcare practices that may have been based on less-than-favorable conditions, such as the availability of supplies. Nursing care that is based on evidence provides a more solid foundation for manageable and predictable outcomes. This section will discuss the most common EBP guidelines, including clinical pathways and core measures set forth by government bodies and widely known healthcare organizations.

Clinical Pathways

A **clinical pathway** is an evidence-based practice guideline used to develop plans of care. A clinical pathway is an example of a multidisciplinary care plan that translates policy, guidelines, and/or evidence into a standardized structure (Figure 13.5). Examples of clinical pathways include algorithms or hospital protocols for commonly treated conditions. Utilization of a common set of standard guidelines or protocols allows more research to be conducted on effective treatment plans. The overall aim of clinical pathways is to translate research into practice.

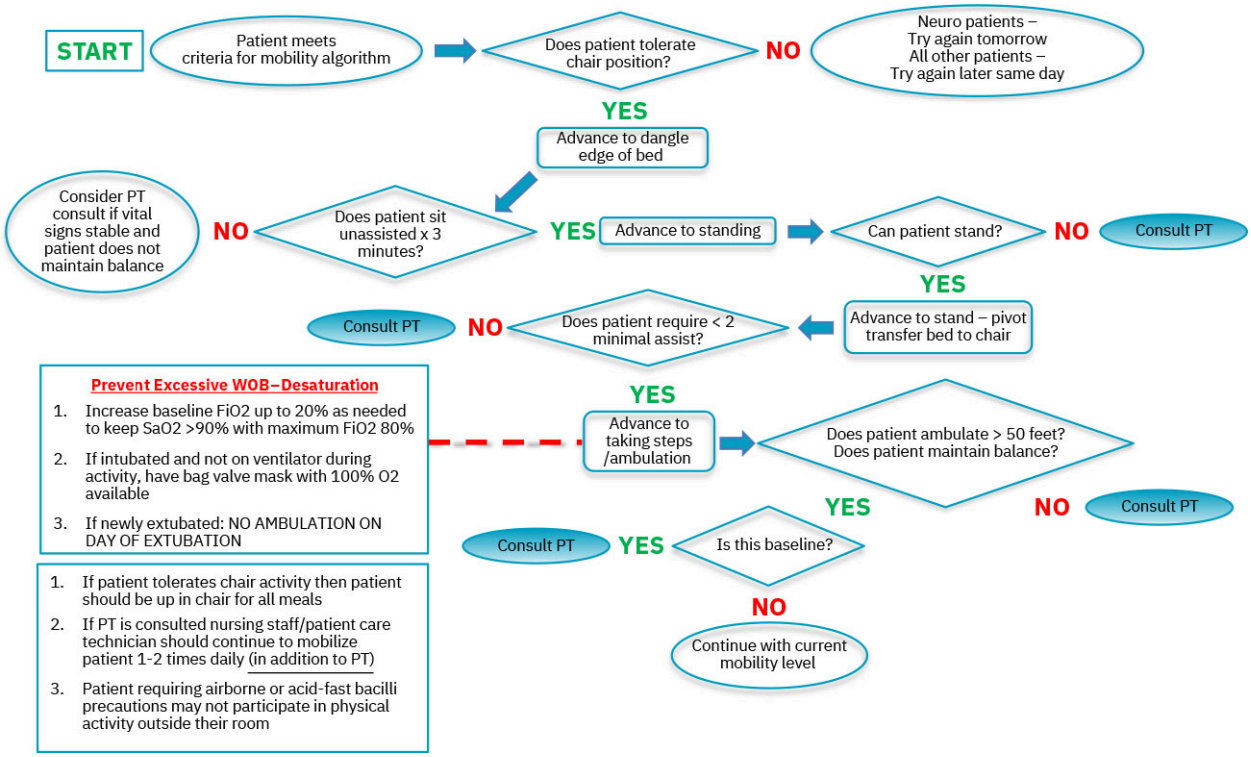

FIGURE 13.5 This example of early mobilization protocol for patients in ICU shows how the process works as a flowchart with all the necessary decisions laid out. (credit: Agency for Healthcare Research and Quality, Public Domain)

Clinical pathways are designed based on clinical research and evidence. Another widely known example of a clinical pathway is the advanced cardiac life support (ACLS) algorithm. The ACLS pathway outlines the multiple steps to treat patients who need advanced cardiac life support (ACLS). Specific medication and identified steps are implemented based on the patient's response to treatment.

Core Measures

A **core measure** is an evidence-based standard of care or practice guidelines established by The Joint Commission (TJC) and the Centers for Medicare & Medicaid Services (CMS), agencies that aim to improve healthcare quality and patient safety by establishing evidence-based standards of care.

Core measures incorporate EBP guidelines to care for specific conditions or diagnoses. Examples include stroke protocols or acute coronary system (ACS) protocols associated with signs and symptoms that point to a particular clinical situation. In these scenarios, core measures help the nurse articulate what to do, what else to look for, what might be causing the problem, and even what diagnostic tests to consider. Particularly important is the relationship between core measure protocols and clear standards of performance guidelines set forth by the accrediting agencies.

The CMS primarily oversees the organization of most core measures. This responsibility stems from CMS's pivotal role in establishing and enforcing healthcare quality benchmarks, ensuring that healthcare providers participating in Medicare and Medicaid adhere to these standards. According to CMS (2021), core measures are quality guidelines that healthcare providers are to follow, such as

- promotion of measurement that is evidence-based and generates valuable information for quality improvement;
- consumer decision-making;
- value-based payment and purchasing;
- reduction in the variability in measure selection; and
- decreased provider's collection burden and cost.

Establishing Priorities

The means of identifying what steps need to be implemented first and why is called **establishing priorities**.

Prioritization in nursing is a decision-making process in which a nurse considers the determined patient's care needs, applies decision-making guidelines, and determines an order of importance for the patient's health and well-being. Commonly used formats for clinical reasoning when establishing priorities include ABCs, Maslow's hierarchy (see 4.2 Models of Health for more information), and the identification of actual versus potential problems, acute versus chronic problems, patient preferences, and anticipation of future problems. The importance of establishing priorities during assessment are detailed in Establishing Priorities during Assessment.)

ABCs

In the clinical setting, steps needed for life are considered the most important and should be considered above all else. Patient ABCs—airway, breathing, and circulation—are the highest priorities. The nurse must ensure a patient has an effective and functioning airway, is breathing efficiently, and is adequately circulating or has sufficient cardiac perfusion. If the ABCs are identified as a need, protocols such as basic or advanced life support should be initiated.

Actual versus Potential Problem

When prioritizing interventions or steps of care, the nurse must consider whether the problem they are addressing is an actual or potential problem. The nurse will prioritize an actual problem over a potential one.

Consider the following scenario: The nurse enters a room and finds the patient sitting in bed crying, emotionally distraught over an argument they've had with their significant other. The patient states, "I may not even be able to eat lunch today because I am too upset to think about food." Applying the priority decision tree to the patient's situation, the nurse can rule out an ABC problem. However, the patient's problem does fall within Maslow's hierarchy of needs. First, the nurse considers the patient's emotional well-being, as the patient is crying and visibly upset. Second, the nurse considers the patient's statement that they "might not be able to eat lunch today." According to Maslow, eating is the priority—but the nurse will consider it a potential problem for now. The priority in this situation is what is happening right now—the patient's emotional state.

Acute versus Chronic Problem

If the application of ABC, Maslow's, and actual versus potential problems do not apply, the next step is to consider whether the problem is acute or chronic. Acute or chronic problems depend on what is going on with the patient. The nurse needs to determine which interventions or applied care should take priority.

As nurses come to understand disease processes, they will learn that certain conditions or problems are associated with specific signs and symptoms. For example, an acute episode of rheumatoid arthritis is more of a priority than a patient's chronic constipation problem. Acute problems will take precedence over chronic problems when prioritizing care.

Expected versus Unexpected Problem

Finally, the nurse will apply the prioritization of expected versus unexpected related to identified problems or needs. Consider a patient with chronic asthma. The nurse realizes it is expected that the patient will have wheezing even with minimal exertion or activity. It is not expected, however, that a patient without a chronic lung disease will experience wheezing with minimal activity or exertion of activity.

Another example of applying prioritization is when patients are prescribed certain treatments by the provider. For example, the nurse knows that a patient prescribed a diuretic is going to produce more urine and will need to go to the bathroom more often. The nurse expects the outcome and plans the patient's care accordingly. The nurse also knows that the patient should not experience increased heart rate, hives, and shortness of breath after administration of the medicine. These would be unexpected outcomes and would take priority over other interventions when planning care.

Outcome Identification

An **outcome** is the desired result or goal after the implementation of the patient's individualized plan of care. Identified outcomes may be long-term or short-term goals and should all follow the SMART goal format. The nurse considers several factors related to outcome identification. These factors include

- specific measurements to determine the success of outcomes;
- relevance of the outcomes for the specific patient with their unique qualities and needs; and
- attainability of the outcome based on the outlined timeline.

Realistic Outcomes

The nurse will determine whether the outcome identified is realistic, meaning reasonable and attainable for this specific patient. For example, it is expected that patients undergoing minor surgical procedures will begin to move and possibly walk within a day (or even the same day) as the surgery. However, this would not be realistic for all patients. Consider a patient who is paraplegic who undergoes a minor surgical procedure—they could not walk before the surgery, so it is not realistic to expect them to walk after the surgery.

Another example is a patient who has been prescribed physical therapy to gain muscle coordination and strength training. On the day of therapy, it is realistic and attainable to expect the patient to walk a few steps in the room with therapy assistance. However, it is not realistic or attainable to expect the patient to walk 500 feet (150 meters) to the nurse's station and back without assistance. While common sense helps with outcome identification, a strong use of critical thinking is also needed.

Expected Time Frame for Completion

As with any goal or expectation, a time frame for completion must be set. Having a set time frame enables the nurse to implement the interventions and evaluate the effectiveness of the intervention at the end of the time frame. The identified outcome time frame is set by the nurse and the healthcare team, as well as the patient's input, when possible. There are two types of outcome identification regarding time frames: short-term and long-term.

PATIENT CONVERSATIONS

Setting Short-Term and Long-Term Goals

Scenario: Luisa is being discharged from the hospital with a new diagnosis of type 2 diabetes. She is a bit overwhelmed with her diagnosis, but she is very motivated to stay well for the sake of her children and grandchildren. Minh is the nurse doing her discharge teaching.

Nurse: Luisa, let's talk about setting some short- and long-term goals for your diabetes care. That might help you focus on what you need to do to stay well.

Patient: Yes! My short-term goals are to eat better and exercise more, and my long-term goal is to lose thirty pounds (fourteen kilograms) in six months.

Nurse: Those are ambitious goals! Let's plan on how you're going to go about achieving them.

Patient: Well, that's where I get worried because thirty pounds is a lot of weight, and I really don't know how to change my diet. When my family gets together, we love to make food and eat and it's going to be hard. Plus, I don't live near a gym, and I couldn't afford one even if I did. Can I still achieve these goals?

Nurse: I think if we look at your goals more closely and maybe modify them to better suit your life and resources it might be a bit easier to approach. What if we change the long-term goal to five pounds (two kilograms) in one month? That is a realistic amount of weight to lose in a month, and you won't need a gym. Do you live near any parks?

Patient: Yes, there's a park about half a mile from my house where I take my grandchildren to play.

Nurse: That's great! Let's set a short-term goal of walking to the park and back once a day, five days a week. Does that sound doable?

Patient: Yes. My grandchildren will be so happy!

Nurse: (laughs) I'm so glad! Now let's talk about diet goals.

Scenario follow-up: By helping Luisa modify her long-term goal into a more realistic one, she has helped her get a plan in place for living a healthier lifestyle.

Short-Term Goals

Short-term goals have a time frame of days to a week—some are even within the nurse's assigned shift. Most short-term goals are to be achieved before the patient is discharged. This allows the healthcare team to evaluate the

effectiveness of a newly prescribed treatment, medication, or specific intervention. For example, a patient with an indwelling Foley catheter may have a goal or outcome identified as "The patient will void (urinate) within two hours after removal of the Foley catheter." This outcome allows the healthcare team to ensure the patient regains bladder function.

Another example of a short-term goal might be a patient who has recently been diagnosed with diabetes. The outcome identified would be "The patient will demonstrate how to check their own blood sugar using the return demonstration method before discharge." This allows the healthcare team to ensure the patient can self-monitor their blood sugar upon discharge.

Long-Term Goals

Long-term goals generally have time frames longer than a few days and can be several weeks or even months. These goals often involve ongoing activities or interventions that continue long after the patient is discharged. Examples of long-term goals include cardiac, respiratory, or physical rehabilitation as well as wound care and long-term medication protocols. Long-term goals often are set to improve a patient's quality of life.

The Nurse's Role in Planning

The nurse has an integral role in the planning phase. Nurses are responsible for tasks that start with identifying the patient's needs through establishing priorities, implementing the plan, and evaluating the outcomes. To execute their role effectively and efficiently, the nurse must understand the importance of developing interpersonal competence, the steps involved in comprehensive planning, and the role of being a care coordinator.

Interpersonal Competence

The nurse's interpersonal competence is a crucial step that starts with their very first interaction with a patient. If the patient perceives the nurse as unknowledgeable or lacking the skills needed to provide care, they may not trust the entire team—especially if they are new to the healthcare environment. Patients may judge all nurses by that one encounter and be resistant to any future attempts at education or treatments performed by nurses.

There are several things the nurse can do to promote and demonstrate interpersonal competence. Techniques the nurse can utilize to accomplish effective communication and display personal competence include active listening, clear verbal communication, patience, and a teamwork mentality. The nurse must display knowledge and professionalism when speaking with the patient. They should use evidence to support communication, not opinion. Nurses must establish a trusting relationship with patients to facilitate active participation and cooperation with the plan of care. Nurses need effective communication with patients and their families, as well as the skills to communicate clearly and effectively with other members of the healthcare team.

A multitude of factors contribute to patient needs, and nurses must develop a strong sense of interpersonal competence to recognize them. Nurses use their clinical knowledge, experience, and social and cultural awareness to assess patients. They also need to understand how patient needs differ from family needs. Aspects such as a patient's culture, age, and family dynamics need to be considered as the nurse develops competence.

Nurses must understand that patients and families may find it difficult to manage the expectations placed on them. Clear communication and asking direct questions about expectations help the nurse identify needs and lead to more competent decision-making.

At every stage, the nurse's interpersonal competence drives their decision-making. The nurse needs to recognize the patient may have fears associated with the healthcare process and should plan accordingly. Addressing patient and family fears in the planning phase of care is an essential part of the process. Ensuring the patient and family are as well-educated and prepared as possible allays fears and provides a solid starting place. However, the nurse should avoid focusing too much on fears, as it can halt progress.

REAL RN STORIES

Assessing and Addressing Patient Fears

Nurse: Gigi, RN

Clinical setting: Large acute-care hospital in the cardiovascular intensive care unit
Years in practice: 7
Facility location: Chicago, Illinois

I was once caring for a 44-year-old male who had been admitted with a myocardial infarction (heart attack) and had coronary artery bypass grafting (CABG). The surgery was successful, and he was getting ready for discharge in the next day or two. He and his family were very shaken by the whole experience and had a lot of concerns about going home. Much of his plan of care was based on lifestyle changes. These included topics such as a low-sodium, heart-healthy diet and at least an hour of exercise a day. The patient and family were asking many questions. They had so many questions, but they were clearly willing and motivated to learn, so I did what I could to ease their concerns. I put in a nutrition consultant and had the cardiac nutrition specialist speak with the family; she gave them a lot of ideas on changing their favorite family recipes to make them healthier, including fried chicken. I found hospital-approved pamphlets about post-surgical care for the surgical incision, and I emailed several links I had found about healthy eating and exercise to the patient and his wife. I made sure they had the hospital/clinic app downloaded onto their phone and showed them how to use the messaging and chat functions so they could message their doctor if they had further concerns or questions. The resources and information I shared helped the patient go home feeling less nervous about his lifestyle changes going forward.

Comprehensive Planning

The planning stage of the nursing process is defined by the ANA as developing a "collaborative plan" in conjunction with the healthcare consumer, family, significant others, and the interprofessional team. A plan is termed comprehensive because it includes all relevant and affected parties. The planning phase can be broken into three main categories: initial planning, ongoing planning, and discharge planning (Table 13.3).

Type	Description
Initial planning	Addresses each problem in a nursing diagnosis format, prioritizes interventions in order of implementation, and identifies patient outcomes
Ongoing planning	Addresses the patient's ongoing needs, identifying which parts of the plan of care need revision, are marked as completed, or need new areas developed based on condition changes
Discharge planning	Addressed by the entire interdisciplinary team but implemented by the nurse, the discharge plan identifies what will happen after the patient is discharged from the facility. It can include identification of community resources or need for further health care such as home health.

TABLE 13.3 **Types of Planning**

Nurse's Role as Care Coordinator

Nurses are in the unique position of being at the center of the patient's care. They see the patient the most frequently and get to know them and their family the best. So, when it comes to coordinating what the patient needs, the nurse is usually the one to make that happen. Almost like a manager or a quarterback of a football team, the nurse sees the whole picture for the patient and helps organize the different team members.

As a coordinator of care, the nurse plays many roles, including communicator, educator, counselor, and interdisciplinary team member (Table 13.4).

Role	Description	Example
Communicator	Uses clear, concise, and therapeutic communication techniques with the patient, family and other healthcare team members	The nurse explains to the patient that based on their current lab results, the provider would like to start checking their blood glucose levels before each meal.
Educator	Uses knowledge, skill, or competency to help facilitate someone else's learning	The nurse teaches the patient how to perform a blood glucose test.
Counselor	Assists the patient with making decisions that promote overall health and well-being, and provides encouragement and support for patient-centered care	The nurse listens as the patient decides which foods from a list are appropriate for their diagnosis of diabetes. Then the nurse offers praise when the patient selects the correct foods.
Interdisciplinary team member	Identifies and meets the needs of the patient by performing as an active team member	The nurse recognizes the patient's blood sugar is above the normal range (264). Then the nurse notifies the provider and receives new medication (insulin) and diet orders (diabetic). The nurse then notifies the pharmacy and nutritionist of the newly received orders and communicates the newly developed plan to the patient.

TABLE 13.4 Roles of the Nurse in Care Coordination

PATIENT CONVERSATIONS

Nurse as a Care Coordinator

Scenario: Augusto has been admitted to the cardiac unit to be worked up for an aortic valve replacement. He has never been hospitalized before this and didn't even know that anything could be wrong with his heart valves. Augusto was admitted at 6:00 a.m. Max is his day shift nurse.

Nurse: Good morning, Augusto. My name is Max, and I'll be your nurse today. How are you feeling?

Patient: Freaked out, man. I've never been in the hospital before, and this place is crazy busy.

Nurse: I understand, there is a lot going on here. I know it can all seem overwhelming.

Patient: They say that I need a valve replaced. What are "valves" in my heart, and why does mine need to be replaced? Is this why I've been having more and more trouble walking without getting out of breath?

Nurse: Those are all good questions. Your heart valve is the source of your shortness of breath when walking. I've got some info for you at the nurse's station regarding the normal anatomy of the heart, and about heart valve replacement surgery. I also have an informational video the hospital made. I can show you it on your TV screen. There are a lot of reasons why a heart valve needs to be replaced. I will ask the doctor when he comes by on rounds shortly to come in and discuss your reasons for needing the surgery.

Patient: Wow, thanks! I had no idea there were so many resources to help teach me about what's going on. Yeah, I think I'd prefer to watch a video first before getting into any reading material. This way I'll know questions to ask the doctor too.

Nurse: No problem, Augusto. I'll do my morning assessment right now, and I'll pull up the video for you to watch while I'm getting your morning medications.

Scenario follow-up: Max got the patient to talk about their concerns and found out how the patient likes to learn. He has developed a positive therapeutic relationship with Augusto and has started an important discussion about his disease process that allows Augusto to ask questions. Max can coordinate with the doctor or other members as Augusto's questions and needs arise.

Summary

13.1 Evolution of Nursing Diagnosis

Nursing diagnosis is a defining characteristic of the nursing profession. The breadth and depth of patient problems that fall under the umbrella of this concept are the basis of nursing practice. The ANA Standards of Practice and the ANA Competencies for Nursing Diagnosis both support the autonomy of the profession. The decision was founded on the nursing profession exhibiting strong clinical judgment. The nursing profession deemed a problem-solving approach the best way to achieve patient care outcomes.

NANDA-I supports nursing diagnosis through taxonomy and classification. Taxonomy for clinicians is used to communicate in a clear, efficient, and standardized manner. NANDA-I and Tanner's Clinical Judgment Model (CJM) both provide a framework for clinical decision-making using a problem-solving approach.

As patient needs become more complex, the need for nurses to think critically evolves as well. The most current evolution of clinical decision-making is the Clinical Judgment and Measurement Model (CJMM). The CJMM uses six cognitive skills to develop critical thinking that can be aligned with both the nursing process and Tanner's CJM.

While all the processes look very similar, each requires a slightly different way of thinking and incorporating progressive levels of knowledge to provide patient care. Ultimately, the goal is to provide all patients with the best possible care and help them achieve the best possible outcomes.

13.2 Focus of Nursing Diagnosis

The foundational steps for clinical decision-making are to predict, prevent, manage, and promote. Using this as a framework for thought processes helps beginning and experienced nurses alike form appropriate nursing diagnoses and understand the steps they took to reach those diagnoses. It is important to differentiate between nursing and medical diagnoses.

As mentioned previously, medical diagnosis focuses on the actual disease or condition, while nursing diagnosis focuses on the patient's response to that disease or condition. Once a decision has been made, the planning process gets underway. The nurse must keep the focus on the patient's expected versus actual outcomes, which includes using the nursing diagnosis to promote the best possible outcomes for the patient. Using SMART goals is one proven tool for the nurse to keep sight of patient outcomes. The evidence-based tool can ensure the outcomes remain attainable and reasonable for the patient to achieve and allow the nurse to adjust the nursing diagnosis as necessary.

13.3 Categories of Nursing Diagnosis

Understanding how nursing diagnoses are categorized is the first step in determining how to select one for a patient. The four NANDA-I approved categories are problem-focused, risk for, health promotion, and syndrome-based. Once a category is chosen, the nurse can identify which diagnosis best suits an individual patient's needs. After assigning, the nurse must then validate the selected diagnosis. Validating the nursing diagnosis is based on evidence. Re-examining the signs and symptoms discovered during data collection and comparing them to current evidence-based practice standards are two ways the nurse will validate the selected diagnosis. The nurse needs a plan in case the identified nursing diagnosis does not produce the desired outcomes or the patient's condition changes. In this situation, redefining the diagnosis may be warranted. Redefining the diagnosis is narrowing it down or creating a new one based on current needs. Sometimes, associated interventions are unsuccessful, and the addition or revision of a nursing diagnosis allows for new interventions to be applied to the plan of care.

13.4 Focus of the Planning Phase

The planning phase utilizes research and resources to organize and prioritize a patient's needs. Using evidence-based resources such as clinical pathways and core measures ensures that best practice standards are incorporated into the patient's plan of care. Prioritizing patient care is also initiated during the planning phase when the nurse systematically determines which of a patient's needs should be addressed first. This process is called prioritizing care. The decision process can utilize frameworks such as ABCs, Maslow's hierarchy, acute versus chronic problems, expected versus unexpected problems, and actual versus potential problems. The importance of outcome identification cannot be overstated; nurses must ensure that patient outcomes or goals are realistic,

attainable, and time-specific. Goals can be short- or long-term goals. Nurses have a crucial role in the planning phase where they serve as care coordinator and team player, provide education, and communicate efficiently.

Key Terms

clinical pathway evidence-based practice guideline used to develop plans of care
collaborative problem a problem that requires interdisciplinary team members to complete
core measure evidence-based standard of care or practice guideline established by The Joint Commission (TJC) and the Centers for Medicare & Medicaid Services (CMS)
defining characteristic the actual sign or symptom being exhibited by the problem
diagnostic error a failure to identify a response as unhealthy
establishing priorities the means of identifying what steps need to be implemented first and why
etiology the cause (or causes) of a specific disease state
health promotion diagnosis a diagnosis that can help promote and improve the overall well-being and health of a patient and/or their family/support structure/community
medical diagnosis identification of a disease or a condition and a description of a problem toward which providers direct the treatment plan
NANDA-I an organization whose purpose is to facilitate the development, modification, distribution, and use of standardized nursing diagnostic terminology
nursing diagnosis a method to provide and evaluate appropriate patient care
nursing process a five-step method to guide decision-making for nurses
outcome the desired result or goal after implementation of the patient's individualized plan of care
problem-focused diagnosis an unwanted response to a health condition
refine the nursing diagnosis to select a new diagnosis, or narrow an existing diagnosis down more specifically, to assign new interventions based on outcomes
related factor the reason derived from the etiology or pathophysiology of the disease process or condition
risk diagnosis a diagnosis behind the signs and symptoms the patient is experiencing; developed through clinical judgment based on the vulnerability of the patient's individualized situation
Standards of Practice standards designed by the ANA and based on the nursing process that provides a problem-solving-focused approach to nursing practice
syndrome diagnosis a diagnosis that occurs when a group or cluster of nursing diagnoses can all be utilized based on certain life events or situations
Tanner's Clinical Judgement Model (CJM) a framework that offers a different articulated perspective to the problem-solving approach of developing nursing diagnosis
taxonomy a system of classification
Taxonomy II the current classification method for listing nursing diagnosis; it has three levels: domains, classes, and nursing diagnosis
validate to confirm the chosen diagnosis is appropriate for the individual patient using evidence to support the diagnosis

Assessments

Review Questions

1. What clinical decision framework includes these five steps: assessment, analysis, planning, implementation, and evaluation?
   a. Tanner model
   b. nursing process
   c. Clinical Judgment Measurement Model (CJMM)
   d. NANDA model

2. What is the term for designated words and phrases that make up a common system of classification, such as the NANDA nursing diagnoses?
   a. dictionary
   b. reference

c. taxonomy
d. glossary

3. When a nurse is determining whether an outcome was met, partially met, or not met, which one of the six cognitive skills are they utilizing?
   a. taking action
   b. evaluating outcomes
   c. recognizing cues
   d. analyzing cues

4. Step three of Tanner's Clinical Judgement Model is responding. With what step of the Clinical Judgment Measurement Model (CJMM) does responding correlate?
   a. recognizing cues
   b. analyzing cues
   c. interpreting cues
   d. taking action

5. Step one of Tanner's Clinical Judgement Model is noticing. With what step of the Clinical Judgment Measurement Model (CJMM) does noticing correlate?
   a. recognizing cues
   b. analyzing cues
   c. interpreting cues
   d. observing cues

6. How do nursing diagnoses differ from medical diagnoses?
   a. Nursing diagnoses are concerned with bodily functions such as ingestion and elimination.
   b. Nursing diagnoses are concerned with the physical aspect of caring for patients.
   c. Nursing diagnoses are concerned with the human response to health conditions.
   d. Nursing diagnoses are a subset of medical diagnoses.

7. To avoid making a diagnostic error or fail to identify a response as unhealthy, what must the nurse incorporate when interpreting and analyzing data?
   a. the nurses' opinion
   b. evidence-based comparative standards
   c. the patient's opinion
   d. the least expensive option

8. What term is not included when developing SMART goals?
   a. achievable
   b. specific
   c. realistic
   d. untimed

9. The foundational steps for incorporating clinical decision-making for patient care are to predict, prevent, manage, and promote (PPMP). What is an example of the "promote" step?
   a. monitoring vital signs every four hours as ordered
   b. administering a yearly flu vaccine
   c. placing the call light within the patient's reach before leaving the room
   d. providing the patient with a list of condition-appropriate foods to enhance knowledge

10. Using the following information, what NANDA-I-approved category should the nurse consider when developing a nursing diagnosis for the following patient?

The patient comes to the emergency department with signs and symptoms of an MI (heart attack).

a. problem-focused
b. risk for
c. health promotion
d. syndrome-based

11. Using the following information, what NANDA-I-approved category should the nurse consider when developing a nursing diagnosis for the following patient?

The patient is planning to be discharged home and wants to practice changing their wound care dressing one more time to make sure they fully understand.

a. problem-focused
b. risk for
c. health promotion
d. syndrome-based

12. Using the following information, what NANDA-I-approved category should the nurse consider when developing a nursing diagnosis for the following patient?

The patient is 86 years old with macular degeneration. His wife must go home tonight to rest, and this will be his first time being alone in the hospital at night.

a. problem-focused
b. risk for
c. health promotion
d. syndrome-based

13. Using this information, what NANDA-I-approved category should the nurse consider when developing a nursing diagnosis for the following patient?

The patient is a young woman attending college and goes to see the campus clinic because she was raped the evening before.

a. problem-focused
b. risk for
c. health promotion
d. syndrome-based

14. What is the highest priority according to the ABCs of nursing?
a. emotional support
b. social interaction
c. airway maintenance
d. pain management

15. How does a nurse differentiate between actual and potential problems?
a. by assessing the severity of symptoms
b. by considering patient preferences
c. by focusing on chronic conditions
d. by analyzing the patient's emotional state

Check Your Understanding Questions

1. Why was the transition to the Clinical Judgment Measurement Model (CJMM) necessary in nursing practice?

2. What are the four components of the nursing diagnosis?

3. Why is it important for nurses to validate nursing diagnoses?
4. Name two ways to incorporate evidence-based nursing practice (EBP) when planning patient care.
5. Discuss how the nurse can be a counselor when a patient expresses the need to leave an abusive partner.
6. Discuss how the nurse can determine the difference of expected versus unexpected problems in patient care planning.
7. Describe the difference between a short-term and long-term goal and include attributes all goals must include.

Reflection Questions

1. How do you think the development of nursing diagnosis has impacted the autonomy and professionalism of nurses?
2. How can nurses ensure that nursing diagnoses accurately reflect the holistic needs of patients, considering physical, psychosocial, and environmental factors?
3. How can understanding the categories of nursing diagnoses aid in critical thinking and clinical decision-making for nurses?

What Should the Nurse Do?

A nurse sees a patient's call light go off and goes into the room. The patient is sitting at the side of the bed with his eyes closed, holding onto the blankets. The nurse asks the patient what he needs, and he says he feels dizzy. The nurse knows that the patient has heart failure and is on a diuretic, or water pill, to rid his body of excess fluid. The nurse also knows that they increased the dose of the diuretic yesterday. The nurse wonders if the dose is now too high and the patient is losing too much fluid. When the nurse checks the patient's blood pressure and looks at the patient's chart, they notice the patient has urinated eight times over the past twelve hours, the total output is 1.5 L of urine, and that their dry weight is 2 lbs (1 kg) lighter than yesterday. The patient's blood pressure is 100/65 mm Hg, which is lower than he usually trends around 120/70 mm Hg. The nurse guesses that the patient may have lost too much fluid and contacts the provider, who agrees. The provider instructs the nurse to hold the patient's afternoon dose of the diuretic. The nurse does and charts the medication hold, then ensures the patient's safety by assisting him back into bed in a supine position. The nurse ensures he has his call light and urinal close by; she explains that his dizziness may be due to the water pill and that if he wants to get up, he must call for help before doing so. The patient thanks the nurse and falls asleep. About five hours later, the patient wakes up and tells the nurse he feels much better. He has urinated once in the past five hours and put out 65 mL. The nurse checks his blood pressure and sees it is 118/70 mm Hg. The nurse concludes that holding the medication has helped the patient retain some fluid.

1. Which cues did the nurse recognize in the patient that indicated something was amiss?
2. How did the nurse analyze the cues?
3. What hypothesis did the nurse form after analyzing the cues?
4. What was the nurse's solution to the patient's problem?
5. What actions did the nurse take to address the problem?
6. How did the nurse know the interventions worked?

Competency-Based Assessments

1. Sarah, a registered nurse, is working in the emergency department (ED) when a new patient is brought in by ambulance. Mr. Johnson is a 65-year-old male who presents with severe chest pain and shortness of breath. Upon arrival, he appears diaphoretic and anxious. His vital signs show a blood pressure of 180/100 mm Hg, a heart rate of 120 beats per minute, a respiratory rate of 26 breaths per minute, and oxygen saturation of 92 percent on room air. Apply the Clinical Judgment Measurement Model (CJMM) to outline how Sarah will assess and manage the patient's condition. Break down the approach into the key components of recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking action, and evaluating outcomes.
2. Consider the following diagnoses and label whether it is a nursing or a medical diagnosis.

a. risk for electrolyte imbalance
b. impaired urinary elimination
c. essential hypertension
d. impaired gas exchange
e. hyperlipidemia
f. chronic obstructive pulmonary disease
g. decreased cardiac output
h. ineffective tissue perfusion
i. urinary tract infection, site not specified
j. neoplasm (malignant) related fatigue

3. A 65-year-old patient with a history of chronic obstructive pulmonary disease (COPD) is admitted to the medical-surgical unit with exacerbation of symptoms, including increased dyspnea, productive cough with thick yellow sputum, and decreased oxygen saturation levels. The patient reports difficulty performing activities of daily living due to shortness of breath and fatigue. Upon assessment, crackles are auscultated bilaterally in the lower lung fields, and the patient appears anxious and restless. Based on the scenario provided, formulate a nursing diagnosis for the patient.

Sarah, a 65-year-old female, was admitted to the hospital due to a fall at home. She fractured her hip and underwent surgery for hip replacement. During the assessment, the nurse observed that Sarah is experiencing shortness of breath, coughing, and difficulty breathing. Vital signs indicate an elevated heart rate and increased blood pressure. Sarah reports feeling anxious and worried about her recovery.

4. Based on the scenario provided, formulate a nursing diagnosis for the patient.
5. How would the nurse validate the nursing diagnosis?
6. Scenario update: After implementing interventions such as administering breathing treatments and encouraging the use of incentive spirometry, Sarah's symptoms of dyspnea and coughing persist. Despite these interventions, she continues to experience difficulty breathing and reports ongoing anxiety. Based on the scenario update, refine the nursing diagnosis for this patient.

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CHAPTER 14

Implementation and Evaluation: Taking Action, Evaluating Outcomes, and Documentation

FIGURE 14.1 In some ways, the nursing process is like any other plan for achieving a goal. You need a training plan to prepare to run a marathon, and only by putting your plan into action and assessing the outcome can you determine its effectiveness. (modification of "A Midsummer Night's Run 2011" by "V.L."/Flickr, Public Domain)

CHAPTER OUTLINE

14.1 The Nurse's Role in Implementation
14.2 Types of Interventions
14.3 The Nurse's Role in Evaluation
14.4 Evaluation Methods
14.5 Guidelines for Effective Documentation

INTRODUCTION Imagine you've set a goal for yourself: to run a marathon. It's a challenging objective, requiring determination and a strategic approach. Your plan will likely include a detailed training schedule, a nutritious and balanced diet, and regular health checkups to monitor your fitness levels. The next crucial step is implementation: putting your plan into action by sticking to a training schedule, eating a nutritious diet, and consistently monitoring your health.

The final, critical phase is evaluation. Imagine that on the day of the marathon, despite your best efforts, you are unable to complete the 26.2 mi (42.2 km). Did you train sufficiently? Were there nutritional gaps in your diet? Did you give your body enough time to recover between training sessions? Addressing these questions will help you understand the shortcomings of your initial plan and make the necessary adjustments for your next attempt.

This process of planning, implementing, and evaluating is a fundamental approach in various professional fields, including nursing. In this chapter, you will explore how nurses implement care plans, evaluate outcomes, and

document each step of the process, ensuring that patient care is continuously improved and adapted to achieve the best possible results.

14.1 The Nurse's Role in Implementation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the nurse's role during the implementation phase
- Describe the goals of the implementation phase
- Identify the skills needed to complete the implementation phase

In this unit, the process of providing nursing care will be explained in detail. This process begins with assessment, as nurses collect comprehensive data about the patient, followed by the diagnosis when data are analyzed to identify the causes of health problems. Based on the diagnosis, the care team and patient collaborate to identify desired health outcomes, then develop a plan of care for achieving these goals through various **interventions** (any action intended to stop a harmful outcome or promote a healthful one). Each step in the nursing process is crucial and builds on the previous ones, all to ensure a holistic approach to patient care (American Nurses Association [ANA], n.d.).

The next phase of the nursing process is the **implementation** phase, when the plans and strategies formulated in earlier steps are put into action. The specifics of implementation describe how nurses translate care plans into practical, patient-centered actions. This section also covers the importance of effectively carrying out care plans, adapting interventions to patient responses, and ensuring continuity of care. Implementation is where theory meets practice, and the nurse's skills, knowledge, and judgment come to the forefront to positively affect patient health.

Emphasis during the Implementation Phase

During the implementation phase of nursing care, nurses play a crucial role in translating the established plan of care into action, applying evidence-based practices, and ensuring continuity of care. This phase involves actively executing the plan, monitoring patient responses to interventions, and maintaining consistent care delivery—particularly when the patient transitions out of the facility.

Putting the Plan into Action

Nurses translate a patient's established plan of care into action by delivering interventions, treatments, and therapies as outlined. This requires following evidence-based practices, adhering to protocols, and utilizing critical-thinking skills to adapt the plan to meet the patient's immediate needs and changing conditions. By applying their clinical knowledge and critical-thinking skills, nurses adapt the plan to meet the unique needs of each patient, striving to achieve optimal outcomes and promote recovery.

Gauging Patient Response

Gauging the patient's response to interventions is a critical aspect of the implementation phase. It involves continuously observing and interpreting how the patient physically, mentally, and emotionally reacts to the care plan. This process is essential for ensuring that interventions are effective and align with the patient's needs and comfort levels.

Nurses assess responses through various means, including direct feedback from the patient, clinical observations, and monitoring vital signs or other relevant health indicators. This ongoing assessment allows the nurse to make timely adjustments to the care plan, ensuring it remains responsive and patient-centered. The implementation phase focuses on actively carrying out the established care plan, making real-time adjustments based on patient feedback, and ensuring that interventions are administered in a way that promotes the patient's immediate well-being. In contrast, the evaluation phase systematically assesses the overall effectiveness of the care plan after interventions have been administered. It involves reviewing patient data and outcomes to determine if the goals and objectives of the care plan were met, making long-term adjustments based on a thorough analysis, and documenting the results for continuous improvement of future care plans.

REAL RN STORIES

Quick Response and Adaptation in Postoperative Care

Nurse: Emily, RN, BSN
Clinical setting: Ophthalmology unit in a metropolitan hospital
Years in practice: 5
Facility location: Seattle, Washington

As a nurse in the ophthalmology unit, I've seen a variety of postoperative cases, but one patient, Mr. Henderson, taught me the importance of swift adaptation during the implementation phase. Mr. Henderson, a 68-year-old retiree, had just undergone cataract surgery. Initially, his recovery seemed textbook perfect: he was alert, and his initial vision checks were promising. However, during a routine check the morning after his surgery, I noticed he was unusually quiet and seemed hesitant to open his operated eye.

Upon gently inquiring, Mr. Henderson admitted to experiencing "a bit of discomfort" in his eye, which he initially thought was normal after surgery. As I assessed his condition, it became clear that his discomfort was more than typical postoperative irritation. His eye was slightly redder and more swollen than expected, and he reported a sensation of "pressure" in his eye.

Recognizing these as potential signs of postoperative complications, possibly an infection or increased intraocular pressure, I immediately informed the ophthalmologist. We adjusted Mr. Henderson's care plan, increasing the frequency of eye drops to manage potential inflammation and scheduling an urgent follow-up examination.

The quick response was crucial. The ophthalmologist confirmed the early signs of infection and adjusted Mr. Henderson's medication accordingly. This intervention prevented what could have escalated into a severe complication, potentially jeopardizing his vision recovery.

This experience reinforced how critical it is to gauge patient responses meticulously during the implementation phase. Even seemingly minor complaints or changes in condition can be indicative of significant issues. It's a reminder that, as nurses, our vigilance and ability to adapt care plans can profoundly affect patient outcomes.

Providing Continuity of Care

Providing continuity of care is pivotal in the implementation phase, particularly as the patient prepares to transition from the hospital to home or another care setting. This aspect of care ensures that the patient receives consistent and uninterrupted support throughout their recovery. Continuity of care requires effective communication, thorough documentation, and coordinated handoffs among healthcare professionals. It also involves preparing the patient and their family for what to expect after discharge, which may include education on medication management, physical therapy exercises, and wound care (Regis College, 2023).

Goals of the Implementation Phase

The implementation phase in nursing is driven by specific goals tailored to each patient's care plan. These goals are derived from the patient's diagnosis and desired outcomes, which are determined in earlier steps of the nursing process. Achieving goals requires a strategic approach, ensuring that each action by nursing staff contributes meaningfully to a patient's recovery and overall well-being.

Ongoing Assessment

Ongoing assessments, discussed in Chapter 12 Assessment: Recognizing Cues, are a vital, continuous part of the implementation phase. They involve regular monitoring and evaluation of a patient's condition and responses to interventions. Through these assessments, nurses can detect subtle changes in the patient's status that may indicate either improvement or deterioration. As a result, care remains dynamic and responsive, adjusting to the patient's evolving needs. For nurses, ongoing assessment encompasses an array of activities, from measuring physiological parameters to observing behavioral responses, all contributing to a comprehensive understanding of the patient's health (Lloyd-Davies, n.d.). Through diligent ongoing assessment, the care team can ensure the patient's care plan is continuously aligned with their needs, making modifications as necessary to optimize outcomes.

Establishing Priorities

Establishing priorities is deciding which patient needs are the most urgent and addressing them first (Marymount University, 2022). Prioritizing is especially important when resources are limited or when a patient has multiple needs. It's always vital for effective and efficient care delivery. Priority setting is often guided by frameworks such as Maslow's hierarchy of needs or specific clinical guidelines, helping nurses focus their attention and resources where they are most needed. Review Establishing Priorities during Assessment for more information about priorities and assessment. By continually evaluating and establishing priorities, the nursing team can ensure that a patient's care is streamlined and targeted and that their needs are addressed in a logical, effective order.

Resource Allocation

Resource allocation involves strategically distributing and utilizing available resources to ensure optimal patient outcomes. Careful planning and organization are required to ensure that every aspect of patient care is adequately supported. Effective resource allocation means that the right personnel, equipment, and materials are available when needed, ensuring that the patient's care proceeds smoothly and without unnecessary delays. This process includes both tangible resources such as medical supplies and staffing and intangible resources such as time and information.

Required Nursing Skills during the Implementation Phase

The implementation phase of the nursing process demands a specific set of skills to ensure effective and patient-centered care. These skills include clinical knowledge, critical thinking, and clinical judgment (Table 14.1), as well as psychomotor, interpersonal, and cognitive skills. Each skill plays a crucial role in translating a care plan into practical action and adapting it to the patient's evolving needs. In nursing, these skills are not isolated competencies but interrelated aspects of a nurse's ability to provide high-quality care.

	Definition	Description	Example
Clinical knowledge	Understanding of health, disease processes, treatments, and nursing interventions	Foundation for care plans and informed decisions; gained through education and experience	Knowing the signs of hypoglycemia and how to respond to a patient with diabetes showing signs and symptoms of hypoglycemia
Critical thinking	Skillful reasoning to guide belief or action	Analyzing information, evaluating evidence, and making decisions; crucial in assessing situations and adapting care plans	Deciding to elevate a patient's legs if they exhibit signs of fluid overload, even if the care plan does not explicitly mention this intervention
Clinical judgment	Using reasoning and thinking to draw conclusions and make decisions	Synthesizing information from various sources to prioritize interventions and make timely decisions based on patient needs and responses	Consulting with a wound care specialist on how to modify a patient's care plan when treatment has not improved the surgical site infection

TABLE 14.1 Definitions and Examples of Clinical Knowledge, Critical Thinking, and Clinical Judgment

Clinical Knowledge

A nurse's understanding of health and disease processes, treatments, and nursing interventions is referred to as **clinical knowledge**. It is the foundation upon which nurses build their care plans and make informed decisions. Clinical knowledge is gained through education and experience and is vital in understanding the implications of different health conditions and how to manage them effectively. It is also a key component of clinical reasoning, the process by which a healthcare provider combines their knowledge and experience with data obtained through various patient assessments to diagnose a medical problem and determine an appropriate response (Gruppen,

2017).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Using Clinical Knowledge to Develop Nursing Interventions

The Quality and Safety Education for Nurses (QSEN) competencies provide a framework for nursing education and practice, emphasizing key areas necessary for improving the quality and safety of patient care. Clinical knowledge is used to formulate nursing interventions using the QSEN competencies:

- Patient-centered care: Clinical knowledge enables nurses to develop nursing interventions tailored to each patient's unique clinical presentation, medical history, and personal circumstances. By understanding the underlying pathophysiology of the patient's condition, nurses can design interventions that address specific symptoms, promote healing, and enhance the patient's overall well-being.
- Evidence-based practice (EBP): Clinical knowledge plays a crucial role in EBP by providing nurses with a solid foundation of understanding regarding the latest research findings, treatment modalities, and clinical guidelines relevant to their practice. Nurses use this knowledge to select and implement nursing interventions that are supported by evidence, ensuring that patients receive care that is both effective and safe.
- Quality improvement (QI): Clinical knowledge helps nurses identify areas for improvement within their practice settings by recognizing patterns of patient outcomes, adverse events, or system inefficiencies. By leveraging their understanding of disease processes, pharmacology, and best practices in nursing care, nurses can develop and implement targeted interventions to address identified areas of concern and optimize patient outcomes over time.
- Safety: Clinical knowledge is essential for identifying and mitigating potential risks to patient safety. Nurses draw upon their understanding of anatomy, physiology, pharmacology, and patient assessment techniques to anticipate and prevent adverse events while implementing nursing interventions. This may involve ensuring correct medication dosages and administration routes, implementing fall prevention strategies, or monitoring patients for signs of deterioration following interventions.
- Teamwork and collaboration: Clinical knowledge enables nurses to communicate effectively with interdisciplinary team members, such as physicians, pharmacists, and allied health professionals, by articulating rationales for nursing interventions based on sound clinical principles. By collaborating with other healthcare providers, nurses can ensure that interventions are implemented seamlessly and that patient care is well-coordinated across the continuum.
- Informatics: Clinical knowledge enables nurses to effectively utilize informatics tools, such as electronic health records (EHRs), clinical decision support systems, and telehealth platforms, to inform nursing interventions. By accessing patient data and evidence-based resources, nurses can make informed decisions about care delivery, monitor patient progress, and communicate effectively with interdisciplinary team members. Additionally, nurses use informatics to track outcomes, analyze trends, and identify opportunities for quality improvement, ultimately enhancing the safety, efficiency, and effectiveness of nursing interventions.

By integrating clinical knowledge into their practice, nurses uphold the core principles of the QSEN competencies and deliver high-quality, safe, patient-centered care (PCC).

Critical Thinking

When implementing a care plan, nurses should not simply "follow orders" without concern for how circumstances may change. Instead, they inform and reflect on decisions using critical thinking, the disciplined, systematic process of applying skillful reasoning to guide belief or action. Analyzing information, evaluating the available evidence, and making reasoned decisions is known as critical thinking (ANA, 2024). It is crucial in the implementation phase, as it allows nurses to assess situations, consider various options, and make decisions that best suit the patient's needs. This process also ensures patients receive the most appropriate and effective care for their situation.

Clinical Judgment

Using clinical reasoning and critical thinking to draw conclusions or make decisions about a case is referred to as clinical judgment. It involves synthesizing information from various sources, including patient assessments, clinical

knowledge, and the nurse's experience (Tanner, 2006). Nurses utilize clinical judgment to prioritize nursing interventions, considering factors such as the patient's condition, preferences, and response to treatment. By drawing upon their clinical knowledge and experience, nurses make timely and appropriate decisions regarding selecting and implementing interventions to promote optimal patient outcomes. The nurse's clinical judgment will guide the decision to modify the treatment plan or consult with other healthcare professionals for further management.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Using Clinical Judgment to Initiate Nursing Interventions

Sarai, a registered nurse working in the emergency department, receives a new patient, Mr. Smith, a 63-year-old male presenting with chest pain and shortness of breath. Sarai begins by noticing the cues presented by Mr. Smith, including his chief complaint of chest pain and shortness of breath, as well as his pallor and diaphoresis. Sarai interprets the significance of the cues she has noticed, considering Mr. Smith's age, medical history, and presenting symptoms. She recognizes that chest pain and shortness of breath could indicate a myocardial infarction (heart attack) and understands the urgency of the situation. Based on her interpretation of the cues, Sarai responds promptly by initiating appropriate nursing interventions per standing orders. She ensures that Mr. Smith is placed on continuous cardiac monitoring, administers oxygen therapy to improve his oxygenation, and establishes intravenous access for medication administration and fluid resuscitation.

Psychomotor Skills

The practical, hands-on abilities required to implement interventions effectively in nursing are known as **psychomotor skills**. These skills range from basic tasks such as taking vital signs to more complex procedures such as administering injections or performing wound care (University of San Francisco School of Nursing, 2011). Proficient psychomotor skills are essential for ensuring that physical interventions are carried out safely and correctly and with minimal patient discomfort. The precise execution of psychomotor skills contributes significantly to effectively implementing a patient's care plan and their overall recovery experience.

Interpersonal Skills

Effective communication and interaction with patients, their families, and other healthcare professionals comprise **interpersonal skills** in nursing. These skills are crucial for building trust through open communication and mutual respect to build relationships and partnerships. They provide emotional support through empathy and compassion to acknowledge patients' emotions and alleviate distress, promoting a sense of comfort and reassurance. Interpersonal skills also facilitate the exchange of information through active listening techniques to understand patients' perspectives, preferences, and needs, allowing nurses to tailor interventions accordingly. These skills also involve collaboration—nurses collaborate with patients, families, and interdisciplinary team members to coordinate care, share information, and achieve common goals. Interpersonal skills must also encompass **cultural sensitivity**, which means being aware of and respecting a patient's cultural background and beliefs. Nurses create a supportive environment that encourages patients to voice their concerns, ask questions, and express their preferences, ultimately enhancing the success of nursing interventions and promoting positive patient outcomes (ANA, 2023). Effective interpersonal skills help nurses better understand their patients' needs and concerns, enabling more personalized care. By establishing a rapport and maintaining clear communication, the nurse can build trust and keep the patient and family informed and involved in care, enhancing the overall experience and adherence to the care plan.

Cognitive Skills

The mental processes involved in understanding patient needs, planning care, problem-solving, and decision-making in nursing are collectively known as **cognitive skills**. These skills are fundamental to processing patient information, applying clinical knowledge, and adapting care plans to meet individual patient needs. Cognitive skills enable nurses to think critically and apply clinical reasoning and judgment in practice. The nurse's ability to process and integrate various pieces of information is key to adapting a patient's care plan in response to changing needs, ensuring a smooth and effective recovery process.

PATIENT CONVERSATIONS

A Skillful Conversation

Scenario: Nurse Ali is paying a home visit to Mrs. Dewi, who has been struggling with irritable bowel syndrome (IBS). Note how Nurse Ali utilizes the various nursing skills throughout the conversation.

Nurse: Good morning, Mrs. Dewi.

Mrs. Dewi: Good morning, Ali.

INTERPERSONAL SKILLS

Nurse: I see another beautiful drawing on your wall. Your grandchildren really keep your spirits up, don't they?

Mrs. Dewi: Oh, yes. It's from Lily. Her drawings are my little pieces of joy. She came over last night for dinner and made that one.

Nurse: How nice. What did you eat?

Mrs. Dewi: Don't worry, I was good!

Nurse: I have no doubt.

CLINICAL KNOWLEDGE

Mrs. Dewi: I've been avoiding those high-fiber foods you mentioned. There's been less bloating, but the discomfort is still there sometimes.

Nurse: That's good to hear about the bloating. Remember, with irritable bowel syndrome, it can take some time to see the full benefits of dietary changes. Let's keep monitoring this.

Mrs. Dewi: All right.

CRITICAL THINKING

Nurse: Besides diet, other factors such as stress can impact IBS. Have you noticed any patterns or specific times when the discomfort increases?

Mrs. Dewi: Now that you mention it, evenings are tougher. I tend to worry about things at night.

Nurse: That's a helpful observation. Stress management can be a key part of managing IBS symptoms. Let's explore some options to help you relax in the evenings.

Mrs. Dewi: I know, I should probably stay off the internet.

CLINICAL JUDGMENT

Nurse: Definitely before bed. But I'd recommend trying some relaxation techniques as well, such as guided imagery or deep-breathing exercises. It could help ease your symptoms.

Mrs. Dewi: I haven't tried those before. How do they work?

Nurse: I can show you some techniques and provide resources. We can practice a few together to get you started.

PSYCHOMOTOR SKILLS

Nurse: Now, let's do a quick abdominal check. Please let me know if you feel any discomfort.

Nurse Ali performs a gentle abdominal examination.

Mrs. Dewi: It's a little tender but not painful.

Nurse: That's normal. I'm checking for any unusual signs.

Mrs. Dewi: Nothing unusual?

COGNITIVE SKILLS

Nurse: Nothing unusual. You know, your feedback is important. Have we talked about keeping a symptom diary? You can note down your meals, stress levels, and when you experience discomfort.

Mrs. Dewi: That sounds like a plan. I can track what I eat and how I feel each day.

Nurse: Exactly. This diary will help us both see the bigger picture and adjust your care plan more effectively.

14.2 Types of Interventions

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the categories of patient care used in the implementation phase
- Compare different interventions used to implement care
- Recall the focus of interventions based on nursing diagnosis
- Describe how to effectively prioritize nursing interventions
- Define delegation rules regarding assigning interventions

A well-structured care plan is pivotal to ensuring patient well-being and recovery. At the heart of this plan are interventions—actions designed to either mitigate harmful outcomes or promote beneficial health results. More than tasks or procedures, interventions are the active components of nursing care that are tailored to address specific patient needs and health goals.

This module will cover the diverse range of interventions, which may be dependent, independent, and interdependent. It will explain how various interventions are employed during the implementation phase of the nursing process. It will also explore how to align interventions with nursing diagnoses, ensuring that each action taken is purposeful and grounded in clinical reasoning, and identify how to prioritize and delegate interventions as needed. These topics highlight the importance of understanding the scope of practice and the dynamics of working within an interdisciplinary team. First, the section takes a closer look at the categories of patient care.

Categories of Patient Care

During the implementation phase of patient care, different categories of interventions are used to address the patient's needs effectively. Medical interventions are treatments and procedures that are performed by healthcare providers, such as administering medications or conducting diagnostic tests. Nursing interventions encompass a broad range of actions that are performed by nurses to meet their patients' physical, emotional, and psychosocial needs. These interventions may include administering prescribed medications, providing wound care, assisting with activities of daily living (ADLs), and educating patients and families about self-care techniques.

Imagine following a nurse through a typical shift in the hospital. The nurse's day begins with a handover from the previous shift, during which they review patient notes and plan their schedule. Then, the nurse heads to patient rooms for the beginning of shift assessments, checking vital signs, administering medications, and chatting with each patient about how they feel. The nurse updates care plans based on observations and discussions with patients to ensure their needs are met.

Throughout the shift, the nurse performs various tasks—from changing dressings on a postsurgical wound and assisting a patient with mobility exercises to providing patient education on managing conditions. Between these activities, the nurse coordinates care by consulting with providers about changes in a patient's condition, coordinating diagnostic tests, and participating in multidisciplinary team meetings to discuss patient care strategies. Think about how the nurse might categorize the activities they do (Figure 14.2). Some actions involve direct interaction with patients, addressing their immediate needs and providing comfort. Actions not performed at bedside are equally important for patient care and require coordination and planning behind the scenes. Direct care and indirect care are two categories that form the basic dichotomy during the implementation phase of the nursing process (FVI School of Nursing and Technology, n.d.).

(a) (b)

FIGURE 14.2 Nursing tasks can involve (a) direct interactions with patients or (b) take place behind the scenes. (credit a: modification of "World Breastfeeding Week spotlights lifelong benefits of nursing final version" by U.S. Navy Petty Officer 1st Class James Stenberg/ Health.mil, Public Domain; credit b: modification of "Technology (5815873138)" by Medill DC/Wikimedia Commons, CC BY 2.0)

Direct Care

Interventions that involve personal contact or interaction with patients, whether in person, over the phone, or digitally, are known as **direct care**. This type of care is a key component of the implementation phase, as it allows nurses to assess patients' conditions firsthand, respond to their needs, and provide immediate comfort and support. Examples of direct care interventions include administering medications, performing physical assessments, assisting with daily living activities, treating wounds, and educating patients about their health conditions. These interactions are essential for the physical aspects of patient care and building rapport and trust—two essential elements in the therapeutic relationship between a nurse and a patient.

Indirect Care

Tasks and interventions that are performed away from the patient but are still vital to their overall care are called **indirect care**. This type of care is crucial for the successful implementation of a patient's care plan, and it requires organizing, managing, and coordinating healthcare services. Indirect care interventions may include documentation, collaborating with other healthcare professionals, arranging referrals or follow-up care, and managing resources. For example, the nurse's consultations with providers and participation in care planning meetings are forms of indirect care. These activities, though not always visible to patients, significantly affect the quality and efficacy of the care provided.

LIFE-STAGE CONTEXT

Tailoring Direct and Indirect Care for Different Age Groups

Both direct and indirect nursing care needs to be adapted according to the age of the patient to ensure it is appropriate and effective. Understanding these variations is crucial for nursing students as they prepare to cater to a diverse patient population.

- Neonatal patients: In neonatal care, direct care involves delicate handling, as these patients are extremely vulnerable. Tasks such as bathing, feeding, and physical assessments require gentle and precise techniques. Indirect care includes coordinating with pediatricians and lactation consultants and educating parents about neonatal care. The focus is on providing a safe, nurturing environment conducive to growth and development.
- Pediatric patients: With older children, direct care includes age-appropriate communication to explain procedures and engage them in their care. This might involve using play therapy for assessments or distraction techniques during uncomfortable procedures. Indirect care includes collaborating with family members and school officials to support the child's health needs, both in the hospital and upon their return to school.

- Adult patients: Direct care for adults involves a more collaborative approach, encouraging patient autonomy and informed decision-making. This might include teaching self-care skills for chronic disease management. Indirect care involves coordinating care transitions, such as from hospital to home or rehabilitation facilities. It could also include arranging for home health services or occupational therapy.
- Older adult patients: In care for older adults, direct care often requires understanding the complexities of aging, such as managing multiple chronic conditions or addressing mobility issues. Indirect care includes working with multidisciplinary teams to coordinate care, considering factors such as home safety assessments and support systems to ensure a safe living environment.

In each age group, the nuances of direct and indirect care reflect the unique needs and challenges of the patients. Adapting these care approaches based on age is essential for providing holistic and effective nursing care.

Types of Interventions

In healthcare settings, nurses employ various interventions to implement care plans that cater to the diverse needs of patients. These interventions are categorized as dependent, independent, or interdependent. Each type of intervention plays a distinct role in promoting patient well-being and facilitating recovery. Understanding the differences between these intervention types is essential for nurses, as it allows them to deliver comprehensive and effective care tailored to individual patient needs.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Implementing Various Types of Nursing Interventions

Jarrell, a registered nurse working in a busy medical-surgical unit, is assigned to care for Mr. Johnson, a 65-year-old patient admitted with exacerbation of heart failure. During his assessment, Jarrell notices that Mr. Johnson is experiencing shortness of breath, has crackles in his lungs upon auscultation, and his oxygen saturation levels are below the target range. Interpreting these cues, Jarrell determines that Mr. Johnson requires immediate interventions to address his respiratory distress and manage his heart failure exacerbation.

Responding to the situation, Jarrell implements a variety of interventions tailored to Mr. Johnson's needs. For dependent interventions, Jarrell contacts the healthcare provider to request orders for supplemental oxygen therapy and intravenous diuretics to reduce fluid overload and improve Mr. Johnson's respiratory status. Additionally, he administers prescribed medications such as angiotensin-converting enzyme (ACE) inhibitors and beta blockers as ordered to optimize cardiac function and alleviate symptoms.

For independent interventions, Jarrell provides emotional support to reassure Mr. Johnson and alleviate anxiety associated with his breathing difficulties. He also assists him with ADLs, such as positioning for optimal respiratory function and facilitating mobility to prevent complications associated with immobility. Furthermore, Jarrell educates Mr. Johnson about dietary restrictions, fluid management, and medication adherence to empower him in managing his heart failure at home.

Recognizing the complexity of Mr. Johnson's condition and the importance of interdisciplinary collaboration, Jarrell engages in interdependent interventions. He communicates with the respiratory therapist to initiate respiratory treatments, such as nebulizer therapy or chest physiotherapy, to improve Mr. Johnson's ventilation and oxygenation. Jarrell also collaborates with the physical therapist to develop a plan for progressive mobility exercises and with the dietitian to optimize Mr. Johnson's nutrition and fluid intake while adhering to his dietary restrictions.

There are also other ways to categorize the activities a nurse performs (Table 14.2). During a shift, the nurse performs many tasks on their own without input from providers (**independent intervention**). The nurse also performs some tasks only after getting instructions from a provider (**dependent intervention**). The nurse may also perform tasks as part of a collaborative, multidisciplinary team (**interdependent intervention**).

Nursing Intervention	Description	Rationale	Examples
Independent	Actions initiated and carried out by the nurse based on their clinical judgment, without instructions from others	Addresses immediate patient needs promptly, proactively enhances comfort and well-being, and empowers nurses to use their clinical judgment	Providing emotional support, assisting with ADLs, educating patients on self-care, implementing preventive measures (e.g., pressure-relieving cushions, fall prevention)
Dependent	Actions carried out under the orders or direction of a healthcare provider (e.g., physician, nurse practitioner)	Ensures that medically essential treatments are delivered safely and effectively according to the provider's orders	Administering medications, performing prescribed treatments or procedures (e.g., wound care, dressing changes), preparing patients for surgery
Interdependent	Collaborative actions that require coordination with other members of the healthcare team	Leverages the expertise and resources of the entire healthcare team to provide comprehensive, holistic care that addresses the patient's physical, emotional, and social needs	Interdisciplinary rounds to discuss patient progress, coordinating transitions of care (e.g., discharge planning), participating in multidisciplinary meetings for complex case management (e.g., diabetes management with a dietitian, physical therapist, and social worker)

TABLE 14.2 Types of Nursing Interventions

Focus of Interventions Based on Nursing Diagnosis

Healthcare providers design interventions to solve or reduce the risk of health problems. Just as there are different types of interventions, there are different patient problems (Table 14.3). A nurse may start their shift in one patient's room, administering medication to help lower high blood pressure—which is an immediate and observable health issue. In another room, the nurse may identify that a patient is at risk of developing pressure ulcers due to limited mobility. In a third room, the nurse collaborates with other healthcare professionals to manage a patient with complex diabetic needs—a situation that often includes a variety of problems, some immediate, some distant, some serious, and some minor.

Problem Type	Definition	Focus of Interventions	Example
Actual	An immediate, identified issue currently affecting a patient	Resolving existing health problems and improving the patient's current condition	Treating high blood pressure with medication, monitoring, and lifestyle education
Potential	A risk or condition a patient is susceptible to but is not currently manifesting	Preventing the potential problem from becoming an actual problem; implementing preventive measures	Identifying a patient with limited mobility as being at risk for pressure ulcers and implementing regular repositioning and pressure-relieving devices
Collaborative	A complex issue requiring the coordinated efforts of multiple healthcare professionals	Addressing complex care needs that require a multidisciplinary approach	Managing a patient with diabetes by collaborating with a dietitian, endocrinologist, and diabetes educator

TABLE 14.3 Types of Patient Problems

Prioritizing Nursing Interventions

In nursing practice, prioritizing interventions is a crucial skill that ensures efficient and effective patient care. This process is similar to prioritizing assessments, as discussed in Establishing Priorities During Assessment. Nurses often utilize tools such as the ABC framework (airway, breathing, circulation) (Figure 14.3) and Maslow's hierarchy of needs to determine the order of their interventions (Figure 12.4). These frameworks remind nurses to address life-threatening problems first, then basic needs next, before proceeding to less critical issues. Prioritizing helps ensure a systematic approach to patient care (Marymount University, 2022).

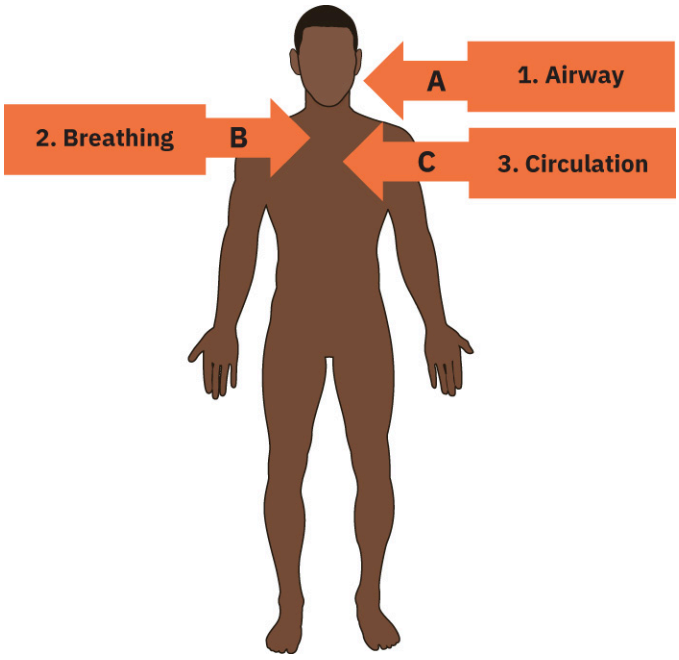

FIGURE 14.3 The ABC framework directs nurses to prioritize issues involving the airway, breathing, and circulation. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

For instance, if a patient is experiencing breathing difficulties and has a long-term mobility issue, the nurse should address the breathing problem first, as it poses an immediate risk to the patient's life. Once stabilized, the nurse can

focus on interventions for the patient's mobility. By prioritizing interventions, nurses can efficiently manage their time and resources to focus on the most pressing issues first and then address other important (but less critical) aspects of patient care.

REAL RN STORIES

Quick Decision-Making in a High-Stakes Environment

Nurse: Ife, RN, BSN
Clinical setting: Emergency department
Years in practice: 5
Facility location: Savannah, Georgia

During a particularly busy shift in the Emergency Department, I encountered a situation that tested my ability to prioritize under pressure. A young man, around 25 years old, was rushed in following a motorbike accident. He was conscious but visibly in pain and disoriented.

Upon initial assessment, I noticed he had a compound fracture in his leg and was bleeding, but he was also struggling to breathe. Remembering the ABC framework, I immediately recognized that his airway and breathing were at risk, which took precedence over his leg injury despite the visible trauma.

Working swiftly, I called for respiratory support and ensured his airway was clear. Once his breathing stabilized and oxygen was administered, I turned my attention to his leg. The bleeding needed to be controlled quickly to prevent shock. I applied pressure to the wound and called for assistance from the trauma team.

In that moment, my years of training in prioritizing patient care based on immediate threats to life came into play. Although the fracture was severe, addressing his respiratory distress first was crucial for his survival. After stabilizing his breathing and controlling the bleeding, he was taken for surgery to address his leg injury.

Reflecting on this experience, I realize how critical our role as nurses is in making quick, life-saving decisions. Prioritizing patient needs isn't just a part of our job; it's a responsibility that can mean the difference between life and death.

Assessing Patient Safety

Ensuring patient safety is a primary concern during the implementation phase and is integral to prioritizing nursing interventions. Nurses continually assess potential threats to patient safety, such as fall risks, medication errors, or complications from immobility. They must prioritize interventions that mitigate these risks for patients. For example, when administering medications, nurses must carefully follow protocols to prevent errors, considering risk factors such as correct dosages, patient allergies, and medication interactions. In direct patient care, a nurse may prioritize interventions that prevent falls for a patient with mobility issues, such as ensuring the environment is safe, assisting with ambulation, and educating the patient and their family about fall-prevention strategies. For a postoperative patient, a nurse typically prioritizes wound care and monitors for signs of infection to prevent complications. These actions, focused on maintaining patient safety, highlight the nurse's role in identifying and addressing potential hazards, ensuring that care delivery is effective and safe.

Delegating Interventions

Delegation in nursing is a crucial skill involving the transfer of responsibility for certain tasks while retaining accountability for the outcome. Nurses delegate tasks to manage time effectively and ensure patient care is delivered efficiently. However, not every task can be delegated, and not every staff member can accept a request for delegation. Understanding when and why to delegate involves considering the "five rights" of delegation, which are listed in Table 14.4 (National Council of State Boards of Nursing & American Nurses Association [NCSBN & ANA], 2019). Delegation is discussed further in 15.4 Nursing Standards of Delegation.

Right	What It Means	Example
Right Task	The task must be appropriate for delegation.	Delegate the monitoring of routine vital signs to a nursing assistant, a task within their competency.
Right Circumstance	The circumstances must be appropriate for delegation.	Ensuring the patient's condition is stable and appropriate for delegation.
Right Person	The individual must be able to perform the task delegated to them.	Selecting a qualified and competent team member to perform a task, such as a licensed practical nurse for administering oral medications.
Right Communication	The instructions regarding the task must be clear.	Providing clear, specific instructions on the task.
Right Supervision	The individual performing the task must be properly supervised.	Requires the nurse to monitor the delegated task and intervene if necessary, ensuring patient safety and quality of care.

TABLE 14.4 Rights of Nursing Delegation

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Delegating Nursing Interventions

Taylor is a registered nurse working in a medical-surgical unit. She is responsible for caring for several patients, including Mr. Martinez, a 70-year-old patient admitted for pneumonia. During her morning rounds, Taylor notices several cues indicating a change in Mr. Martinez's condition.

- Recognize Cues: Mr. Martinez appears more fatigued than usual, with increased respiratory effort. His oxygen saturation levels have dropped to 88% on room air. Mr. Martinez is coughing more frequently and producing thicker sputum. There is new-onset confusion and restlessness noted in his behavior.
- Analyze Cues: Based on these cues, Taylor analyzes the situation and considers possible reasons for the changes in Mr. Martinez's condition. She recognizes that the decreased oxygen saturation levels, increased respiratory effort, and changes in mental status could indicate worsening pneumonia and respiratory distress. The thicker sputum production suggests a potential airway obstruction or worsening infection.
- Form a Hypothesis: Taylor forms a hypothesis that Mr. Martinez's pneumonia may be progressing, leading to respiratory compromise and altered mental status. She suspects that prompt interventions are necessary to improve his oxygenation, clear his airway, and address the underlying infection to prevent further deterioration.
- Take Action: Taylor decides to delegate certain interventions to the certified nursing assistant (CNA) assigned to assist her. She instructs the CNA to assist Mr. Martinez with positioning to optimize his respiratory mechanics, such as elevating the head of the bed. While the CNA helps to reposition Mr. Martinez, Taylor gathers the necessary supplies and initiates supplemental oxygen therapy as prescribed by the healthcare provider to improve oxygenation.

Scope of Practice

As discussed in Scope of Practice, the nursing scope of practice refers to the defined limits and parameters within which nurses are authorized to work, make decisions, and provide services. Scope is established by regulatory bodies, licensing boards, and professional organizations such as the American Nurses Association (ANA).

The nursing scope of practice is a critical factor when making delegation decisions. It dictates what nurses are legally permitted to do and informs which tasks can be delegated to other team members. For instance, although registered nurses (RNs) can delegate noninvasive procedures such as bed bathing to nursing aides, they cannot delegate tasks that require clinical judgment, such as patient assessments (NCSBN & ANA, 2019). Understanding

the scope of practice ensures that delegation aligns with legal and professional standards, safeguarding the patient and the healthcare provider.

LINK TO LEARNING

The ANA maintains a web page on the nursing scope of practice (https://openstax.org/r/77ANAscope) that includes an option to purchase the complete resource, currently in its fourth edition.

Interdisciplinary Team

Delegating interventions within an interdisciplinary team requires a thorough understanding of each team member's scope of practice to ensure safe, effective, and comprehensive patient care. The scope of practice for each healthcare professional is defined by their education, training, certification, and licensure, which determines the specific tasks they are qualified to perform. When delegating interventions, it is crucial for healthcare providers to clearly communicate and collaborate, assigning tasks that match each team member's expertise and skills. For instance, a nurse may delegate tasks such as vital signs monitoring, assisting with ADLs, and collecting specimens to a certified nursing assistant (CNA). Meanwhile, licensed practical nurses (LPNs) or licensed vocational nurses (LVNs) might be assigned more complex tasks, including administering oral medications and performing basic wound care. However, interventions that require advanced clinical judgment, such as creating and implementing care plans, performing initial health assessments, and developing treatment plans, should be reserved for registered nurses (RNs).

By adhering to the defined scopes of practice and leveraging the unique strengths of each team member, interdisciplinary delegation fosters an environment of teamwork and ensures that patient care is delivered efficiently and effectively. Effective interdisciplinary delegation requires clear communication and collaboration among team members, with a focus on patient-centered care (PCC) where decisions prioritize the patient's needs and preferences.

Nurses also play a pivotal role in making referrals to the interdisciplinary team. They assess the patient's condition and needs, identify when specialized care or expertise is required, and initiate or suggest referrals to other healthcare professionals (dependent upon agency policies). For example, a nurse might refer a patient to a physical therapist for mobility issues, a dietitian for nutritional counseling, or a social worker for support with discharge planning and community resources. These referrals are based on comprehensive patient assessments and the nurse's clinical judgment, ensuring that the patient receives holistic and coordinated care. By making appropriate referrals that reflect defined scopes of practice, nurses help foster a collaborative environment that enhances the quality and efficiency of patient care.

In the context of an interdisciplinary care team, delegation fosters collaboration and maximizes the expertise of various professionals working together to care for patients. Effective delegation within an interdisciplinary team promotes comprehensive patient care, with each member bringing their specific skills and knowledge to support optimal patient outcomes.

14.3 The Nurse's Role in Evaluation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain how the evaluation phase reveals a patient's progress
- Recognize how the evaluation phase provides a system for nurses to define, explain, and measure patient care
- Identify the evaluation phase's role in promoting continuity of care
- Identify ways the nurse evaluates the plan of care
- Recognize how the nurse analyzes conclusions during the evaluation phase

In the nursing process, the evaluation phase follows the implementation phase, marking the final step. The systematic determination of a patient's progress toward achieving the outcomes and goals set during the care-planning process is called **evaluation**. It is a dynamic and ongoing activity in which nurses assess whether the

patient's health status is improving, staying the same, or worsening in response to the nursing interventions. This phase is crucial because it determines the effectiveness of the nursing care provided, informs necessary changes to the care plan, and ensures that the patient's health needs are adequately met (ANA, n.d.).

Determine the Patient's Progress

Determining the patient's progress is a fundamental step in the evaluation phase. In this phase, nurses compare the patient's current status to the baseline data collected during the assessment phase and the expected outcomes established during the planning phase. Through careful analysis of data, nurses can determine whether the patient's condition has improved, remained stable, or deteriorated since the initiation of care. They assess whether the patient is meeting the expected outcomes outlined in the care plan and identify any discrepancies or areas where adjustments may be needed.

The nurse will perform a comprehensive review of a patient's current health status compared to the expected outcomes outlined in the care plan. They will assess various factors to gain insight into how well the interventions have worked and whether a patient is on track to meet goals. However, it is not just about noting improvements—the nurse also identifies areas where progress might be lagging or complications have developed.

Analyze Current Data

As described in Chapter 12 Assessment: Recognizing Cues, nurses are continually obtaining and analyzing data from their patients, and this includes during the evaluation phase (Lukey, 2023). To analyze current data, nurses review various sources of information, including objective data such as vital signs, laboratory results, and physical assessments, as well as subjective data provided by the patient or their family members regarding symptoms, comfort level, and overall well-being. Although tasks such as obtaining updated vital signs can be delegated to unlicensed assistive personnel (e.g., CNA), physical assessment and evaluating the data remain the responsibility of the nurse.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: Using Current Data to Determine Effectiveness of Interventions

Janieh, a registered nurse working in a pediatric unit, is caring for a 5-year-old child, Emily, who was admitted with a severe asthma exacerbation. Emily has been receiving nebulized bronchodilators and corticosteroids as prescribed, but her respiratory distress persists despite treatment. Janieh is tasked with assessing Emily's response to the interventions and determining the next course of action.

- Recognize cues: Emily continues to exhibit audible wheezing and retractions, indicating ongoing respiratory distress. Emily's respiratory rate remains elevated at thirty breaths per minute. Emily appears restless and irritable, with increased work of breathing noted.
- Analyze cues: Based on the cues observed, Janieh analyzes Emily's response to the nursing interventions implemented thus far. Despite receiving nebulized bronchodilators and corticosteroids, Emily's respiratory distress persists, as evidenced by the continued presence of wheezing, retractions, and elevated respiratory rate. Additionally, Emily's restlessness and irritability suggest that she is experiencing discomfort and difficulty breathing, further highlighting the inadequate response to treatment.

Janieh concludes the current nursing interventions have not been effective in alleviating Emily's respiratory distress. Despite receiving appropriate medications, Emily's condition has not improved, and she continues to exhibit signs of respiratory compromise. By recognizing cues that suggest inadequate improvement in Emily's condition despite treatment, Janieh can take proactive steps to reassess and modify the care plan to promote optimal patient outcomes.

To analyze current data, the nurse will utilize the patient's medical records since the start of the implementation phase, including vital signs and other objective data that provide observable and measurable evidence of progress. Subjective data, such as a patient's reports of pain and feelings about progress, are also crucial as they give the nurse a holistic view of the patient's experience and recovery.

The team also evaluates the effectiveness of patient education by assessing a patient's understanding and

adherence to the care plan. This comprehensive analysis helps the nursing team make informed decisions about necessary adjustments to the care plan, ensuring it remains aligned with a patient's health needs and goals.

System for Nurses to Define, Explain, and Measure

The evaluation stage in the nursing process is a systematic approach for nurses to define, explain, and measure the effectiveness of patient care. This stage enables nurses to concretely define the outcomes of their interventions, explain the reasons behind the success or failure of these interventions, and measure the extent to which patient care goals have been met. By defining specific criteria for success and measuring a patient's progress against these benchmarks, the team can objectively evaluate the quality and efficacy of the care provided.

Verify the Quality of Nursing Care

Nurses assess the quality of care provided to patients by comparing actual outcomes to predetermined standards and benchmarks. Verifying the quality of nursing care involves a detailed assessment of the care provided against established standards and guidelines. They must confirm that interventions were implemented correctly, adherence to evidence-based practice guidelines was maintained, and patient outcomes met the established criteria for success. By verifying quality, nurses ensure that patients receive safe, effective care aligned with best practices.

Analyze Nursing Interventions

Nurses analyze the effectiveness of interventions implemented during the care process to determine their effect on patient outcomes. They examine the patient's response to treatment, assess changes in their condition over time, and identify any factors that may have influenced the effectiveness of interventions. Through this analysis, nurses gain valuable insights into which interventions are most beneficial for specific patient populations, allowing for continuous improvement in care delivery. In analyzing the nursing interventions, the nursing team critically evaluates each action and its outcome. This detailed analysis can involve both objective and subjective data from the patient.

PATIENT CONVERSATIONS

Discussing Intervention Effectiveness

Nurse: Good morning, Mr. Silva. How are you feeling today?

Patient: Morning, Nurse. I'm feeling okay, just a bit sore from the surgery.

Nurse: That's understandable after knee replacement surgery. Let's talk about how you're doing with the interventions we've implemented. First, let's discuss your pain management. How has your pain management been since we started administering medication every four hours?

Patient: It's not as bad. The pain is much more manageable now.

Nurse: I'm glad to hear that. It's important that we keep your pain at a tolerable level so you can participate in rehabilitation exercises. Have you experienced any side effects from the medication, or is there anything else you're experiencing?

Patient: Not really, no. I've been a bit drowsy, but that's about it.

Nurse: Good to know. Now, let's talk about your mobility. How have you been finding the physical therapy sessions?

Patient: They're challenging, but I can already feel some improvement in my knee's flexibility.

Nurse: That's great progress. What has been your experience with the at-home exercises? Are the exercises we showed you for at-home practice clear and manageable?

Patient: Yes, I've been doing them every day. They help with the stiffness.

Nurse: Excellent. How are you feeling about the self-care instructions we went over, such as wound care and the signs of infection to watch for? Is there anything you're unsure about?

Patient: Yes, those instructions are clear. The wound seems to be healing well, no redness or swelling.

Nurse: Perfect. It's crucial to monitor the wound for any changes.

Patient: I understand.

Nurse: That's great. Your feedback is valuable in helping us evaluate and adjust our care plan. Is there anything else you'd like to discuss or any questions you have about your ongoing care or what we've talked about today?

Patient: No, I think I'm good for now. Thank you for taking the time to go through everything with me.

Nurse: Of course, Mr. Silva. We're here to support you every step of the way. Keep up the good work with your recovery!

Promote Accountability among Nurses

Nurses hold themselves and other members of the healthcare team accountable for the care provided to patients. They ensure that interventions are documented accurately, responsibilities are fulfilled, and communication among team members is clear and effective. By promoting accountability, nurses foster a culture of transparency, professionalism, and collaboration, ultimately enhancing the quality and safety of patient care. Promoting accountability in a patient's care requires each nurse to reflect on their individual contributions and understand their effect on the patient's experience and outcomes. This self-assessment and accountability ensure that each nurse takes ownership of their part in a patient's care, fostering a responsible and reflective practice environment that prioritizes patient well-being.

Promote Continuity of Care

As discussed earlier in this chapter in Providing Continuity of Care, continuity of care is a vital aspect of the nursing process, ensuring patients receive consistent, uninterrupted support throughout their healthcare journey (Regis College, 2023). During the evaluation phase, nurses play a crucial role in promoting continuity of care, especially as patients transition between various stages of recovery. The nurse continuously assesses a patient's progress and adjusts the care plan based on these evaluations. These coordinated efforts may occur between hospital staff, home healthcare providers, and the patient's family, all with the overall goal of maintaining the quality and effectiveness of care across each setting.

Establish Patterns of Continuous Care

Establishing patterns of continuous care is essential for patients transitioning between healthcare settings. This process involves meticulous planning to ensure each care setting is equipped to meet the diverse needs of patients. For instance, a patient moving from a hospital to home care may require arrangements for home healthcare services, whereas a patient transitioning to a rehabilitation facility might need specialized rehabilitation plans. Nurses coordinate care transitions by preparing detailed discharge plans, facilitating communication between healthcare providers, and ensuring seamless access to a patient's medical history. This coordinated approach aims to maintain the quality of care, regardless of the setting—whether it's a patient's home, another hospital, or a long-term care facility.

Patient and Family Involvement

Involving patients and their families (if the patient permits) in the continuity of care process is crucial for successful health outcomes. Educating patients and families about postdischarge care, such as medication management, wound care, and the importance of follow-up appointments, is a key responsibility of the nursing team. This education empowers family members to actively participate in a patient's care and decision-making. Encouraging family members' input in care planning ensures that their preferences and concerns are considered and fosters a collaborative approach to health management. This supportive involvement enhances adherence to treatment plans and provides emotional support, as patients and their families feel more in control and informed about their healthcare journey (Agency for Healthcare Research and Quality, 2012).

Evaluate Data

Evaluating data is a pivotal aspect of the nursing evaluation phase. Nurses systematically review collected data to assess the effectiveness of nursing interventions and the patient's overall progress. This process involves examining various types of data, including vital signs, lab results, pain assessments, and patient feedback. By examining data, nurses can determine whether the patient's health outcomes align with the goals set in the care plan. The

evaluation of data is also crucial for ensuring high-quality patient care, as it informs any necessary changes or adjustments to the care plan. It helps the nurse identify trends, understand the patient's response to treatment, and make evidence-based decisions. Thorough evaluation ensures that care remains patient-centered and is continuously adapted to meet the patient's evolving needs.

Compare Activities to Identified Outcomes

When comparing activities to identified outcomes, nurses carefully assess the interventions implemented during patient care and evaluate their contribution to achieving the desired goals and outcomes. They review the care plan to identify specific objectives and measurable criteria established for each patient's condition or situation.

Then, nurses systematically compare the activities performed during care delivery to the identified outcomes to determine whether progress has been made toward achieving the desired goals. For example, if the goal is to improve mobility in a postoperative patient, the nurse will assess whether interventions, such as ambulation exercises and physical therapy sessions, have led to increased mobility and independence. Comparing provides nurses with valuable insights into the effectiveness of interventions, helps them identify areas for improvement, and empowers them to make informed decisions about modifying the care plan to better meet a patient's needs and goals.

Analyze Conclusions

The final part of the evaluation phase involves analyzing the conclusions drawn from the data assessment (Table 14.5). This crucial step determines the future course of the patient's care plan. Nurses analyze whether the care provided has achieved the desired outcomes or if there are areas where the goals have not been met.

Evaluation	When to Make the Decision	Actions to Take	Rationale
Goal met	Patient's condition or situation aligns with expected outcomes defined in the care plan.	Continue with current plan of care.	Interventions are effective and patient is progressing toward desired outcomes. No need to modify current strategies unless the patient's condition changes or new goals emerge.
Goal unmet	Patient's condition does not improve as expected, new issues arise, or goals are not met.	Reassess patient's condition, review interventions, consult with healthcare professionals, and revise the care plan.	Current interventions may not be fully effective, patient's condition may have changed, or new challenges may have arisen. Modifying interventions, setting new goals, or exploring alternative approaches can optimize care delivery and improve outcomes.
Terminate	Interventions are no longer relevant, feasible, or effective in achieving desired outcomes.	Discontinue specific interventions, focus on other interventions, or adjust the care plan to remove irrelevant aspects.	Terminating interventions can be appropriate when specific goals are not met, certain treatments are no longer beneficial, or the patient's condition or preferences have changed.

TABLE 14.5 Analyzing Conclusions

This analysis is foundational in deciding whether to continue with the current care plan, make revisions for better

outcomes, or terminate interventions that are no longer necessary. The ability to make these determinations is a key component of nursing judgment and ensures that patient care is both effective and adaptable.

REAL RN STORIES

Flexibility and Adaptation in Managing High Cholesterol

Nurse: Junot, RN, BSN
Clinical setting: Community health clinic
Years in practice: 6
Facility location: San Diego, California

In my six years as a registered nurse, particularly in a community health setting, I've learned the importance of being adaptable and responsive to patient care plans. A memorable case that highlights this was with Mr. Jacobs, a 52-year-old patient with a diagnosis of high cholesterol.

Initially, we developed a care plan focusing on lifestyle modifications: diet changes, increased physical activity, and regular health monitoring. Despite our efforts, Mr. Jacobs's cholesterol levels remained high during subsequent checkups. This was a clear indication that our initial plan was not as effective as we had hoped.

Acknowledging this, we revised Mr. Jacobs's care plan. We introduced a more structured diet program and the provider added a cholesterol-lowering medication. We also involved a dietitian for more personalized dietary guidance and scheduled more frequent follow-ups to closely monitor his progress.

The revised plan showed significant improvement in Mr. Jacobs's cholesterol levels. He became more engaged in his care, often sharing his new recipes and exercise routines with us. His dedication and our collaborative approach paid off, and over time, his cholesterol levels stabilized to a point where we could gradually reduce and eventually terminate the medication.

This experience with Mr. Jacobs reinforced the dynamic nature of nursing care. It highlighted the necessity of continually evaluating and adjusting our care plans, staying patient-centric in our approach, and being open to changing strategies when initial plans don't yield the expected results. The success of this case was a testament to the power of collaboration, patient involvement, and the willingness to adapt for the betterment of patient health.

14.4 Evaluation Methods

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe quality assurance programs used in the evaluation phase
- Recognize how quality improvement programs guide patient care
- Identify how patient satisfaction programs influence quality of care
- Recognize how nursing-specific patient safety and quality initiative programs are incorporated into the evaluation phase

In nursing, quality is the cornerstone of effective patient care and positive health outcomes. Quality can be defined as the degree to which nursing services for healthcare consumers, families, groups, communities, and populations increase the likelihood of desirable outcomes and are consistent with evolving nursing knowledge (Agency for Healthcare Research and Quality, 2020). This definition underscores the dynamic nature of nursing, highlighting the necessity for services to achieve desired outcomes and evolve in tandem with expanding knowledge and practices in the field.

Quality in nursing is a multifaceted concept, encompassing patient safety, effectiveness, efficiency, equity, timeliness, and patient-centeredness. More information about quality is provided in Chapter 15 Evidence-Based Research, Quality Improvement, and Collaborative Practice.

This module focuses on the connection between quality and the evaluation phase of the nursing process. As discussed in earlier chapters, evaluation in nursing is not just an endpoint—it's a vital component of a continuous cycle of improvement. Through evaluation, nurses ensure that their practice is based on the best available evidence

and is responsive to the unique needs and preferences of each patient.

Quality Assurance Programs

As a crucial part of many industries and professions, **quality assurance (QA)** is oversight that ensures current quality standards are met and that staff receive the education and infrastructure support to maintain quality (Selvi, 2018). In nursing, quality encompasses behaviors or processes that result in **quality health care**. Such actions utilize practices that are consistent with current evidence and knowledge to improve the chances of preferred patient outcomes and decrease the chances of negative outcomes, such as errors.

QA programs in nursing range widely, reflecting the diversity of the healthcare field. Infection control protocols, patient safety measures, staff competency assessments, and performance reviews of clinical procedures are all examples of QA. A common theme among the programs is that they use systematic assessments, audits, and reviews to monitor performance, identify areas for improvement, and implement strategies to enhance the quality of patient care.

By integrating QA programs into the evaluation phase, healthcare organizations can proactively address issues, optimize care-delivery processes, and improve patient outcomes and satisfaction. In an inpatient setting, a QA program might focus on reducing hospital-acquired infections through rigorous hygiene practices and patient monitoring. In a community health setting, QA could involve ensuring home health nurses have up-to-date training in the latest home-care techniques and technologies. Regardless of their particular focus, QA programs typically involve a systematic process of oversight to ensure that all relevant aspects of patient care are continuously monitored and improved. The aim is to maintain quality care and ensure that healthcare staff, including nurses, are equipped with the necessary education, skills, and support infrastructure to uphold these standards.

The **Donabedian model** is a widely used framework for evaluating the quality of healthcare delivery. It is a well-known model for thinking about QA that identifies three dimensions of care (Figure 14.4) (ACT Academy, n.d.). Each component of the model has an important role:

- Structure: Pertains to the organizational and environmental factors that shape healthcare services, including the physical resources, staffing levels, and policies in place.
- Process: Includes the activities and interactions involved in delivering care, such as clinical procedures and communication among healthcare team members.
- Outcomes: Refers to the results or effects of healthcare services on patient health and satisfaction. It emphasizes the importance of evaluating the technical aspects of care delivery and its influence on patient outcomes and experiences.

FIGURE 14.4 Many QA programs focus on three dimensions: the structures within which care occurs, the processes through which care is delivered, and the outcomes of patients and populations who receive care. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Structure Evaluation

A **structure evaluation** is an assessment of the characteristics of a healthcare system or provider. These include the facilities, equipment, staffing qualifications and levels (e.g., the ratio of providers to patients), and other aspects of the physical and organizational infrastructure (ACT Academy, n.d.). A structure evaluation can provide a foundational understanding of a healthcare entity's capability to deliver quality care, enabling healthcare providers and administrators to identify areas needing improvement.

For example, hospital leadership might perform a structure evaluation to assess the adequacy and up-to-dateness of medical equipment, the physical layout of patient care areas, and the availability of necessary resources such as intensive care units or specialized labs. Staffing patterns could also be evaluated to determine whether there are enough qualified healthcare professionals to meet patient needs. The evaluation might reveal the need for more specialized nurses in a neonatal unit or for updated magnetic resonance imaging (MRI) machines to enhance diagnostic capabilities.

Process Evaluation

A **process evaluation** assesses how a system or provider delivers health care. It focuses on the procedures, protocols, and interactions involved in patient care. This type of evaluation sheds light on the actual practices and methods used in patient care, which directly affect patient outcomes. Through process evaluation, healthcare providers can identify inefficiencies or shortcomings in their care-delivery methods and make necessary adjustments to overcome them (ACT Academy, n.d.).

In a hospital setting, a process evaluation might examine how patient care is managed from admission to discharge, including how efficiently patients are triaged in the emergency room, whether best practices and protocols are followed for surgical procedures, and how effectively patient education and follow-up care is conducted. For instance, the evaluation might find that improving communication between different departments, such as surgery and postoperative care, could enhance overall patient care efficiency and outcomes.

Outcome Evaluation

An **outcome evaluation** is the assessment of healthcare outcomes on patients and populations. It measures the effectiveness of healthcare interventions and services by looking at metrics such as recovery rates, complication rates, and patient satisfaction. This evaluation provides concrete data on the effects of healthcare services, informing decisions on how to improve care quality and patient experiences (ACT Academy, n.d.). By focusing on tangible results, outcome evaluation helps hospitals identify successful practices and areas needing improvement, ultimately guiding strategic decisions to enhance patient care quality and safety.

Within a hospital, outcome evaluations might focus on specific departments or treatments. For example, evaluating the outcomes of a cardiology department might involve analyzing patient recovery rates after cardiac surgeries, the incidence of postoperative complications, and patient satisfaction with the care received. This evaluation could reveal trends such as a higher-than-average readmission rate, prompting a review of discharge procedures and postdischarge follow-up care.

Outcome evaluations can also extend to broader health outcomes, such as assessing the impact of a hospital's diabetes management program on the overall health and quality of life of patients with diabetes in the community. By examining factors such as blood sugar control, complication rates, and patient adherence to treatment plans, hospitals can gauge the effectiveness of their care protocols and patient education efforts, leading to more tailored and effective patient care strategies.

Quality Improvement Programs

The aim of a QA program is to ensure providers are meeting quality standards. But what happens if evaluations determine they are not or that standards are inadequate? In these cases, the question shifts from how to assess and assure quality to how to *improve* quality.

In health care, **quality improvement (QI)** is a systematic framework for enhancing patient care and outcomes (Kelly, 2022). Central to QI is the continuous process of identifying areas for improvement and implementing strategies to achieve better patient outcomes, efficiency, and service quality. Healthcare organizations typically have QI programs in place, and providers, including nurses, can become certified in QI. The certification allows them to showcase their expertise and commitment to improving care quality. A quality improvement nurse plays a pivotal role in QI programs, often leading initiatives and guiding implementation.

Systems and Processes

QI systems and processes vary across healthcare organizations. In a hospital, QI might focus on reducing patient readmission rates or enhancing surgical outcomes. In private practice, QI efforts could center on improving patient wait times and enhancing the patient-provider communication process. Assisted living facilities might implement QI processes to improve resident safety measures and medication management protocols. Each setting requires a unique approach to QI, tailored to its specific patient population and care-delivery model. However, most QI programs include several areas of focus, including the experiences of patients and team members and the usage of data to reveal issues and guide solutions.

Focus on Patients

The patient-focused aspect of QI programs centers on enhancing the patient experience and outcomes. This

approach involves tailoring healthcare services to meet the specific needs and preferences of patients, ensuring their involvement in care decisions, and regularly gathering and responding to patient feedback.

In diverse healthcare settings, focusing on patients manifests in different ways. In outpatient clinics, patient-focused QI might involve reducing waiting times and improving systems for scheduling appointments. In hospitals, it could include creating initiatives to improve patient-provider communication and developing more effective pain management protocols. Assisted living facilities may implement QI projects that enhance the personalization of care plans, ensuring that residents' preferences and life histories are considered in daily care activities. Across all settings, the emphasis is on recognizing and addressing the unique needs and experiences of patients to improve their overall healthcare journey.

PATIENT CONVERSATIONS

Addressing Patient Concerns for Quality Improvement

Crucial to patient-centered care is providing patients with an opportunity to give feedback on their experience. This is especially important when the patient is dissatisfied with an aspect of their care, as in the following conversation between a nurse and a patient prior to their discharge.

Nurse: Good afternoon, Ms. Smith. I'm glad to hear your treatment went well. I'm sure you're looking forward to going home.

Patient: Yes, I can't wait.

Nurse: We're continuously working to improve our care, and your feedback is vital. Can you share how you felt about your experience with us?

Patient: Well, the treatment was fine, but I felt rushed whenever I had questions for the staff. It made me a bit uncomfortable.

Nurse: I'm sorry to hear that you felt rushed, Ms. Smith. It's important to us that our patients feel heard and understood. Can you tell me more about when this happened?

Patient: Mostly during the morning rounds. The staff seemed very busy, and I didn't want to bother them, but I had questions about my medications and aftercare.

Nurse: Thank you for sharing that. We do have busy moments, but that shouldn't prevent us from addressing your concerns thoroughly. I'll bring this up with our team so we can improve our communication, especially during busy times. We might need to adjust our morning routine or provide additional support during peak hours.

Patient: That would be great. I just wanted a bit more time to understand my care plan and what I needed to do after going home.

Nurse: Absolutely, Ms. Smith. Understanding your care plan is crucial for your recovery. Maybe we could explore options such as designated Q&A time during rounds. I'll also make sure that a member of the team gives you a follow-up call tomorrow. Would that be helpful?

Patient: Yes, a follow-up call sounds like a good idea. I also think having a set time for questions would have eased my concerns.

Nurse: I'm glad to hear that, and I appreciate your feedback. We'll work on implementing these changes to improve our patients' experiences. Your insights are invaluable in helping us provide better care. If you have any more suggestions or concerns, please feel free to share them.

Focus on the Team

The team-focused aspect of QI in health care emphasizes the importance of collaboration, communication, and professional development among healthcare workers. This approach recognizes that high-quality patient care results from coordinated efforts among various healthcare professionals, each contributing their expertise to help solve problems.

For example, in hospital settings, team-focused QI might involve interdisciplinary rounds where providers, nurses, and other healthcare professionals collaboratively discuss patient care plans, ensuring comprehensive and coordinated care. In a primary care clinic, QI could be focused on enhancing team communication and coordination, particularly in managing patients with complex care needs and multiple chronic conditions. In home health care, QI initiatives may emphasize training and developing a cohesive team approach, with nurses, therapists, and caregivers working together to provide consistent and effective care in the patient's home environment. These initiatives foster a culture of teamwork and continuous learning, which are key to improving patient outcomes and staff satisfaction.

Focus on the Use of Data

The data focus in QI programs includes systematically collecting, analyzing, and applying healthcare data to inform and improve care practices. This approach leverages data to identify trends, measure the effectiveness of interventions, and guide decision-making processes.

In hospital environments, data might be used to track patient outcomes and identify patterns in readmissions or hospital-acquired infections, leading to targeted improvement strategies. In a community health center, data analysis could focus on tailoring public health initiatives and outreach programs to health trends in the local population. In a mental health facility, data might be used to evaluate the effectiveness of different therapeutic interventions, guiding improvements in treatment approaches. Across a range of settings, the strategic use of data enables healthcare providers to make evidence-based decisions, enhancing the quality and efficiency of the care they deliver.

Patient Satisfaction Programs

Patient satisfaction programs in health care are designed to gauge and improve the experience of patients during their interaction with healthcare systems. These programs vary in scope and method but aim to collect feedback from patients about their care, which can then be used to improve service delivery.

Satisfaction measurement often uses data collected through patient surveys, suggestion boxes, or direct interviews. These tools capture the patient's perspective on various aspects of care, such as the quality of communication with healthcare providers, the level of comfort and cleanliness in the facility, the adequacy of information provided about treatments, and overall satisfaction with the care received. Some programs invite patients and families to participate in policy-making and program development. For example, patient advisory councils collaborate with providers to improve the healthcare experience (Boissy & Lloyd, 2024). This approach is increasingly relevant as healthcare institutions aim to enhance patient satisfaction, a key metric under the Affordable Care Act (ACA), which ties patient experience to reimbursement rates.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)

The **Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)** is a standardized survey instrument and data collection methodology for measuring patient perspectives on hospital care (Centers for Medicare & Medicaid Services, 2023). HCAHPS (pronounced "H-caps") was developed by the Centers for Medicare & Medicaid Services (CMS) in partnership with the Agency for Healthcare Research and Quality (AHRQ) to provide a standardized measurement of patient satisfaction across all hospitals in the United States. HCAHPS was implemented in October 2006, and the first results were publicly reported in March 2008.

The rationale behind HCAHPS is to provide objective and comparable information about patients' perspectives on hospital care, which can be used to improve the quality of healthcare services. The survey consists of twenty-nine questions, nineteen of which cover critical aspects of the hospital experience, such as the communication and responsiveness of the staff, the cleanliness of the facilities, and the usefulness of discharge information; patients are also asked to give the hospital an overall rating and to say whether they would recommend it to others.

The administration of the HCAHPS survey is strictly regulated to ensure consistency and reliability. Hospitals can administer the survey through mail, telephone, or a combination of methods. The survey is given to a random sample of adult patients between forty-eight hours and six weeks after discharge, excluding those with psychiatric diagnoses. The results are publicly reported, allowing for comparison across hospitals and fostering transparency in healthcare quality.

The effect of HCAHPS is significant, leading hospitals to focus more on patient-centered care (PCC), enhance efforts at transparency and accountability, and prioritize improvements in areas directly affecting patient satisfaction. For

example, many hospitals have developed specific initiatives to improve communication skills of healthcare providers, enhance the hospital environment for patient comfort, and streamline discharge processes for better patient understanding of posthospital care. These initiatives are not only aimed at improving patient satisfaction scores but also at enhancing the overall quality of care and patient outcomes. HCAHPS has also influenced reimbursement rates under CMS policies. Hospitals with better patient satisfaction scores may receive higher reimbursement, creating a financial incentive to improve patient experience.

Nursing-Specific Patient Safety and Quality Initiatives

Patient safety and quality initiatives are critical components of health care that focus on minimizing risks, errors, and harm to patients during the delivery of care. These initiatives encompass a broad range of practices, from ensuring basic patient safety standards, such as hygiene and infection control, to implementing complex clinical protocols designed to improve the quality of care. Central to these efforts is the commitment to creating a healthcare environment that prioritizes patient well-being, safety, and the delivery of high-standard healthcare services. Modern nurses have important roles in these initiatives, which foster a culture of continuous improvement and accountability within healthcare organizations.

Nursing-Sensitive Quality Indicators

Specific metrics, called **nursing-sensitive quality indicators**, influence nursing behaviors that reflect the quality of nursing care (Phillips et al., 2021). Nurses who provide quality care can be identified by looking at desirable patient outcomes such as low fall rates, few instances of pressure ulcers and hospital-acquired infections, and high patient satisfaction scores. These indicators also cover structural and process factors such as nurse staffing levels, turnover rates, and care coordination (Table 14.6).

Nursing-Sensitive Quality Indicator	Structure	Process	Outcome
Nursing hours per patient day	X		
Patient falls		X	X
Patient falls with injury		X	X
Pediatric pain assessment, intervention, and reassessment (AIR) cycle		X	
Pediatric peripheral intravenous infiltration rate			X
Pressure ulcer prevalence		X	X
Psychiatric physical/sexual assault rate			X
Restraint prevalence			X
RN satisfaction survey options		X	X
Nursing education and training	X		
Nurse staffing levels	X		
Availability of nursing supplies	X		
Nurse-to-patient ratio	X		
Nursing certification	X		

TABLE 14.6 Nursing Sensitive Quality Indicators (Source: Oner et al., 2021.)

Nursing-Sensitive Quality Indicator	Structure	Process	Outcome
Skill mix	X		
Voluntary nurse turnover	X		
Nurse vacancy rate	X		
Nosocomial infections			X

TABLE 14.6 Nursing Sensitive Quality Indicators (Source: Oner et al., 2021.)

Nursing-sensitive quality indicators are essential to QA and QI programs. They are vital to highlighting areas where nursing care directly affects patient outcomes. For example, in assessing patient fall rates, hospitals can identify the effectiveness of their fall prevention protocols. By monitoring pressure ulcer prevalence, healthcare facilities can evaluate the adequacy of patient mobility and skin care regimens provided by nurses. These indicators help pinpoint areas for improvement as well as recognize and replicate successful nursing practices across different settings.

National Database of Nursing Quality Indicators (NDNQI)

The **National Database of Nursing Quality Indicators (NDNQI)** is a comprehensive database that provides standardized monitoring of nursing-sensitive quality indicators (Madaris, 2023). Developed by the ANA, the NDNQI allows healthcare organizations to compare their performance against national and regional benchmarks in key areas of nursing care and patient outcomes. The data collected in NDNQI encompass a range of indicators, such as patient falls, pressure ulcers, nursing care hours, staff turnover, and patient satisfaction levels.

NDNQI is a valuable tool for healthcare organizations that want to identify areas of strength and areas needing improvement. A hospital can use NDNQI data to benchmark its pressure ulcer rates against similar institutions and develop targeted interventions to reduce these incidents. The database also aids with tracking the effectiveness of implemented changes over time, allowing hospitals to see the tangible effects of their quality improvement efforts.

NDNQI also provides insights to guide staffing decisions, which helps hospitals ensure they have the appropriate nurse-to-patient ratios and skill mixes to deliver optimal care. By analyzing trends and patterns from the NDNQI, healthcare administrators and nursing leaders can make evidence-based decisions to enhance patient safety and care quality. The database is also instrumental in supporting research and policy development in nursing care, contributing to advancing the nursing profession and healthcare delivery as a whole.

LINK TO LEARNING

The National Database of Nursing Quality Indicators (NDNQI) is managed by Press Ganey, a healthcare company that also distributes a popular survey on outpatient satisfaction. Read this Press Ganey blog (https://openstax.org/r/77PressGaneyBlg) to learn more about the purpose, content, and uses of the NDNQI.

14.5 Guidelines for Effective Documentation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how to document data collected during the implementation phase
- Describe requirements for documentation of risk management
- Define how to document evaluation of interventions
- Describe the importance of accuracy when documenting
- Identify appropriate terminology to use when documenting
- Recognize types of source-oriented documentation
- Describe different problem-oriented types of documentation

Nurses document a wide range of data—including vital signs, medication administration, results of assessments,

and responses to treatment and other interventions—for a variety of purposes. Documenting information accurately and comprehensively ensures continuity of care, supports clinical decision-making, manages risk, and aids in evaluating the effectiveness of interventions.

The ANA has articulated six principles for high-quality documentation by nurses (Table 14.7) (ANA, 2010). This module demonstrates how these principles apply to documentation in the real world, as well as the various purposes and components of high-quality documentation.

Principle	Explanation
1. Documentation characteristics	High-quality documentation has several identifiable characteristics, including accessibility, completeness, legibility, and timeliness.
2. Education and training	Nurses must receive sufficient education and training to ensure they are capable of performing high-quality documentation.
3. Policies and procedures	Nurses must know and apply all of their organization's policies and procedures relevant to documentation.
4. Protection systems	Documentation must happen in systems that have been designed to ensure patient security and confidentiality.
5. Documentation entries	Each documented entry must be authenticated and made in a standardized manner, with an accurate date and time stamp.
6. Standardized terminologies	All nurses must use a standardized, agreed-upon terminology to describe the steps in the nursing process and patient symptoms and conditions.

TABLE 14.7 ANA Nursing Documentation Principles

LINK TO LEARNING

The ANA's six principles for nursing documentation are explained in this pamphlet (https://openstax.org/r/77ANA6Principle) along with a variety of recommendations for effective documentation.

Documenting Data Collected

As discussed in 12.3 Collection of Assessment Data, data consist of information that nurses gather about a patient's health status. Baseline and ongoing assessments of the patient's health status, including the recording of vital signs such as blood pressure, heart rate, temperature, and respiratory rate are among the most critical aspects of nursing documentation. Nurses also meticulously document specific assessments related to the patient's condition, such as pain levels, mobility, nutritional status, and mental health assessments. These data form the foundation upon which treatment plans are developed and adjusted.

Another crucial aspect of nursing documentation is the administration of medications and treatments, which must include the time, dosage, route, and any patient reactions or side effects. This information is vital for managing the patient's treatment and ensuring other healthcare providers are aware of the patient's current interventions.

Documentation extends to patient education and understanding, with nurses recording the information provided to patients and their families, including instructions for care, explanations of procedures, and any educational materials. This aspect ensures that patient education is integrated into the care plan and that there is a record of the patient's understanding and consent for various aspects of that care.

Changes in Patient Condition

Documenting changes in a patient's condition, whether improvements or deteriorations, is a fundamental

responsibility of nursing practice. Changes in patient condition can range from subtle shifts in vital signs to more significant clinical changes, such as adverse reactions to medications, improvement or worsening of symptoms, or positive responses to treatment interventions.

There are two main reasons why documenting changes is an essential part of patient care:

1. It guides clinical decisions by helping the care team recognize patterns or trends in a patient's condition, which is crucial for early intervention if adverse developments arise.
2. It ensures effective communication within the healthcare team, keeping all members aware of the patient's current status and recent changes, even those without direct contact with the patient. Lastly, it provides a clear and objective record that can be referenced in future care planning and evaluation.

In the Clinical Judgment Measurement Model (CJMM), documenting changes in a patient's condition aligns with the steps of Recognizing Cues and Analyzing Cues. By systematically recording changes, nurses gather crucial information (cues), which is then analyzed to inform clinical judgments and interventions, ensuring that patient care is responsive, timely, and based on the most current and accurate information available. (Next Generation NCLEX, n.d.).

LIFE-STAGE CONTEXT

Changes in Patient Condition across Different Age Groups

Nurses must consider the unique physiological and developmental characteristics associated with different life stages when documenting changes in a patient's condition. This attention to age-specific details is crucial in accurately interpreting and responding to changes in patient condition.

- Neonates and infants: In neonatal and infant patients, subtle changes can be significant. For example, a slight change in feeding patterns, activity level, or cry pitch may indicate discomfort or illness, as infants cannot verbally communicate their symptoms. Nurses should closely monitor and document parameters such as feeding tolerance, stool and urine output, and skin color, as these can be early indicators of changes in condition.
- Children: With pediatric patients, especially those with limited communication skills, changes in behavior or play can be important cues. A child who is usually active but becomes withdrawn or shows changes in eating and sleeping patterns may be experiencing discomfort or illness. Documenting these behavioral changes alongside physical symptoms is vital in assessing the child's overall condition.
- Adolescents: Adolescents may be more capable of expressing their symptoms, but they can also be reluctant to share concerns about their health. Nurses should document both the verbalized symptoms and observed behaviors, such as changes in social interaction or school performance, which can be indicators of underlying health issues.
- Adults and older adults**:** In adults, especially older patients, nurses should be vigilant about documenting even minor changes in condition, as they can be early signs of more serious health concerns. For example, slight confusion or memory lapses in an older adult patient might be the first signs of a urinary tract infection or other systemic issue. In these age groups, it's also important to document baseline cognitive function to recognize any deviations.

Across all life stages, effective documentation of changes in a patient's condition includes noting physical symptoms and observing and recording behavioral and cognitive changes. This comprehensive approach ensures that care is tailored to the specific needs of each age group, enhancing patient safety and care quality.

Documenting Risk Management

Risk management in nursing involves identifying, assessing, and taking steps to minimize risks that might harm patients or healthcare providers. Documentation provides a detailed record of potential risks and the measures taken to manage them. Effective documentation in risk management promotes patient safety, enhances the quality of care, and serves as a legal record. It also enables healthcare providers to track the effectiveness of interventions designed to mitigate these risks.

Potential Safety Concerns

Nurses are often the first to identify situations that may pose a risk to patient safety, such as environmental hazards, the potential for medication errors, or risks associated with patient mobility. For example, a nurse might document observations of a cluttered room that could increase the risk of falls for an older adult patient. This documentation is vital for initiating immediate actions to remove the hazard and informing the broader healthcare team about the risk. Another example is the documentation of potential allergic reactions to medications. If a nurse observes signs of an allergy, such as a rash or difficulty breathing, after medication administration, this information should be documented immediately. It is crucial for healthcare providers to make informed decisions about medication adjustments and to monitor for similar risks in the future.

Development of New Problems

Nurses also document the development of new problems or complications in patient care, which is essential for effective risk management. For instance, if a patient develops bedsores due to limited mobility, this must be documented as a new problem. The nurse would record the location, size, and appearance of the bedsores, along with any interventions applied, such as repositioning the patient or wound care. This documentation facilitates appropriate ongoing care and serves as a record for evaluating the effectiveness of the interventions and adjusting care plans as needed.

REAL RN STORIES

Proactive Documentation in Risk Management

Nurse: Jasmine, RN, BSN
Clinical setting: Postsurgical unit
Years in practice: 6
Facility location: Billings, Montana

During my years as a nurse on the postsurgical unit, I've seen firsthand how proactive documentation can significantly impact patient outcomes, especially in risk management. One experience in particular stands out to me, emphasizing the importance of detailed observation and timely documentation in identifying and managing risks.

I was caring for Miss McGregor, who had undergone abdominal surgery. During my routine postoperative checks, I noticed a slight redness and swelling around her incision site. Although these postsurgical symptoms can be normal, my intuition told me to monitor this closely. I documented my observations, including the size and appearance of the redness, and informed the surgical team.

Over the next few hours, I continued to document any changes I observed in Miss McGregor's condition, noting an increase in swelling and the onset of a mild fever. Because of this detailed and timely documentation, the surgical team decided to reassess her wound sooner than the scheduled time. It turned out Miss McGregor was developing an infection, and due to the early detection, we were able to initiate antibiotic therapy promptly.

This incident reinforced to me the critical role of documentation in managing patient risks. By accurately recording even the subtle changes in Miss McGregor's condition, I was able to provide the surgical team with the necessary information to make a timely and informed decision. Our prompt action prevented further complications and expedited Miss McGregor's recovery. It was a clear reminder of how our vigilance and records as nurses can make a real difference in patient outcomes.

Documenting Evaluation of Intervention

Evaluating the results of nursing interventions is a critical component of the nursing process, allowing healthcare professionals to assess the effectiveness of their actions and make necessary adjustments to patient care. Documentation plays a crucial role in this evaluation phase, as it provides a detailed record of the interventions implemented and their outcomes. Through meticulous documentation, nurses can track the progress of a patient's condition, analyze the effectiveness of treatments, and provide a basis for future care decisions. This process is integral to ensuring that patient care is evidence-based, patient-centered, and continuously evolving to meet the individual needs of each patient.

In the context of the CJMM, documenting the evaluation of interventions aligns with the steps of Generate Solutions, Take Action, and Evaluate Outcomes. Accurate and comprehensive documentation allows for an informed evaluation of the care provided and supports the ongoing process of clinical judgment and decision-making (Next Generation NCLEX, n.d.).

Outcome Achievement

When documenting the evaluation of interventions, one key aspect is to record whether the intervention has achieved its intended outcome. For example, if a patient is experiencing postsurgical pain, a nurse might administer pain medication as an intervention. Documenting the patient's pain level before and after medication administration provides clear evidence of whether the intervention was effective. If the pain level decreases significantly, it indicates the success of the intervention. Conversely, if there is no change or an increase in pain, it may signal the need for reevaluation and potential changes in the pain management plan. Similarly, in cases of chronic conditions such as hypertension, nurses document the patient's blood pressure readings before and after implementing lifestyle changes or medication adjustments. This ongoing documentation helps assess the long-term effectiveness of the intervention and guides future care planning.

Document Education Provided

Another essential aspect of documentation in the evaluation phase is recording the education provided to patients and their families. Educating patients about their condition, treatment plans, and self-care is one of the most important aspects of nursing care. Documenting educational interventions, including the topics covered, the materials used, and the patient's response, is necessary for several reasons.

First, it ensures continuity of care. If a patient is transferred to another unit or readmitted later, the next care team can see what education the patient has already received and build upon it. Second, it serves as evidence of patient teaching, which is often required for compliance and accreditation purposes. For example, if the nurse teaches a patient with diabetes how to manage their blood sugar levels through diet and medication, documenting the education session records what was taught and demonstrates the patient's understanding and engagement with their care plan.

Accurate Description of Care

Accurate documentation of care is essential in nursing, serving both medical and legal purposes. It ensures continuity of care by providing subsequent caregivers with a comprehensive understanding of a patient's history, current condition, and the care they have received. Accurately describing care also protects nurses and healthcare facilities legally, as medical records can serve as evidence in cases of disputes or litigation. The legal role of these documents emphasizes the necessity for precise, clear, and complete documentation of all elements of patient care.

It can be helpful to see how the components of accurate documentation would look in the context of a specific patient. The following is an example to consider that will be revisited throughout the chapter to help demonstrate key concepts: Mr. Ahmed is a 70-year-old patient admitted to the hospital with congestive heart failure (CHF). His condition requires careful monitoring, medication management, and patient education regarding lifestyle changes to manage his CHF effectively (Cleveland Clinic, 2023).

What You Did

The nurse must accurately document actions taken as part of patient care to establish a clear record of all interventions, treatments, and procedures performed. This information enables the patient's healthcare providers to track the progress of care, evaluate the effectiveness of interventions, and identify deviations from the planned course of treatment. Accurate documentation also supports accountability by clearly documenting the responsibilities of each healthcare provider involved in the patient's care.

In Mr. Ahmed's case, documenting "what you did" would require the nurse to record all actions taken as part of providing his care. For example, if the nurse administered a diuretic to manage his fluid retention, the documentation should include the name of the medication, dosage, route of administration, and time given. See

Table 14.8 for an example of how what you do may be documented.

Nursing note: 0800
- Administered furosemide 40 mg orally

TABLE 14.8 Documentation of Treatment, Part 1

What You Observed

Documenting "what you observed" focuses on the nurse's assessments and observations about Mr. Ahmed's condition. This includes changes in his symptoms, responses to treatments, and any side effects observed. See Table 14.9 for an example of how what you observe may be documented.

Nursing note: 0800
- Administered furosemide 40 mg orally

Nursing note: 1000
- Mr. Ahmed reports a decrease in shortness of breath. Slight edema reduction noted in bilateral lower extremities.

TABLE 14.9 Documentation of Treatment, Part 2

Chart in Real Time

Charting in real time is necessary for maintaining accurate and up-to-date patient records. In Mr. Ahmed's case, this would mean documenting assessments, interventions, and observations as soon as they occur. See Table 14.10 for an example of how the nurse may chart medication administration in real time.

Nursing note: 0800
- Administered furosemide 40 mg orally. Patient educated about potential side effects, such as dizziness, and the importance of monitoring output. Patient verbalized understanding of education.

TABLE 14.10 Documentation of Treatment, Part 3

Chart Precautions and Preventative Measures

Documenting precautions and preventative measures is key in managing Mr. Ahmed's CHF. This could involve noting the implementation of low-salt diet instructions, fluid restriction guidelines, and daily weight monitoring to track fluid status. See Table 14.11 for an example of how the nurse may chart precautions and preventative measures.

Nursing note: 0800
Administered furosemide 40 mg orally. Patient educated about potential side effects, such as dizziness, and the importance of monitoring output. Provided written instructions for a low-sodium diet. Advised to limit fluid intake to 1.5 liters per day. Set up daily morning weight monitoring to track fluid changes. Patient verbalized understanding of education.

TABLE 14.11 Documentation of Treatment, Part 4

In each documentation aspect within Mr. Ahmed's chart, the focus is on providing a detailed and accurate account of the care provided to the patient, ensuring that all healthcare team members are informed and aligned in their approach to managing his CHF. This comprehensive documentation approach is integral to delivering high-quality, patient-centered care.

Appropriate Terminology

In nursing documentation, using appropriate terminology is essential for clear and effective communication among healthcare providers. Appropriate terminology ensures that documented information is accurately conveyed and universally understood in the healthcare setting. This includes documenting with medically accepted terms, approved abbreviations, and providing complete descriptions. It also requires a focus on documenting care provided, rather than conflicts or interpersonal issues, to maintain professionalism and a patient-centered approach.

Use Approved Abbreviations

Using approved abbreviations in medical documentation is necessary, but the nurse must only use widely recognized and accepted abbreviations within the healthcare community. For example, “BID” is a commonly accepted abbreviation meaning “twice daily.” The term comes from the Latin phrase *bis in die*. A sample documentation might read, "Administered 5 mg of metoprolol PO BID," which is clear and concise (Mennonite College of Nursing, n.d.). Using lesser-known or outdated abbreviations can cause misunderstandings and lead to errors in patient care. Nurses should always refer to their facility’s approved abbreviation list and avoid using nonstandard abbreviations to prevent confusion or mistakes.

LINK TO LEARNING

This comprehensive guide to nursing abbreviations and acronyms (https://openstax.org/r/77NursingAbbrev) is maintained by the Mennonite College of Nursing.

Chart with Complete Descriptions

Although abbreviations are useful for efficiency, it’s equally important to provide complete descriptions when necessary, especially for complex or unusual situations. For instance, instead of simply documenting “wound care performed,” a more descriptive entry would be, “Cleaned wound with saline, applied new dressing, no signs of infection noted, patient reports pain level 2/10.” This level of detail ensures that anyone who reads the chart understands the care provided and the patient’s current condition. This level of detail is especially helpful when a patient’s condition is changing, or there is something out of the ordinary about their care—for example, an uncommon treatment.

Chart Care, Not Conflicts

When documenting in patient charts, the focus should always be on the care provided and the patient’s response to that care, not conflicts or interpersonal issues that may arise. If there’s a disagreement with a patient about a treatment plan, the nurse’s documentation should include the facts of the situation rather than the disagreement. The nurse should stick to objective information and avoid opinions. This approach maintains professionalism and ensures that a patient’s chart is a factual record of care and responses, not a subjective log of disagreements or conflicts.

PATIENT CONVERSATIONS

Handling Argumentative Patients

After reading this conversation between a nurse and a patient who has been prescribed a new medication, decide what the nurse should document and what does not need to be documented.

Nurse: Mr. Lee, this medication is important for managing your condition. It can significantly reduce your symptoms.

Patient: But I read about all these side effects online and I’m really worried about them.

Nurse: It’s good to be informed. However, the benefits of this medication are significant for your long-term health—

Patient: (*interrupting*): But what about the risks? I heard it can even cause liver problems.

Nurse: Mr. Lee, please let me finish explaining. These benefits include improved blood pressure and reduced risk of heart-related issues. Yes, there are potential side effects, like with any medication, but they are relatively rare. We monitor your health closely to mitigate these risks.

Patient: I just don’t want to risk more health problems. Can’t we try something else?

Nurse: I understand your concerns. There are alternatives, but they may not be as effective for your specific condition. Let’s go through them together and discuss with your provider. We want to ensure you’re comfortable and well-informed about your treatment.

Patient: Okay, I'm willing to listen, but I'm still not sure about this.

Nurse: That's perfectly fine, Mr. Lee. Let's explore all your options and find a solution that works best for you. Your comfort and health are our top priorities.

Scenario follow-up: The nurse should document this conversation by focusing on the care aspects: for example, "Discussed treatment options with Mr. Lee, who expressed concerns about potential side effects of the prescribed medication. Reviewed benefits and risks. Patient hesitant about starting medication due to side effect concerns. Arranged for consultation with the provider to discuss alternative treatments and ensure patient comfort with the plan." This style of documentation maintains professionalism, focusing on the care and treatment decisions rather than the tension in the conversation.

Source-Oriented Documentation

A traditional method of recording healthcare information is known as **source-oriented documentation** (Table 14.12). Each healthcare professional, such as nurses, providers, therapists, and others, documents their findings and interventions in separate sections or forms. This approach makes it easy to identify the source of each piece of data. The advantage of source-oriented documentation is the clear delineation of information by discipline, making it faster and more efficient to locate specific data. It provides a detailed and chronological account of the patient's healthcare journey from various professional perspectives. However, a drawback is that it can lead to fragmented information, as separate documentation by different providers can make it challenging to get a comprehensive view of the patient's overall status. Additionally, redundancy and repetition may occur when multiple providers document similar information (Almasi et al., 2019).

Documentation Type	Purpose	Advantages	Disadvantages	Tips for Effective Use
An **admission sheet**	Initial record upon admission; includes medical history, medications, allergies, reason for admission	Baseline for patient condition; crucial reference throughout hospital stay	Can become outdated if not regularly updated	Ensure accuracy and completeness; note changes promptly
A **flow sheet**	Brief form with essential patient information	Efficient tracking of specific data over time; easy-to-spot trends	Can miss important details if not concise	Focus on key information; update frequently
A **narrative note**	Detailed account of patient's condition, care, and response in paragraph form	Provides context and detailed explanations; allows for more in-depth documentation	Time-consuming to write and read; important information can be buried	Be clear, concise, and focus on significant events; organize chronologically; use clear language and avoid medical jargon

TABLE 14.12 **Types of Source-Oriented Documentation**

Problem-Oriented Documentation

An organized approach to recording patient care that focuses on the individual problems a patient may have is called **problem-oriented documentation**. It differs from source-oriented documentation because it organizes information around patient issues rather than the source of information. This method enhances the coherence and focus of patient records, allowing healthcare providers to track the progress of each problem, the interventions implemented, and the outcomes (Altman et al., 2023). Problem-oriented documentation typically leads to better communication among healthcare team members because it provides a clear, concise overview of patient issues,

interventions, and outcomes. However, it also requires a thorough understanding of patient problems and consistent documentation practices to maintain effectiveness.

Problem-oriented documentation also comes in different forms, including the SOAP and PIE methods, **focused charting**, charting by exception, and the case management model.

LINK TO LEARNING

In this video by Mometrix Nursing, you can learn some tips for creating SOAP notes (https://openstax.org/r/77SOAPnotes).

SOAP Method

The **SOAP method** is a widely used form of problem-oriented documentation, structured into four components: Subjective, Objective, Assessment, and Plan (Sindhu, 2020).

- Subjective: This section records the patient's perspective, including symptoms and feelings.
- Objective: This section documents objective data, such as vital signs, physical exam findings, and lab results.
- Assessment: This section documents the nurse's clinical judgment about the patient's condition based on subjective and objective information.
- Plan: This section outlines the plan of care or interventions to address the patient's problem.

The SOAP method is beneficial for its structured and comprehensive approach to documenting patient care; however, it requires careful attention to ensure all aspects of the patient's condition are accurately captured. An example SOAP note could look like Table 14.13.

Subjective	Patient reports worsening SOB and fatigue over the last forty-eight hours.
Objective	Vital signs: BP 150/95, HR 110, RR 28, O_2 sat 89 percent on room air. Auscultation reveals bilateral crackles in lung bases.
Assessment	CHF exacerbation
Plan	Notify provider, stat chest x-ray, supplement oxygen via nasal cannula

TABLE 14.13 SOAP Method

Sometimes, the SOAP method will be expanded to the SOAPIER method. The SOAPIER method extends the traditional SOAP format to enhance documentation by integrating ongoing evaluation and revision, ensuring a dynamic approach to patient care management.

- Intervention: Documents specific actions taken as part of the plan, including procedures performed, medications administered, and therapeutic interventions.
- Evaluation: Describes the patient's response to interventions, assessing their effectiveness and any changes in the patient's condition.
- Revision: Documents any adjustments made to the plan based on evaluation findings or changes in the patient's status.

An example SOAPIER note could look like Table 14.14.

Subjective	Patient reports worsening SOB and fatigue over the last forty-eight hours.
Objective	Vital signs: BP 150/95, HR 110, RR 28, O_2 sat 89 percent on room air. Auscultation reveals bilateral crackles in lung bases.
Assessment	CHF exacerbation

TABLE 14.14 SOAPIER Note

Plan	Notify provider, stat chest x-ray, supplement oxygen via nasal cannula
Intervention	Administered supplemental oxygen at 2 L/min via nasal cannula.
Evaluation	After one hour, patient's O_2 saturation improved to 94 percent, with decreased respiratory distress noted.
Revision	Revised plan to continue oxygen therapy at 2 L/min and monitor closely for further improvement.

TABLE 14.14 SOAPIER Note

PIE Method

The **PIE method** involves another acronym, with each letter representing a component of the documentation (Almasi et al., 2019):

- Problem: The nurse identifies the patient's problem.
- Intervention: The nurse documents the actions taken to address the problem.
- Evaluation: The nurse describes the patient's response to the intervention.

This method ensures a direct link between identified problems and the care provided. Its focus on ongoing evaluation makes it helpful when adapting the care plan, but it can be time-consuming due to the level of detail required. An example of a PIE method note could look like Table 14.15.

Problem	Uncontrolled hypertension
Intervention	Education on the importance of medication adherence and compliance with lifestyle change recommendations.
Evaluation	After two weeks of intervention, patient BP still elevated at 160/98. Medication adjustment may be necessary.

TABLE 14.15 PIE Method

Focused Charting

Focused charting involves documenting care and observations based on specific patient concerns or behaviors. A note typically includes four parts, which form the acronym F-DAR (Magbanua, 2024).

- Focus: Briefly note the main purpose of the note or patient concern.
- Data: Information about the patient's condition or behavior.
- Action: The interventions or care provided.
- Response: The patient's response to the action(s) taken.

Focused charting is beneficial for its patient-centered approach and flexibility, allowing nurses to adapt the documentation to the specific needs and issues of each patient. A note using the F-DAR format could look like Table 14.16.

Focus	Patient reports pain at incision.
Data	Patient rates pain at 8/10. Incision site is red, warm, and there is a small amount of purulent drainage.
Action	Wound cleaned and dressed, antibiotics administered per provider order.
Response	Reassessed one hour later, patient reports pain 4/10.

TABLE 14.16 Focused Charting

Charting by Exception

Charting by exception is based on the assumption that unless a deviation from standard or expected outcomes is observed, a patient's care is following the established plan (Roberts, 2020). Because only significant findings or exceptions to norms are documented, this method saves time and reduces the volume of paperwork. However, this approach may overlook important details that do not qualify as exceptions but are still relevant to patient care.

Case Management Model

The **case management model** involves comprehensive documentation that coordinates and tracks patient care across different stages and settings. This model focuses on continuity of care, especially for patients with complex or long-term health needs. It encompasses a broad overview of patient care, from admission to discharge and beyond. The challenge with this model is maintaining a high level of detail over extended periods and across various healthcare settings (Registered Nursing, 2023).

Summary

14.1 The Nurse's Role in Implementation

The implementation phase is crucial in the nursing process, involving the active execution of planned interventions while adapting to the patient's evolving needs. Nurses apply their clinical knowledge to perform various tasks, from administering medications to assisting with rehabilitation exercises tailored to facilitate the patient's recovery and well-being.

Continuous monitoring and assessment are key because they allow nurses to gauge the effectiveness of interventions and make necessary adjustments, ensuring care remains dynamic, responsive, and patient-centered. Nurses prioritize patient needs, allocate resources efficiently, and ensure smooth transitions between care settings, particularly during discharge. From beginning to end, the implementation phase calls on the nurse's critical-thinking and clinical judgment skills, psychomotor abilities for performing interventions safely and effectively, interpersonal communication skills for providing patient support, and cognitive skills for decision-making and flexibility.

14.2 Types of Interventions

The implementation phase of care highlights the complex and essential nature of nursing and involves applying various interventions tailored to each patient's specific needs. Nurses utilize different interventions to address actual, potential, and collaborative problems based on nursing diagnoses. Interventions can be direct (e.g., medication administration) or indirect (e.g., care coordination). The interventions can also be dependent (provider-ordered), independent (nurse-initiated), and interdependent (collaborative). The type of intervention is chosen based on a patient's situation and the nursing diagnosis. Prioritization of interventions is also crucial. Nurses prioritize interventions using frameworks such as the ABC framework and Maslow's hierarchy to address urgent needs efficiently, emphasizing patient safety. Effective delegation and collaboration within interdisciplinary teams are also essential, combining clinical expertise with a holistic understanding of patient needs and leveraging each member's expertise for safe, effective care—all of which facilitate a patient's recovery and promote well-being.

14.3 The Nurse's Role in Evaluation

During the evaluation phase, the nurse must continue to call on the skills for documentation that have helped them to record patient data at other points in time delivering care. Effective documentation in nursing is crucial for patient care, serving as a key communication tool, legal safeguard, and continuity of care facilitator. All documentation must be accurate, comprehensive, and timely to reflect the patient's condition and the care provided, as well as to support the evaluation of intervention effectiveness. It must use appropriate terminology and abbreviations to capture changes in the patient's condition, including improvements and declines, to guide clinical decisions and care adjustments.

Nursing documentation is an essential tool for risk management, as it provides a system for measuring outcomes and effectiveness. It is during the evaluation stage when the nurse may use documentation to assess "what went wrong" and look for opportunities to "do better." This may include taking steps to reduce errors in documentation or making it more readily available to different members of the interdisciplinary care team to promote continuity of care. All methods help the nurse organize and track patient care, interventions, and outcomes effectively and ensure clear, professional, and comprehensive records.

14.4 Evaluation Methods

QA programs systematically evaluate healthcare services to ensure they align with standards and focus on structure (e.g., facilities, staff), processes (e.g., procedures, interactions), and outcomes (e.g., recovery rates, complications). QI initiatives aim to enhance patient care and outcomes by using collaborative, data-driven strategies to identify and address inefficiencies, with a strong emphasis on meeting patient needs and preferences and utilizing data analytics for informed decision-making.

Nursing-specific patient safety and quality initiatives are integral to the evaluation phase of the nursing process. These initiatives aim to minimize risks and errors in nursing care, ultimately enhancing patient safety. They achieve this by monitoring nursing-sensitive quality indicators, such as fall rates, pressure ulcers, and hospital-acquired infections. Patient satisfaction programs, such as HCAHPS, also help gather feedback to guide improvements.

Through tracking these indicators and analyzing the collected data, healthcare organizations can pinpoint areas where nursing care can be improved and implement targeted interventions. Feedback from nurses and other healthcare professionals is also incorporated to continuously refine and improve patient safety practices. A prominent example of such an initiative is the National Database of Nursing Quality Indicators (NDNQI), which collects data on nursing-sensitive indicators from hospitals nationwide, providing benchmarks for comparison and highlighting opportunities for improvement. By integrating these initiatives into the evaluation process, healthcare organizations can foster a culture of continuous improvement, ensuring that nursing care is consistently safe, effective, and patient-centered.

14.5 Guidelines for Effective Documentation

Effective documentation in nursing is a critical aspect of patient care, playing a key role in communication, legal protection, and continuity of care. Nurses must be able to identify the data to be collected during each phase of the nursing process and document a wide range of data, including patient assessments, medication administration, treatment responses, and patient education. To ensure it is a useful tool in risk management, the documentation must be correct, comprehensive, and timely to ensure that it completely and accurately reflects the patient's condition and the care provided. It serves not only as a record of care but also as a tool for evaluating the effectiveness of interventions and guiding future care decisions.

When documenting data collected during the implementation phase, it's crucial to note changes in a patient's condition, which may include improvements and deteriorations. These developments are essential for guiding clinical decisions and ensuring appropriate care adjustments. Accurate documentation of changes is vital for communication within the healthcare team and provides a clear and objective record for future care planning and evaluation.

Risk management is a key area where documentation plays a vital role. Nurses document potential safety concerns and the development of new problems as part of their risk management efforts. This includes noting environmental hazards, potential allergic reactions, and the onset of new symptoms or complications. Effective documentation in risk management helps in early intervention and prevention of further complications, ensuring patient safety.

It is important to use appropriate terminology in documentation, including approved abbreviations and complete descriptions. Nurses are encouraged to focus on documenting the care provided, rather than conflicts or interpersonal issues, to maintain professionalism and ensure patient-centered care.

There are several approaches to documentation, including source-oriented and problem-oriented. Source-oriented documentation segregates information based on the healthcare professional providing it, whereas problem-oriented documentation organizes records around individual patient issues. Problem-oriented methods include SOAP (Subjective, Objective, Assessment, Plan) and PIE (Problem, Intervention, Evaluation), as well as focused charting, charting by exception, and the case management model. These methods support comprehensive and coherent patient records, allowing healthcare providers to track the progress of each problem, the interventions implemented, and their outcomes.

Key Terms

admission sheet the initial record filled out when a patient is admitted to a healthcare facility
case management model a comprehensive form of documentation that involves coordinating and tracking patient care across different stages and settings
charting by exception the practice of documenting only significant findings or exceptions to norms
clinical knowledge a nurse's understanding of health and disease processes, treatments, and interventions
cognitive skills the mental processes involved in understanding patient needs, planning care, problem-solving, and decision-making
cultural sensitivity awareness and respect of a patient's cultural background and beliefs
dependent intervention an action that a nurse carries out under the orders or direction of a healthcare provider, such as a physician
direct care interventions that involve personal contact or interaction with patients
Donabedian model a framework used in healthcare quality assessment and improvement that organizes the elements necessary for evaluating healthcare quality into three main categories: structure, process, and

outcomes

evaluation the systematic determination of a patient's progress toward the achievement of outcomes and goals set during the care-planning process

flow sheet a brief form that contains the most important information about a patient; it travels in their chart

focused charting the practice of documenting care and observations based on specific patient concerns or behaviors

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) a standardized survey instrument and data collection methodology for measuring patients' perspectives on hospital care throughout the United States

implementation the step of the nursing process when the plan of care for a patient is put into action

independent intervention an action that a nurse initiates and carries out based on their own clinical judgment, without instructions from others

indirect care interventions that are performed away from patients but are vital to their overall care

interdependent intervention an action that requires the nurse to coordinate with other providers as part of a care team

interpersonal skills the abilities that enable effective communication and interaction with patients, their families, and other healthcare professionals

intervention an action intended to stop a harmful outcome or promote a healthful one

narrative notes documentation written in paragraph form to better "tell the story" of a patient's health

National Database of Nursing Quality Indicators (NDNQI) a comprehensive repository of data relevant to nursing-sensitive quality indicators in the United States

nursing-sensitive quality indicators specific metrics that are influenced by nursing behaviors and that reflect the quality of nursing care

outcome evaluation an assessment of the results of health care on patients and populations

PIE method a form of problem-oriented documentation consisting of Problem, Intervention, and Evaluation data

problem-oriented documentation a method of recording patient care that focuses on the patient's specific health problems rather than the source of data

process evaluation an assessment of how a healthcare system or provider delivers care

psychomotor skills the practical, hands-on abilities required to effectively implement interventions

quality assurance (QA) oversight to ensure that current quality standards are being met across a department or agency and that staff are receiving the education and infrastructure support to maintain that quality

quality health care the provision of health services that improve the chances of preferred outcomes, decrease the chances for error, and are consistent with current evidence and knowledge

quality improvement (QI) a framework to improve patient care and outcomes systematically

SOAP method a form of problem-oriented documentation consisting of Subjective, Objective, Assessment, and Plan data

source-oriented documentation a traditional method of recording healthcare information, in which data is organized based on the person providing it

structure evaluation an assessment of the characteristics of a healthcare system or provider

Assessments

Review Questions

1. What is the emphasis for nurses during the implementation phase of the nursing process?

a. carrying out the established care plan
b. developing a new care plan for the patient
c. systematically determining the effectiveness of the care plan
d. focusing on the patient's emotional well-being

2. What example demonstrates ongoing assessment during the implementation phase of the nursing process?

a. planning a patient's future healthcare appointments
b. documenting a patient's health history during their initial visit
c. evaluating the effectiveness of hospital-wide policies on a patient's care

d. monitoring a patient's pain levels and response to medication after surgery

3. What skill is essential during the implementation phase of the nursing process?
   a. expertise in insurance policies
   b. proficiency in critical thinking
   c. experience managing a care team
   d. ability to conduct diagnostic tests

4. What two categories of patient care are included in the implementation phase of the nursing process?
   a. direct and indirect
   b. actual and potential
   c. dependent and independent
   d. physiological and psychological

5. What type of intervention requires a provider's order before a nurse can perform it?
   a. collaborative
   b. dependent
   c. independent
   d. interdependent

6. A nursing intervention aimed at preventing bedsores in a bedridden patient is focusing on what type of problem?
   a. actual
   b. collaborative
   c. independent
   d. potential

7. According to the ABC framework for prioritizing nursing interventions, what type of problem should a nurse address first?
   a. airway
   b. breathing
   c. circulation
   d. pain

8. When delegating nursing interventions, what factor is important to consider?
   a. time of day
   b. age of the patient
   c. competencies of the person receiving the delegation
   d. educational background of the person delegating the task

9. What is the primary purpose of the evaluation phase in the nursing process?
   a. to diagnose the patient's condition
   b. to determine the effectiveness of care
   c. to introduce new nursing interventions
   d. to plan the initial nursing interventions

10. For what reason does the nurse need to think about continuity of care during the evaluation phase?
   a. It is when patients are initially assessed.
   b. It is when patients are prepped for surgery.
   c. It is when patients learn about their condition.
   d. It is when patients transition out of the facility.

11. How should nurses evaluate the plan of care?

a. by delegating tasks to appropriate staff
b. by quizzing the patient about their condition
c. by determining whether goals have been met
d. by ending interventions that are no longer needed

12. A patient has been taking medication to alleviate symptoms, and the care team determines the patient no longer has symptoms. What conclusion should the care team draw about this intervention?
a. Delegate it.
b. Terminate it.
c. Continue administering it.
d. Revise it to be more effective.

13. In quality assurance programs, what do structure evaluations primarily assess?
a. how a healthcare system or provider delivers care
b. the results of health care on patients and populations
c. the characteristics of a healthcare system or provider
d. whether patients are satisfied or dissatisfied with care

14. What would be the most likely focus of a quality improvement initiative by a healthcare provider?
a. reducing costs
b. using data to support decisions
c. preparing nurses to service more patients
d. standardizing processes for all patient populations

15. What is the primary purpose of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)?
a. to document patient perspectives on hospital care
b. to measure the financial performance of hospitals
c. to determine the effectiveness of quality initiatives
d. to evaluate the technical skills of healthcare providers

16. The National Database of Nursing Quality Indicators (NDNQI) is instrumental for what process?
a. providing a platform for nursing education and research
b. assisting in the regulatory compliance of healthcare facilities
c. facilitating the monitoring and improvement of nursing practices
d. guiding the financial management decisions in nursing departments

17. The nurse is caring for a patient and preparing to document during the implementation phase. What essential information about the patient's care will the nurse include at this phase?
a. only the patient's initial diagnosis
b. general descriptions of the patient's mood
c. detailed and accurate records of care provided
d. only the medications administered to the patient

18. The nurse is doing a quality review of documentation to ensure entries are comprehensive and legally compliant. What piece of documentation would the nurse identify as fulfilling this goal?
a. "Patient seems to be feeling better today."
b. "Administered medication, patient did not comment."
c. "Patient complained about pain but I'm not sure what to do about it."
d. "Patient reports a decrease in pain from 7 to 4 on the pain scale after medication."

19. What is a rule for using abbreviations in nursing documentation?
a. Use abbreviations as often as possible.

b. Use only abbreviations that are approved.
c. Use only abbreviations for medical jargon.
d. Use abbreviations that the patient recognizes.

20. The nurse is advocating for the hospital where they work to use source-oriented documentation. What benefit could they highlight?
a. It reduces the need for nurses to document routine care.
b. It highlights specific problems, interventions, and outcomes.
c. It allows for easier identification of information by discipline.
d. It consolidates all patient information into a single, unified document.

21. What is an example of problem-oriented documentation?
a. a narrative note by a nurse
b. a record of a patient's vital signs
c. a flow sheet of a patient's key data
d. a PIE note assessing a specific intervention

Check Your Understanding Questions

1. Explain the importance of establishing priorities during the implementation phase when caring for a patient with multiple chronic conditions.

2. Explain how indirect care differs from direct care in the implementation phase of the nursing process, and provide an example of each.

3. Compare and contrast independent and interdependent interventions. Give an example of each.

4. In the context of Maslow's hierarchy of needs, explain how a nurse would prioritize interventions for a patient experiencing severe back pain and expressing feelings of loneliness.

5. How does the evaluation phase provide a system for nurses to define, explain, and measure patient care effectively?

6. Explain the role of the evaluation phase in promoting continuity of care, particularly when a patient is transitioning from hospital to home care.

7. What methods do nurses use to evaluate a plan of care, and how do these methods contribute to patient outcomes?

8. Describe the process the nurse uses to analyze conclusions during the evaluation phase and how it affects the decision-making process.

9. Explain how process evaluations in quality assurance programs contribute to the improvement of patient care.

10. How can patient satisfaction programs such as HCAHPS lead to changes in hospital policies or practices?

11. How can nursing-sensitive quality indicators influence nursing practice and patient outcomes?

12. Identify three DOs and three DON'Ts of accurate and appropriate documentation in nursing.

13. What does it mean to "chart care, not conflict"? Why is this important?

14. Provide an example of problem-oriented documentation and explain how it differs from source-oriented documentation.

Reflection Questions

1. Reflect on how a nurse can effectively utilize both cognitive and psychomotor skills during the implementation phase for a complex patient case, such as managing care for a patient with severe burn injuries.

2. Consider a scenario in a busy healthcare setting in which prioritizing nursing interventions and effectively delegating tasks is critical. Discuss how a nurse would prioritize interventions for multiple patients and delegate tasks, considering the scope of practice and the involvement of an interdisciplinary team.
3. Imagine you are a nurse evaluating a patient who has undergone a major surgery. Reflect on how the evaluation phase enables you to determine the patient's progress; provides a system to define, explain, and measure patient care; and promotes continuity of care. Consider the implications of your findings for future care planning and family involvement.
4. Reflect on how quality assurance programs—including structure, process, and outcome evaluations—may be incorporated into the evaluation phase of nursing practice. Consider specific examples to illustrate how these evaluations contribute to the continuous improvement of patient safety and quality of care.
5. Consider the role of quality improvement programs in guiding patient care. Give a specific example and reflect on how these programs can be effectively incorporated into the evaluation phase of nursing to ensure ongoing improvement in patient outcomes and care processes.
6. Reflect on the influence of patient satisfaction programs, such as HCAHPS, on the quality of care. Provide a specific example of how insights from these programs can be incorporated into the evaluation phase to enhance nursing practices and patient outcomes. How can patient feedback drive changes in nursing care?
7. A nurse is in a hurry. To speed up her documentation of a patient, she invents several abbreviations, assuming that other team members will be able to figure out what she means from the context. Why is this a bad practice? Explain what can go wrong if nurses use unapproved abbreviations in their documentation.
8. Describe a situation in which it is likely better to use source-oriented documentation and a situation in which it is likely better to use problem-oriented documentation. Explain why each approach is better for the situation you chose.

What Should the Nurse Do?

Mrs. Lee, a 55-year-old female with newly diagnosed type 2 diabetes, has been admitted for the management of her condition. Her care plan includes medication management, dietary changes, and education on monitoring her blood sugar levels. Mrs. Lee is also overweight and has expressed feelings of anxiety about managing her new diagnosis.

1. What priorities should the nurse establish for Mrs. Lee's care?
2. Discuss how the nurse can use cognitive skills to manage Mrs. Lee's care, especially when educating her about type 2 diabetes and its management.
3. How should the nurse ensure continuity of care for Mrs. Lee as she transitions from hospital to home management of her newly diagnosed type 2 diabetes?

Mrs. Thompson, a 68-year-old female with a history of chronic obstructive pulmonary disease (COPD), is admitted to a postsurgical unit following hip-replacement surgery. Her care involves preventing postoperative complications and beginning early rehabilitation for her hip, as well as managing her COPD. The nursing team, led by Nurse Saad, is tasked with her comprehensive care.

4. Identify one direct and one indirect care intervention that Nurse Saad and his team should provide for Mrs. Thompson.
5. Differentiate between dependent, independent, and interdependent interventions in Mrs. Thompson's care plan. Give an example of each.
6. Discuss interventions Nurse Saad might implement for the actual, potential, and collaborative problems in Mrs. Thompson's case. Give an example of each.
7. How should Nurse Saad prioritize interventions for Mrs. Thompson, considering her COPD and recent surgery?
8. If Nurse Saad needs to delegate certain tasks in Mrs. Thompson's care, what factors should be considered, and what tasks might be appropriate to delegate?

Mr. Najarian, a 67-year-old retired teacher, recently broke his leg after a fall at home. He underwent surgery and is now in the recovery phase. He has a history of diabetes and hypertension. The nursing team has been closely monitoring his progress, managing his pain, ensuring proper wound healing, and encouraging gradual mobility. His care plan includes pain management, wound care, physical therapy, and monitoring for potential complications

related to his chronic conditions.

9. During the evaluation phase, what specific indicators should the nursing team assess to determine Mr. Najarian's progress in his recovery from the broken leg? Consider his medical history in your answer.
10. How can the nursing team utilize the evaluation phase as a system to define, explain, and measure the effectiveness of Mr. Najarian's care, especially in relation to his chronic conditions?
11. How can the evaluation phase promote continuity of care for Mr. Najarian, especially considering his transition back home?
12. Reflect on the importance of comparing the planned activities (such as physical therapy sessions and wound care) with the identified outcomes (such as improved mobility and wound healing) in Mr. Najarian's case. How would this comparison impact future care decisions?
13. Mr. Najarian's recovery is on track, but he still requires pain management. How should the nursing team analyze the conclusions regarding his care plan? What decisions might they need to make?

You are a nurse in a medium-sized hospital's general medical unit. Recently, the hospital has implemented a new quality assurance program focusing on enhancing patient care and safety. One of the changes includes a new protocol for administering and documenting medications to reduce errors. Despite initial training, you notice that several nurses in your unit are struggling with the new system, leading to delays in medication administration and increased stress among the staff. The unit's patient satisfaction scores have also shown a slight decline, particularly in areas related to timely medication and effective communication.

14. In this scenario, how might structure and process evaluations be used to identify and address the issues arising from the new medication protocol?
15. How might a quality improvement initiative be designed to help the nursing staff adapt more effectively to the new medication protocol? Consider what data should be collected and how it should be used.
16. What changes could be implemented to improve the declining patient satisfaction scores? How would you use patient feedback to guide these changes?
17. Reflect on the National Database of Nursing Quality Indicators (NDNQI). What indicators might be most relevant in this scenario to monitor over time to ensure the new medication protocol is improving patient care and safety?

In a hospital setting, a patient, Mrs. Kalani, who recently underwent hip replacement surgery, is recovering in a postoperative unit. The nursing team is aware that she is at an increased risk of developing deep vein thrombosis (DVT) due to her surgery and limited mobility. To mitigate this risk, the team has implemented several interventions, including administering anticoagulants, encouraging leg exercises, and using compression stockings. Despite these measures, Mrs. Kalani complains of increasing pain and swelling in her left calf.

18. Considering the risk of DVT, what specific details should the nurses document in Mrs. Kalani's medical record to effectively manage this risk?
19. How should the nurses document their evaluation of Mrs. Kalani's condition in response to the interventions for DVT prevention?
20. In the context of this scenario, why is it crucial for the nursing team to maintain accuracy in their documentation, and what might be the consequences of inaccurate or incomplete documentation?
21. Choose a problem-oriented documentation method. Describe how a nurse might use this method to document an aspect of Mrs. Kalani's care in the given scenario.

Competency-Based Assessments

The nurse is considering the following nursing interventions:

- Administering oral medications to a patient with hypertension
- Assisting a postoperative patient with ambulation
- Educating a patient about proper wound care techniques
- Monitoring a patient's blood glucose levels and administering insulin as prescribed
- Performing sterile dressing changes on a surgical wound
- Collaborating with the dietitian to develop a customized nutrition plan for a patient with diabetes
- Providing emotional support to a patient experiencing anxiety
- Initiating intravenous (IV) fluid therapy for a dehydrated patient
- Facilitating family communication and decision-making during end-of-life care discussions

- Assessing a patient's pain level and administering pain medication as prescribed

1. Identify if the interventions are direct or indirect.
2. Identify if the interventions are independent, dependent, or interdependent.
3. Identify if the interventions are based on actual or potential problems.
4. Identify which interventions can be delegated to a CNA.

Markie, a nurse on a medical-surgical unit, is caring for a patient recovering from a surgical procedure. The goal of pain management is established, with the aim of achieving a pain level of 3 or below on a scale of 0 to 10. After administering pain medication as prescribed and implementing nonpharmacological pain relief measures, Markie assesses the patient's pain level and finds it consistently at a level of 2.

5. How does the evaluation of interventions determine a patient's progress?
6. How would the nurse evaluate the plan of care in this situation?
7. Is the goal met or unmet? How do you know?
8. Should the plan of care be continued, revised, or terminated? Why?

Take a look at the following HCAHPS sample questions and then answer the questions:

- How often did nurses communicate well with you?
- How often did hospital staff respond quickly to your requests for help?
- Did you receive information about what to do during your recovery at home?
- Did the hospital staff explain the purpose of your medications in a way you could understand?

9. How do these questions assess quality of care?
10. Determine strategies that could be used to provide quality care for each of the survey questions.

11. Write a SOAP note documenting a nursing intervention for a patient experiencing impaired mobility following surgery.

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CHAPTER 15

Evidence-Based Research, Quality Improvement, and Collaborative Practice

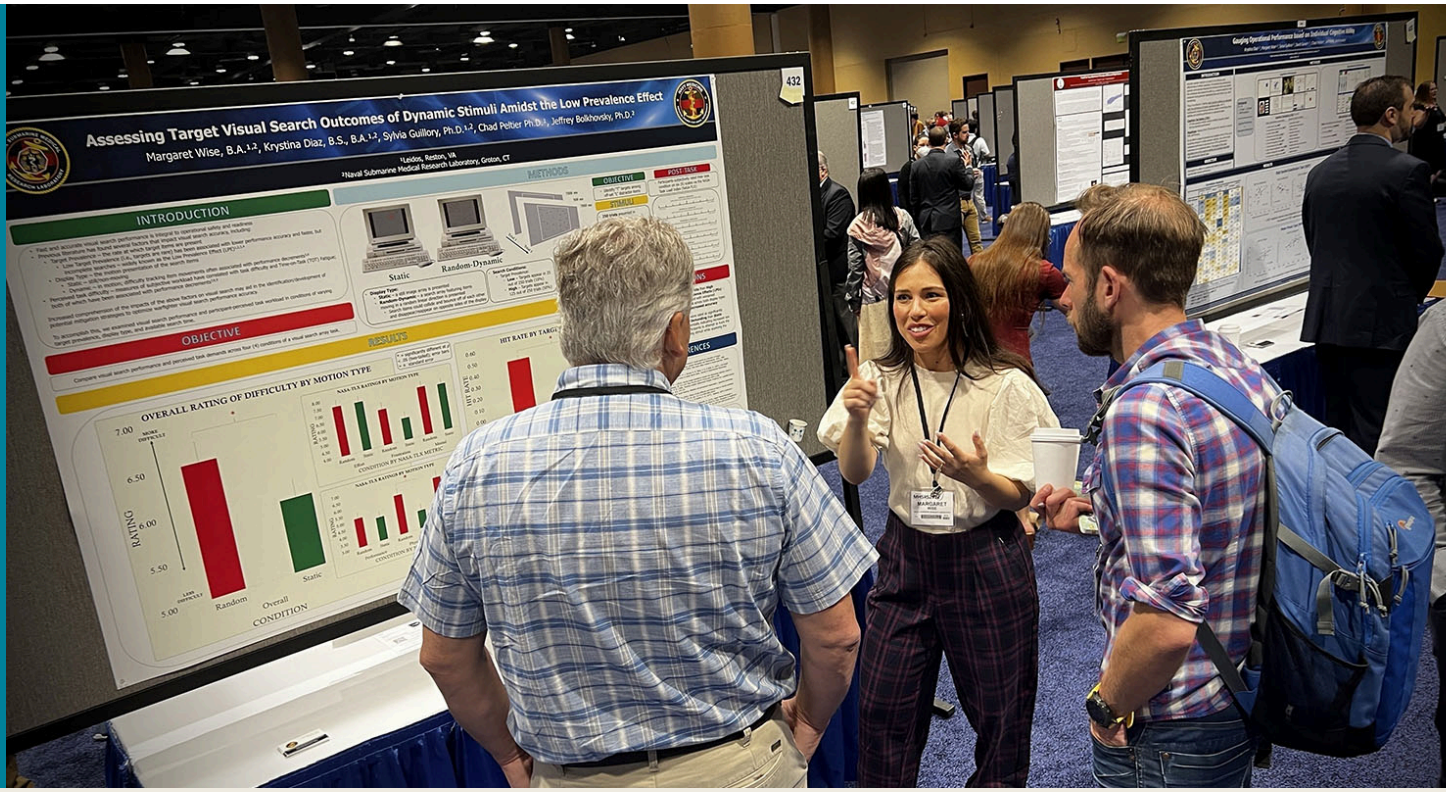

FIGURE 15.1 Though distinct processes, evidence-based research and quality improvement together provide a solid foundation for competent, collaborative practice. Poster presentations are an excellent venue to share information about these processes, which are crucial to the growth of health care. (credit: modification of work by U.S. Department of Defense, Public Domain)

CHAPTER OUTLINE

15.1 Evidence-Based Research
15.2 Evidence-Based Clinical Decisions
15.3 Quality Improvement in Nursing
15.4 Nursing Standards of Delegation
15.5 Collaborative Practice
15.6 Interprofessional Approach to Health Care

INTRODUCTION It is 1854, and Florence Nightingale has just arrived in Crimea, a peninsula in the Black Sea, with a group of thirty-eight English nurses (Figure 15.2). They have come to provide care for the sick and wounded men of the British forces who are fighting in the Crimean War. Nightingale is astounded by the filth and disease rampant in the hospital. Contaminated water is everywhere, and she sees the wounded lying in their own waste as bugs and mice scamper around them. She puts her nurses and the strongest patients to work with soap and scrub brushes. They clean the hospital from bottom to top, caring for patients as they go. The death rate in the hospital drops by two-thirds, and Nightingale—known today as the mother of modern nursing—has brought evidence-based practice to health care (Alexander, 2019).

FIGURE 15.2 Florence Nightingale and another nurse care for a soldier in the now-clean Crimean hospital. (credit: "Florence Nightingale. Coloured lithograph" by Wellcome Collection Gallery, CC BY 4.0)

Research and evidence-based practice have been inextricably tied to modern nursing since its inception. Nurses are expected to continually seek out and learn better and more effective ways to care for their patients. In the process, they see immediately what works and what does not, giving them invaluable insight into the work of improving unit, group, and facility protocols. Agencies today recognize the value of nursing research, and many provide incentives, such as bonuses for publication of original research, and encourage research-supported quality improvements as an essential component of their promotion process. Since the days of Florence Nightingale, to be a true nurse is also to be a researcher or, at a minimum, a research user.

15.1 Evidence-Based Research

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe how nursing research has evolved
- Identify the steps for translating evidence-based research into evidence-based practice
- Understand various models for implementing evidence-based practice

Nurses do not stand alone. They work alongside a wide range of other healthcare providers, ranging from assistive personnel to medical professionals to environmental staff. All these positions, and the organizations that employ them, base decisions regarding their practice on evidence derived from research.

An **evidence-based practice (EBP)** is an ongoing decision-making strategy that integrates high-quality research with clinical experience and with patients' preferences and beliefs (American Nurses Association [ANA], 2021; Polit & Beck, 2021). Evidence-based practice is considered one of the five core competencies of healthcare professionals (ANA, 2021). Thus, it is used by nurses and in all other fields of health care. For example, the Trendelenburg position (tilting a patient backward until their head is lower than their feet) was used for generations to manage hypotension immediately. However, studies have proven that while it may work for some patients, it is statistically not beneficial for the general population (Schnur, 2018). Additionally, using the Trendelenburg position has several health risks, including increased pressure on the brain and decreased respiratory ability (due to the pressure of abdominal organs on the lungs). Thus, because of research, current EBP discourages using the Trendelenburg position to manage hypotension.

The many types of research can be organized into two main categories:

- A **basic research** seeks to answer questions about current conditions without changing them. For example, basic researchers might ask, "What happens when a patient is placed in the Trendelenburg position?" Or, "How does giving patients glucose tablets rather than a cup of juice impact their blood sugar?"
- An **applied research** uses answers from basic research questions and other sources of current knowledge to evaluate changes to practice. For example, applied researchers might contrast the efficacy of a nurse-driven protocol for managing low blood sugar using glucose tablets (which may require a physician's order) with the use of juice to manage low blood sugar within the bounds of nursing practice.

Evolution of Nursing Research

Nursing research was in its infancy between Florence Nightingale's work and the end of World War II, in 1945. The first journal dedicated to nursing research, *The American Journal of Nursing*, began publication in 1900, and the first doctoral program for nurses opened its doors in 1923 (Polit & Beck, 2021). Most of these early activities focused on nursing education, not patient care. However, in the 1950s, more journals began being published, nursing research centers started opening, and foundations to fund nursing research began to appear.

In the 1960s, as professional nursing organizations recognized the lack of nursing scholarship regarding patient care, they began developing research priorities that included nurses' viewpoints, which are informed by nurses' close connection to direct patient care. By the 1970s, quality improvement in patient care had become more important for all healthcare workers, and the expansion of nursing research reflected these needs.

By the early 1980s, at least six major nursing journals were publishing original nursing research, the ANA was holding nursing research conferences, a National Center for Nursing Research (NCNR) operated at the U.S. National Institutes of Health (NIH), and guidelines had been established to assess the quality of research for its usability in practice. Internationally, twenty-five European nurse associations had also joined forces to improve patient care there (Polit & Beck, 2021).

In the 1990s, nursing research continued growing in the United States and abroad. The United States established the Agency for Health Care Policy and Research, now known as the Agency for Healthcare Research and Quality (AHRQ), and the NCNR became the National Institute of Nursing Research. International nursing research groups and journals were also established in Europe, Australia, and Canada. Since the early 2000s, nursing research has come fully into its own, as nurses have become valued partners in the healthcare industry. Nurses have claimed their seats at national and international policy tables, and an army of nurse researchers has conducted and published high-quality research projects.

CLINICAL JUDGMENT MEASUREMENT MODEL

Generate Solutions: Using ANA Practice Standard 14: Scholarly Inquiry

ANA's fourteenth practice standard for registered nurses states: "The registered nurse integrates scholarship, evidence, and research findings into practice" (ANA, 2021, p. 100).

Registered nurses should be able to perform several competencies relevant to this standard:

- Identify concerns that may be answered or informed through research.
- Combine evidence-based information with personal experience and patient preferences.
- Engage in evidence-based research.
- Use research to improve their knowledge, skills, abilities, and judgment.
- Share evidence-based knowledge with others to improve everyone's practice.
- Incorporate research to improve the quality of patient care.
- Explain the value of research to the nursing profession.
- Encourage ethics in research endeavors.
- Review research for appropriateness within given settings and situations.

Today, nursing research is flourishing globally. The World Health Organization (WHO) designated 2020 (the 200th anniversary of Florence Nightingale's birth) as the International Year of the Nurse and the Midwife (Wakefield et al., 2021). That same year, however, the onset of the COVID-19 pandemic brought to light many issues concerning the

nursing workforce and patient care. In 2021, the National Academy of Medicine (NAM) published a report on nursing over the next decade: *The Future of Nursing 2020–2030*: *Charting a Path to Achieve Health Equity*. The NAM report explores the unique position of nursing, including nurses' ability to work with all disciplines and to assist in improving health equity (Wakefield et al., 2021). It also offers research priority suggestions for nurses based on the population's most pressing needs. These include the following:

- Health equity: How can nursing and nurse-led interventions advance the equality of good health and health care across all patient populations?
- Emergencies: How can nurses better prepare for natural disasters and public health emergencies? Where are the gaps in education? What strategies will enable nurses to respond—and care for themselves—more effectively?
- Paying for health care: How can nurses quantify their value in terms of dollars saved by producing nursing-led interventions that improve patient outcomes versus the dollars spent in performing those interventions?
- Nursing education and workforce development: How can both processes be improved? What changes need to be made to improve workforce retention? What do nursing students need to be fully prepared for?
- Nurse well-being: How can nurses be supported more effectively by their agencies, the community, and each other? How can issues of lateral violence and incivility be managed?

LIFE-STAGE CONTEXT

Kangaroo Care for Newborns

Kangaroo care (Figure 15.3) provides an excellent example of EBP in action. Kangaroo care is the use of skin-to-skin contact—typically between an adult's bare chest (usually that of a parent) and a baby in only a diaper—for babies in neonatal intensive care units. Beginning kangaroo care immediately after the birth of a premature or low-birth-weight baby can dramatically improve their chance of survival, decreasing death rates by over 40 percent. Numerous studies have shown its effectiveness in helping premature babies regulate their body temperature, improving cardiorespiratory stability, decreasing pain and the chances of infection or severe illness, and facilitating bonding. It is cost effective and can be used exclusively in places that do not have available incubators. This practice was studied first in the 1970s but barely used until the late 1990s. Today, at least one hour of kangaroo care a day is considered best practice for premature but stable babies and recommended as a basic standard of care (Campbell-Yeo et al., 2015; WHO, 2021). Instances like these, in which nurses are firsthand witnesses to clinical behaviors that improve patient outcomes, provide a multitude of topics for nursing research.

FIGURE 15.3 This mother provides kangaroo care to her babies in a neonatal intensive care unit. (credit: "Born too soon and too small - Edith's twin boys" by Lindsay Mgbor/Department for International Development, CC BY 2.0)

Protection of Human Rights in Nursing Research

In a position statement about the nurse's role in ethics and human rights, the ANA highlights the need for nurse researchers to protect the human rights of research participants (ANA, 2016). Nurses taking part in research are specifically expected to do the following things:

- Ensure patients provide uncoerced agreement to participate in research or treatment. This informed consent must clearly explain the purpose, risks, and benefits of the research, as well as the intended use of patients' personal information.
- Continually evaluate the risks of the research versus the potential benefits of the outcome and stop research that is clearly harmful to the participants.
- Prevent harm to research participants.
- Engage in research that is relevant and will benefit the participants or people like them.

Everyone who seeks to perform research on a human subject, wants to receive grants or funding, or intends to publish their findings in a reputable journal must protect human rights. Per the NIH, a **human subject** is a living individual whom a researcher wants to interact with to collect information or specimens. Human subjects also include participants with whom the researcher does not interact directly if the researcher nevertheless plans to use their information or specimens in a way that may make them identifiable (NIH, 2018). Consider a case study of a 45-year-old Black man with a communicable disease such as HIV. In a large urban area where many people of all genders and races have the disease, simply removing the patient's name from the data may well make them unidentifiable to others. However, in a small community, simply removing the name may not be enough, and patients who are at risk of being identified based on the way their information is presented have the right to human subject protections. Figure 15.4 provides more information about how the NIH defines research on human subjects.

Human Subjects Research		
Research involving a living individual about whom data or biospecimens are obtained/used/studied/analyzed through interaction/intervention, or identifiable, private information is used/studied/analyzed/generated		
Examples of human subjects research include:		
• Collecting blood • Conducting a survey • Changing participants' environment	• Administering medicine • Interviewing • Administering a psychological test	• Collecting data • Conducting a focus group • Testing a new educational technique
Included in the NIH application: Protection of Human Subjects attachment. If funded, grantees will need: 1. An Institutional Federal-Wide Assurance (FWA) with The Office for Human Research Protections (OHRP) 2. Institutional Review Board (IRB) approval or determination of exemption 3. Human Subjects education		

FIGURE 15.4 Human subjects research can include a variety of types of research. (credit: modification of work "Human Subjects Research-NIH Infographic" by National Institutes of Health, Public Domain)

Nurse researchers must consider rules for protecting human subjects when developing research questions and proposals. Generally, researchers take some type of education regarding the use of human subjects. The Office for Human Research Protections (part of the U.S. Department of Health and Human Services) offers extensive, web-based educational modules that meet the requirements for human subjects noted in Figure 15.4. Researchers who want to publish or seek funding for their work must also go through their facility's **institutional review board (IRB)**, a group of people who monitor and approve medical research that will be performed and protect the agency's employees from engaging in unethical research practices.

LINK TO LEARNING

The horrendous treatment of 600 Black men in the Tuskegee Study of Untreated Syphilis in the Negro Male (now called the USPHS Syphilis Study at Tuskegee) was the driving force behind the development of many of today's rules regarding human participants in research. Check out this video on the Tuskegee syphilis study (https://openstax.org/r/77TuskSyphStudy) to learn more about this dark time in medical research and the need for strong protections for human subjects.

Methodology of Nursing Research

When a nurse works with patients on a day-to-day basis, they learn through **experiential learning** (or learning by doing). This process is not linear or structured; rather, it is based on the lived experience of the practicing nurse. In contrast, **nursing research** is structured inquiry designed to obtain and evaluate information related to a clear, specific question (Polit & Beck, 2021). The nature of the research question structures the methods used to achieve the answer. The **research methods** are the strategies and techniques used for gathering and analyzing information. In this context, there are two primary types of research: qualitative and quantitative.

Qualitative Research

A **qualitative research** is often complex and based on individual experience. It is generally open ended, allowing the participants to guide the research rather than specifying one or two options up front to study. It is descriptive and looks to answer questions about what and how a research participant thinks and feels. The focus is on the participant's perspective and experience, not the researcher's. Qualitative research is often basic research rather than applied. However, researchers can use the information obtained from qualitative research to identify questions that can be further studied quantitatively.

In qualitative studies, researchers develop questions based on the desired outcome and narrowed to a specific population, situation, or other relevant characteristic. For example, a researcher might study the factors that influence whether young immigrant mothers choose Western forms of health care for their children or healthcare traditions from their country of origin. The information received from such research will not be clear-cut. Each mother might have a variety of motives, beliefs, and values; individuals immigrating from different places may give completely different reasons for their choices. However, the researcher will look for patterns, relationships, or themes in the data that help deepen their understanding of the situation.

Most of the time, qualitative research in health care is performed through interviews, focus groups, or case studies. An **interview** is a one-on-one conversation between the researcher and the participant. Interviews can be formal and led by a series of predetermined questions, or informal. For example, a researcher might begin with a few set questions but allow the participant to lead the conversation. Regardless, qualitative research generally uses **open-ended questions**, which require more information than *yes* or *no* responses—often including an explanation of the answer. (An important exception is if the interviewer wants to clarify a point.) A **focus group** is essentially a group interview, usually ten or fewer people, in which participants interact with each other and the researcher. A **case study** is an in-depth exploration of all aspects surrounding a complex issue as experienced by one or two individuals.

Qualitative research is an excellent way to explore some issues; indeed, nurses ask their patients qualitative questions daily even when they are not performing research. However, qualitative research has some drawbacks. For example, it is very easy for researchers to introduce bias into the process. A **bias** is a type of research error that researchers introduce by leading interviewees or suggesting one type of answer over another. Consider again the example study of young immigrant mothers. Suppose one of the interviewers asked, "Please tell me why you do not like pediatricians." However, this is a leading question: the interviewees may never have said they do not like pediatricians; they may have any number of other reasons for their healthcare choices. Anything they say in response to this question—or even to others that follow—may be invalid because the interviewees may have been influenced by the researcher's false assumption.

Qualitative research is also immensely time consuming. In general, an interview or focus group lasts one to two hours. The responses must then be transcribed before they can be analyzed. As a result, these studies are generally

small. A project that interviews fifty participants is considered very large.

PATIENT CONVERSATIONS

Asking Patients Open-Ended Questions

Scenario: Sharon is a 65-year-old White female with a higher weight from a small rural town in Mississippi. She recently moved to Queens, New York; she is at a new doctor's office for an intake appointment and is speaking with a new nurse. Sharon has a thick accent and low health literacy, and she uses some terminology with which the nurse is unfamiliar. The nurse and Sharon are struggling to understand each other.

Nurse: Do you have any preexisting illnesses or medical conditions?

Patient: I have the sugar.

Nurse: I wasn't talking about candy. I meant do you have any health concerns the physician should know about, such as hypertension or asthma?

Patient: No.

Nurse: Do you take any medicine?

Patient: Yes, I take shots for the sugar.

[Nurse looks annoyed and frustrated.]

Scenario follow-up: Sharon's nurse becomes frustrated because they are not communicating, excuses herself briefly, and asks a more experienced coworker for help managing the situation. The older nurse offers to perform Sharon's intake as the original nurse observes. They begin the assessment over again.

Nurse: Do you have any medical conditions we should know about?

Patient: I told that other nurse that I have the sugar.

Nurse: Can you explain what you mean by "the sugar"?

Patient: You know, the sugar diabetes. I take shots for it.

Scenario follow-up: The more experienced nurse used open-ended questions, did not make assumptions, and identified that Sharon has diabetes. ("The sugar" is a common way of referring to diabetes in the Deep South, though nurses in other parts of the country may be unfamiliar with the term.)

Quantitative Research

A **quantitative research** tests the validity of a reasonable idea in a given setting. It is based on deductive reasoning, a logical approach that moves from general ideas to specific conclusions and seeks to obtain **empirical evidence**—evidence that can be measured (Polit & Beck, 2021). As the term suggests, quantitative research is grounded in numerical data, like percentages or rates. It is observational, exploring what can be measured through the senses or quantified in individual responses to questions. Quantitative researchers often use statistical analysis to prevent bias within their research and to evaluate the strength of relationships between variables. A **variable** is a factor that is measured or studied in research: anything from a subject's age or level of reported pain to the number of times a patient gets up at night to use the bathroom, the efficacy of a particular pain medication, or the history of illness in a family.

When planning for quantitative studies, nurses and other evidence-based practitioners frequently use the PICOT framework to develop testable questions (Polit & Beck, 2021):

- P: What is the population or patient group? What characteristics bind these individuals together?
- I: What is the intervention that is being tested?
- C: What is the comparison, or the group receiving the current treatment rather than the intervention?
- O: What is the desired or expected outcome?
- T: What is the time frame for the study? How long will subjects be followed?

Here is an example of a potential PICOT question: In adult inpatients, aged 50 to 70 years, with diabetes who experience low blood sugar [Population], how does fruit juice [Intervention] compared to glucose tablets [Comparison] affect patients' blood sugar levels [Outcome] over the course of a twenty-four-hour period [Time Frame]?

Once the question is defined, the flow of quantitative research generally follows a fairly linear process, as shown in Table 15.1.

Step	Description
Review the literature	Do journal research to see what is known about the question, determine why new research is important, and develop a hypothesis.
Develop a research plan	Answer questions such as: How will the research be conducted? How will data be gathered? How will it be analyzed? How will human subjects be protected? How will participants be chosen? How will they provide informed consent?
Collect the data	Run the study and gather evidence. Very large studies may be preceded by a sample study to ensure the correct data are being collected.
Analyze the data	Perform statistical analysis to compare variables and outcomes.
Interpret the results	Make sense of the results and what they mean in relation to the research question. Is there clinical importance to the results?
Present the information	This can be done in a group or presentation format or through publication.
Evaluate the results	Determine what if anything has been learned that can be used in clinical practice to improve patient care, working conditions, or other outcomes.

TABLE 15.1 Quantitative Research Process

There are several ways to design quantitative research. Here are a few commonly used designs (Winston-Salem State University, 2023):

- A **descriptive research** approach uses one or more variables. For example, a study might seek to determine what types of pain medications are ordered on a medical-surgical unit, how frequently they are ordered, how often they are given, and what types of patients are most likely to receive them. Most research will include some descriptive statistics.
- A **correlational research** approach uses statistical analysis to explore relationships between two or more variables. For example, a study might investigate whether different physicians on a medical-surgical unit are more likely to order pain medication to be given as needed or to require patients to adhere to a schedule. Another study might investigate whether there are patterns in the timing of when certain nurses give pain medication.
- A **quasi-experimental research** approach explores cause-and-effect relationships but does not apply new interventions. For example, a study might investigate how different amounts or types of pain medication affect patients' length of stay in a facility, chances of acquiring a nosocomial infection, functional ability upon discharge, or overall mortality.
- An **experimental research** approach studies the effect of a new intervention on a known concern and evaluates its effectiveness. For example, a study might seek to determine the efficacy of alternative

therapies—such as trigger point massage, dry needling, or physical therapy—at decreasing the amount of pain medication given on the medical-surgical ward.

Regardless of the design, quantitative researchers should ask **close-ended questions**, which have a limited range of answers (such as yes/no or 1–5). Each answer should be assigned a value, enabling measurement and comparison. Figure 15.5 gives examples of each type of question: qualitative, or open ended, and quantitative, or close ended.

Qualitative questions	Quantitative questions
• Please describe what you do when your blood sugar is low. • How did you choose your child's doctor? • Please explain what you mean by "the sugar."	• Do you have diabetes? (Answer limited to yes, no, or unknown) • Please rate your pain between 0 and 10 with 0 being no pain at all and 10 being the worst pain you can possibly imagine. • How many times a week do you have difficulty falling asleep?

FIGURE 15.5 Qualitative questions aim to understand a patient's experience and narrative. Quantitative questions focus on obtaining measurable and numeric data. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Quantitative studies are excellent for numerically evaluating the value of interventions and the success of treatments. They can also be easily scaled up to large numbers. Quantitative studies with large data sets may include thousands of participants. However, there are possible issues that can affect the data. For example, if individuals do not use the specified responses, their answers cannot be properly evaluated. Furthermore, because the responses are close ended, important information may be missed. Consider a researcher collecting information regarding insomnia in a particular population. They may ask participants, "How many times do you have difficulty falling asleep or staying asleep in a week?" Answers to this question are limited to 0 through 7. This misses people who perhaps have difficulty falling or staying asleep once every few weeks or only when they are worried about something. If researchers do not find other ways to capture these responses, they will lose an entire segment of the group they want to study.

REAL RN STORIES

Application of Nursing Research

Nurse: Cho, BSN
Clinical setting: Medical-surgical unit
Years in practice: 3
Facility location: Urban VA hospital in Kentucky

I conducted a small quantitative research project on my unit to improve patient care as part of my professional development. We did not like the type of needleless syringes that we were using with our patients. Several nurses complained they were too tight and difficult to attach to the Luer-locks on patients' IV catheters. It often hurt patients because we pulled on the catheter or the tape holding it to the patient's skin as we tried to attach the syringes. The Luer-locks also caused more than one of us to rupture a vein and then stick patients additional times.

I went to my nurse manager and discussed the issue with her. She told me that several different types of syringes were available for VA use but that our supply people only purchased one type. She encouraged me to research the possibility of changing syringes. After talking to the supply department, they agreed to get us a couple of new types to try out.

I spoke with my colleagues and explained the research project. All the nurses on the floor tried each type (there were three, our current one and two others) for one week each, starting with the new ones and ending with our current one. At the end, I gave the nurses a survey where they rated the different syringes using a Likert scale from 1 to 4, with 1 being the worst and 4 the best.

When I counted surveys and added up the results, one of the new types was a clear winner. I wrote up my findings

and took them to our nursing practice board to request a permanent change to the new syringe. I presented my findings and received approval from the board. Then I worked with the supply department to switch our unit over.

Mixed Methods Research

Today, many researchers use **mixed methods research**, combining both qualitative and quantitative components to create more nuanced findings (Polit & Beck, 2021). This approach works well because qualitative and quantitative research are complementary; they help manage the complex phenomena that make up human health and well-being, and they offer greater validity for research. Figure 15.6 offers some examples of how mixed methods research can be achieved.

Research Aim Understand the experience of workplace bullying by nurses with less than 1 year experience	
Quantitative data	Survey sent to all nurses in 3 states with less than 1 year of experience Survey data is close ended based on Likert scale
Qualitative data	Individual interviews with 15 nurses (5 from each state) exploring their experiences with workplace bullying
Combining qualitative and quantitative data	Use the qualitative data to explain the quantitative results

FIGURE 15.6 Combining quantitative and qualitative methods in research can be the best of both worlds and ensure the highest quality results possible. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Understanding the Parts of an Article

Being able to read a **research article** effectively is an essential piece of being able to evaluate research. Most high-quality articles include several main parts (Polit & Beck, 2021):

- The **abstract**, placed at the beginning of the article, briefly describes the rest of the paper. Abstracts vary in length depending on the journal but generally range between 200 and 350 words. Some are structured, using specific subject headings; others are narrative, more like a descriptive paragraph of the work.
- The **introduction**, sometimes called the background, explains why the research was needed and conducted. It usually includes a brief **literature review** that synthesizes what other researchers have learned about the topic and explores what information still needs to be determined by future research. It may also include definitions of some key terms, an explanation of why the research is needed, and the question(s) the study aims to answer.
- The **methods** section provides all the details about how the study was conducted, including the patient population, the setting, and the specific variables studied, as well as how those variables were studied and how the data were analyzed. Most methods sections also include the human rights protections used, the way informed consent was obtained, and the approval information from the IRB that evaluated the research plan.
- The **results** section describes what was learned from analyzing the data. It often includes the demographic statistics of the participants, charts or graphs illustrating the results, and findings from statistical analyses, including how statistically significant the results are. A **statistical significance** describes the relative chance that results are reliable and would be reproducible with a different group of similar patients. The language used to describe the significance of a specific bit of research might look like this: Given the same parameters, there is an 80 percent likelihood that 75 percent of patients will experience a 5 to 10 percent decrease in their blood pressure.
- In the **discussion** section, the authors compare their results to other research that has been done related to the question. They should include information regarding the consistency of their results related to other research, the potential clinical importance of their research, any possible implications for clinical practice, suggestions for additional research, and the study's limitations.
- Some journals require a **conclusion** separate from the discussion; others add it to the end of the discussion section. Generally, it is a concise statement about the importance of the research and what it brings to the larger research community.
- Articles typically end with a **references** section that lists all the sources the authors cited when writing the

paper.

Other than these central components, an article may present additional information that readers should examine, particularly before considering any of the article's recommendations. In particular, look for these three pieces of information, which generally appear either in the front matter (everything before the abstract) or the back matter (everything between the conclusion and the references):

- If the Methods section does not provide information about informed consent and human rights protection, it should appear in either the front or back matter. If not, the research may not have been conducted ethically.
- Sometimes, how a study was funded will answer many questions about its potential value. Product manufacturers often fund research, but their biases should be obvious. Making an evidence-based decision to use new products based solely on research paid for by the manufacturer can result in a poor decision.
- One of the values of sharing research is the ability to reproduce that research in various populations. Most journals today require a statement regarding data availability so that other researchers in different places can attempt to reproduce the research to see if the findings will be the same for their population.

Types of Research Articles

Research and research articles come in a variety of formats. For a nurse seeking to expand their knowledge base and improve their practice, the best sources of research are typically **peer-reviewed journals**. As a condition for publication, these journals require several (usually three) reviewers to thoroughly read the information and evaluate its value. Journal articles come in a variety of formats. Each type of article has value and can be meaningful for practice. Table 15.2 offers a few examples of the types of articles one might find in nursing or other healthcare journals.

Article Type	Explanation
Research	These articles describe original research performed by the authors.
Literature review	These articles discuss what other original researchers have said about a topic, attempt to synthesize the information, and explore what information still needs to be determined by future research. They are narrative, do not use statistics, and often do not include a methods section.
Systematic review	The authors of these reviews systematically retrieve all research articles written on a given topic. Additionally, they often evaluate individual articles for the quality of the research.
Metareview	These systematic reviews include a statistical strategy to analyze and combine the results from many studies and evaluate their usefulness.
Guidelines	These are specific statements from large organizations, such as the ANA, that provide standards of practice for specific populations of patients. These are usually based on the most up-to-date and well-validated EBP available. Guidelines may be published in journals when major changes to a discipline's guidelines are introduced; they may also appear on association websites.
Editorials	These are generally short opinion articles, also known as commentaries, written by subject-matter experts to discuss an issue of concern.

TABLE 15.2 Types of Research Articles

Translating Research into Practice

An **evidence-based research (EBR)** is incorporated into EBP when healthcare providers use the research findings to improve their day-to-day care of patients, and it can be a dynamic tool for that purpose. However, a large body of EBR has not been implemented into routine patient care because moving from research to practice can be extremely complicated. Translation science is a branch of research dedicated to improving how EBP becomes

standard care (Titler, 2018). EBP can be used for individuals or patient groups (Bell, 2023). When an individual patient has a concern, need, or question with which a nurse is unfamiliar, the nurse can use the steps of EBP to seek relevant research and find an answer that aligns with the nurse's experience and the patient's preferences and values. Figure 15.7 is a Venn diagram representing these relationships in EBP.

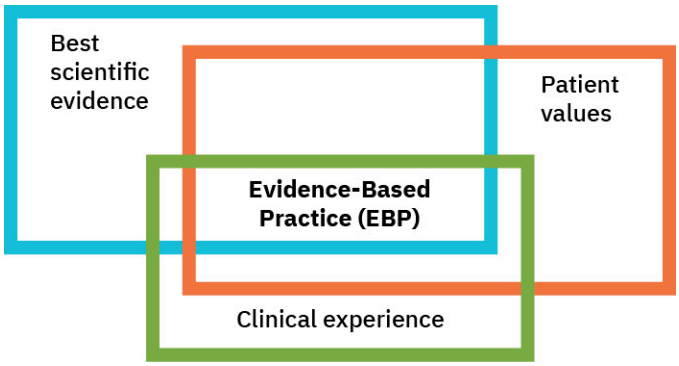

FIGURE 15.7 This Venn diagram shows the interconnected relationships—between scientific evidence, clinical experience, and patient values—that form the core of EBP. (credit: modification of work from *Psychiatric-Mental Health Nursing*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

In contrast, a hospital, unit, or clinic may have several patients with similar concerns that could be managed more effectively with alternative interventions. Some nursing staff members may then decide to explore the issue using the steps of EBP to determine whether a practice or policy change should be made at the level of the agency or unit.

Steps of Evidence-Based Practice

There are defined steps for performing EBP that aim to successfully implement a new intervention with patients, while EBR aims to determine the success or failure of an intervention (Titler, 2018). There is some disagreement between researchers regarding the number of steps in EBP. However, most scholars set the number at five or six (Bell, 2023; Capili, 2020). Here is a typical list:

1. Ask a question.
2. Find information about the topic.
3. Evaluate the evidence.
4. Align the evidence with clinical experience and patient preferences, determining what specific practice changes to make.
5. Make the changes.
6. Evaluate the outcomes.

Depending on the situation, additional steps may include planning to make the change sustainable over time, developing or revising policies and procedures, or determining how to share the information within units, hospitals, agencies, or even professional organizations.

LINK TO LEARNING

This short video offers a quick introduction to EBP (https://openstax.org/r/77IntroEBP) and sets the stage for our continuing inquiry.

Ask a Question

The questions you ask and how you ask them will affect the value of the information you receive. Questions that are too broad will return more results than are needed or desired. Questions that are too narrow may not return the information necessary to evaluate the issue. The first rule of thumb is to ask a searchable question (Bell, 2023), one that uses clear and specific keywords enabling you to find what you are looking for. Consider looking for information about "preterm labor" (early pregnancy delivery). The searcher would receive far more titles and websites than they will be able to review. Here is a more searchable and specific question: "What is the survival rate for preterm labor before twenty weeks in the United States?"

LINK TO LEARNING

The Oncology Nursing Society has several excellent resources regarding evidence-based practice. They provide a worksheet with questions (https://openstax.org/r/77EBPQuestions) that can help staff members generate possible topics and ask questions in a way that facilitates research.

Find Information about the Topic

Several search engines focus specifically on peer-reviewed journal articles on nursing, medical, and allied health topics, including MEDLINE and CINAHL, which can be accessed through most libraries. PubMed and Google Scholar can be accessed through any search engine. Most search engines will bring back many results that must then be explored to ensure they offer appropriate information about the question. The abstract portion of journal articles will generally provide enough information to know if the article pertains to the question and provides quality evidence.

Whether you use journal search engines, Google Scholar, or a general search engine such as Bing or Google, you must use keywords effectively to find the evidence you need. For an individual patient, look for keywords specific to that patient's situation (Bell, 2023). For example, suppose you were working with a 45-year-old, female, Black patient with prediabetes who wants nutritional guidance to prevent becoming fully diabetic. In that case, you might use these keywords: "female," "Black," "prediabetes," "middle-aged," "nutrition," and "patient education." When working with an individual, even a simple Google search can yield high-quality information from reputable sources, which can frequently be tailored specifically to that individual.

However, suppose you are searching for information that might lead to a practice or policy change for an entire group of patients. In that case, the keywords should be less refined (Bell, 2023). For example, suppose you were working to develop a patient education handout regarding nutrition for patients with prediabetes. In that case, you might search "prediabetes," "nutrition," and "patient education" as keywords. The resulting evidence would be less specific for any single patient but more generalizable for all patients.

Evaluate the Evidence

Not all sources are equally reliable, and no search can ensure only high-quality results. Therefore, once a search has been completed, the nurse must assess the quality of the information they received (Bell, 2023). Stricter criteria may be necessary to support a policy change than to treat an individual patient. Consider the following questions when evaluating evidence.

From where did the information come?

High-quality information comes from reputable sources:

- peer-reviewed journals
- practice guidelines from national-level practitioner governing bodies, such as the ANA or the American Association of Critical-Care Nurses
- condition-related organizations, such as the American Diabetes Association or the American Heart Association
- laws and applicable governmental bodies, such as the Centers for Disease Control and Prevention (CDC) or the AHRQ
- reputable websites, which may be more likely to end in .gov, .edu, or .org

Nurses should consider the credentials of the authors of information to determine if it comes from a reliable and reputable source. Lower-quality information typically comes from consumer websites and blogs. It is important to look for references in any article you find. If the authors do not list their sources, you cannot determine the validity of the information. Encyclopedias also do not typically make good sources for research. While they provide excellent overviews of topics, they are usually too broad and may not be current with the most recent data. Even online encyclopedias, such as Wikipedia, which are regularly updated and often supply references, are not necessarily peer reviewed and therefore should not be considered as authoritative sources.

When was the information written?

Research is written and published daily, and the nursing and allied health community is dynamic, constantly

changing and continually improving. As a result, *when* the research was published can be as important as *who* published it. A general rule of thumb is only to consider research published in the preceding three to five years (if at all possible), unless it is a **seminal article** meaning it continues to influence research and practice.

Where does the research fall in the hierarchy of evidence?

The **hierarchy of evidence** is a classification of evidence into categories based on the type of research represented. It is one way to evaluate the strength of research. Examine Figure 15.8. At the bottom of the pyramid (level VII) is the weakest evidence, and at the top (level I) is the strongest. Researchers disagree on how to structure the middle levels, but they generally agree that expert opinion is the lowest quality of evidence, while systematic and metareviews offer the highest quality (Curtis & Keeler, 2022; Oncology Nursing Society, 2023).

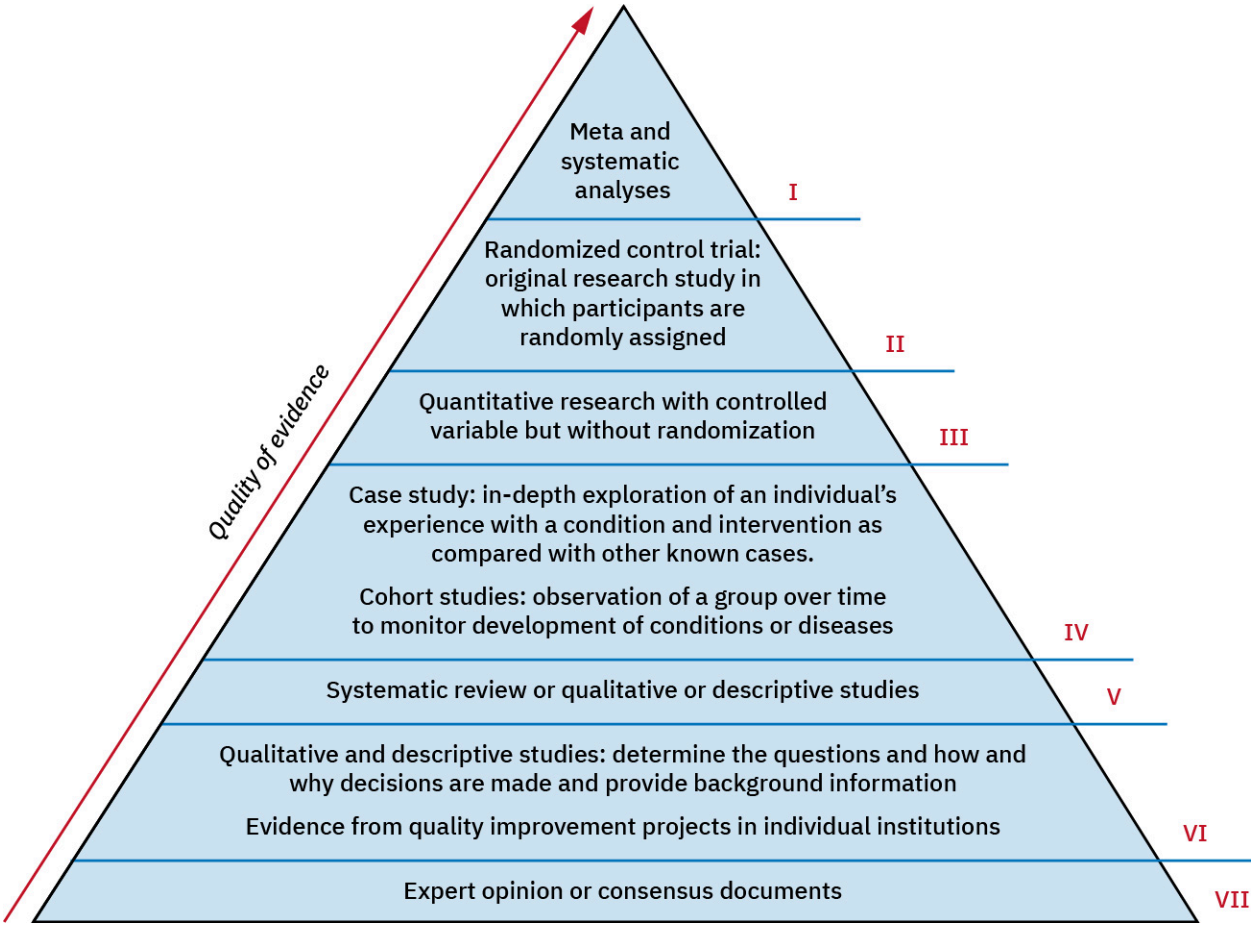

FIGURE 15.8 The quality of evidence increases as researchers move up the hierarchy. At higher levels of the pyramid (such as I, II, and III), more data are available, and greater generalization is possible. (Based on Curtis & Keeler, 2022; Oncology Nursing Society, 2023). (credit: attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Align the Evidence and Determine What Practice Changes to Make

Once the best evidence has been gathered, it must be aligned with the other parts of EBP—the clinical experience of the nurse and the patient's values—to establish a change moving forward (Capili, 2020; Bell, 2023). This strategy can be straightforward for the individual nurse with a single patient. If the change does not violate current hospital policies or procedures, if the nurse believes in the value of the intervention, and if the patient accepts the intervention, an individual nurse can introduce evidence-based changes to their practice (Bell, 2023).

In contrast, translating knowledge into practice and implementing EBP for more than a few patients require planning and strategies to overcome potential barriers (Curtis et al., 2017). Planning for sustainable change at an agency or even a single unit level may involve multiple disciplines. It can quickly become complicated because the environment in which the EBP will be performed already has a set of rules and procedures that nurses follow, as well as budgetary and other limitations (Titler, 2018). For example, suppose the evidence says that behavioral health therapies could help prevent depression in patients following cardiac surgery; however, if a facility lacks the

funds to pay for behavioral health providers, it may be impossible to implement the change there. So, with a group of practitioners or a patient population, it is crucial to initiate evidence-based changes that the agency can sustain over time (Capili, 2020; Titler, 2018).

Make the Changes

Once the decision has been made to implement an evidence-based change, nurses should begin to use the new intervention in daily practice. Depending on the change, it may be used with all patients or only with patients who meet specific parameters (such as age range or condition type). Implementing larger-scale initiatives may require changes to existing policies or procedures or restructuring of resources (Bell, 2023). Proper documentation of the responses to the intervention is necessary for the next stage, evaluation, to take place.

Evaluate the Outcomes

Finally, evaluate the EBP change. Did it work? Was it effective for the individual patient? Did it work for the target population? Is it sustainable for the group? How does it improve patient outcomes and satisfaction? When these questions are answered, nurse scientists can make the thoughtful decision to continue with the practice, change back to the old way, or develop an alternative intervention—always with the foremost goal of improving patient care and outcomes.

Understand Models for Implementing Evidence-Based Practice

When considering EBP initiatives at a facility or unit level, multiple **stakeholder**s (individuals or groups who have some type of interest or concern regarding practice changes in an area), usually from several disciplines, must be engaged in the process and assisting with the initiative. Whereas an individual nurse can make a personal practice change for a specific patient, larger-scale projects take time to develop and implement. Several well-respected models are used to develop EBP initiatives for group or population-level changes, including the Iowa Model, the Joanna Briggs Institute model, and the Evidence-Based Public Health model (Dusin et al., 2023).

To better understand the EBP framework, let's focus on one model. The Johns Hopkins Evidence-Based Practice (JHEBP) model was developed at the Johns Hopkins Medicine Center for Evidence-Based Practice. It is commonly taught in research courses and used by other large research hospitals and academic institutions such as Vanderbilt University and Medical Center (Dang et al., 2022; Dusin et al., 2023; Vanderbilt University Medical Center, 2018). The JHEBP model includes three core components, known as the PET process: practice question, evidence, and translation (Dang et al., 2022). Each component has several associated steps, with twenty steps for the entire process. The process incorporates agency needs and resources, stakeholder input, best evidence, and information dissemination.

Practice Question

The JHEBP model's first component involves forming the EBP workgroup and developing the practice question. This happens over seven steps, as follows (Dang et al., 2022):

1. Recruit the interprofessional team, using care to involve members who will be impacted by any changes made. These individuals will likely be more invested in the process.
2. Decide on the leadership of the project. All projects need a knowledgeable leader to help others stay on track.
3. Schedule meetings. The leader should establish a time and quiet place for meetings and ensure that members are involved in keeping minutes, working on a timeline, and managing the project resources and information.
4. Clarify and describe the problem. Discuss the differences between what is happening and what participants would like to be happening. Clarify why the current practice is a problem.
5. Develop and refine the EBP question. The JHEBP uses the PICOT framework described in Evolution of Nursing Research.
6. Determine the need for an EBP project. Before continuing, the group members should explore the literature to determine whether a body of evidence related to the problem exists. The preferred evidence is high-quality systematic reviews published within the last five years. If there is not enough research evidence for an EBP, group members can explore other options, such as initiating quality improvement projects, conducting original research, or verifying that they are using the current standards of their community, agency, or specific disciplines.
7. Identify stakeholders who will be impacted by the project and who should be involved or kept informed during

the process. Any disciplines that will be directly impacted by any EBP changes should be invited to be team members.

Evidence

Evidence provides support that an intervention is needed and works: for example, data may show that one drug is more effective than another at treating a particular condition. The evidence component of the JHEBP model includes five traditional EBP steps focused on acquiring and evaluating evidence (Dang et al., 2022):

1. Search for evidence. Team members should be assigned to various research components, including evidence internal to the agency and external. Journal articles, specifically systematic and metareviews, are essential. Additional evidence will be found in clinical practice guidelines, community standards, position statements from professional organizations, quality improvement data, and safety and regulatory information.
2. Evaluate the quality of each piece of evidence. The JHEBP has its own hierarchy of evidence (similar to the evidence pyramid shown in Figure 15.8) that researchers use to rate sources and evidence as high, good, or low. Evidence that is rated as low is not used to make EBP decisions.
3. Summarize individual evidence. Each piece of evidence is summarized and documented based on several factors, including quality, evidence level, findings, population, and limitations.
4. Synthesize findings. The team examines the entire body of evidence and integrates the findings as a group.
5. Develop recommendations. The team determines the value of the overall findings and the evidence level. Then they recommend moving forward, stopping the process, or performing additional investigation.

Translation

The final component of the PET process is translation of the EBP team's recommendations into practice in the target setting(s). This component involves eight final steps (Dang et al., 2022):

1. Identify practice setting–specific recommendations. Work with stakeholders, leaders, and frontline staff to determine if recommendations are actionable and feasible, given the agency's culture, willingness to change, and resources.
2. Create an action plan. Develop any policies or specific procedures reflecting the change, a timeline for implementation, and evaluation processes. Encourage feedback from stakeholders, leaders, and frontline staff.
3. Secure stakeholder support and necessary resources. The best projects and interventions can be fumbled if unit and department leadership do not support them.
4. Implement the action plan. Ensure everyone impacted receives the education and resources necessary to make the change. The team should be prepared to answer questions and assist with problems.
5. Evaluate the change. Has the change created the desired outcomes? Have unexpected outcomes occurred? Evaluate the actual versus expected outcomes and determine if the change should be retained.
6. Report the results. Use local presentations to ensure all stakeholders, leaders, and impacted frontline staff know the project's outcomes.
7. Identify the next steps. Review the process and results. Should additional research be undertaken? Are additional changes needed for the process? Have new questions emerged?
8. Disseminate the findings. Report the results to the organization, at a minimum. Also, consider other venues for disseminating the results, such as journal articles and conferences.

LINK TO LEARNING

The JHEBP model has been used extensively in nursing projects for almost two decades. Read this article about a quality improvement project that used the JHEBP model (https://openstax.org/r/77JHEBPQImpProj) to decrease surgical site infections. It is an excellent example of translating research into action.

15.2 Evidence-Based Clinical Decisions

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the foundations for evidence-based decision-making
- Apply the Institute for Healthcare Improvement (IHI) bundles to evidence-based nursing practice

Most nurses do not spend their day-to-day lives engaging in evidence-based research (EBR). However, all nurses make evidence-based clinical decisions daily as part of the ordinary course of their work. An **evidence-based decision-making (EBDM)** involves using evidence-based practice (EBP) when making decisions about caring for individual patients (Belita et al., 2020). Examples of EBDM include preventing falls by encouraging a patient to call before getting up to use the bathroom, asking a physician to order a medication in a liquid rather than pill form to make it easier for a patient to swallow, and determining what kind of dressing to put on a new wound. EBDM draws on the nurse's experience, intuition, understanding of EBP, and knowledge of the patient (Nibbelink & Brewer, 2018).

Foundations for Evidence-Based Decision-Making

EBP and EBDM look similar because they both rely on the EBP triad of scientific evidence, clinical experience, and patient values Figure 15.7. However, EBDM must also include an understanding of the setting and environment in which the decision is made. The practical consequence of this understanding is that nurses always have a limited number of options to choose from (Nibbelink & Brewer, 2018). For example, even if the gold standard of care has excellent evidence to support it, aligns with a nurse's clinical expertise, and meets a patient's preferences, it still may be impossible to provide based on the agency's policies, procedural concerns, or resource limitations. Thus, decisions must be made based on the EBP triad and the situational reality of what is possible within a given setting.

The EBP movement has decreased gaps between what nurses and other healthcare professionals do in practice and what they should do based on the best evidence. As a result, several tools are now available to bring the best EBPs to the bedside and make them easily accessible for clinicians and agencies. One commonly used tool is the ISBAR (sometimes abbreviated to SBAR) strategy for communicating information between healthcare team members. ISBAR stands for introduction, situation, background, assessment, and recommendation. It has been implemented effectively in many agencies throughout the United States as a way to communicate necessary patient information rapidly and succinctly among healthcare workers in a variety of situations (such as end-of-shift reporting and transferring patients between units or facilities). Figure 15.9 shows an example of an ISBAR communication between an emergency room nurse sending a patient to a unit and the nurse who is receiving the patient.

ISBAR **EVIDENCE-BASED PRACTICE MODEL OF COMMUNICATION**	*PATIENT NAME:* _____ *DOB:* _____ *Department:* _____
INTRODUCTION **I**	Who the speaker is and their reason for communicating • Hello, this is Kita from the ER. • I need to give report on Ms. Fernando, a 53-year-old Hispanic female, going to room 187. • She is being admitted for 24-hour observation and telemetry.
SITUATION **S**	Explains what is happenening right now • Ms. Fernando came to us today complaining of chest pain which resolves upon resting for one day. • She also has a one week history of fatigue and complains of discomfort in her upper back and left upper arm. • Blood pressure is 140/95 which she states is high for her and pules is 104. EKG shows normal sinus rhythm. Troponin is 1.0.
BACKGROUND **B**	Brief and relevant history of the illness • She denies history of cardiac issues. • She has a history of hypertension and morbid obesity.
ASSESSMENT **A**	Individual assessment of the situation or background • Ms. Fernando is alert and oriented and speaks good English, however she is upset about being admitted and may need some extra attention. • She had several people with her in the emergency room and they seem to make her anxious.
RECOMMENDATION **R**	Request needs or specify suggestions • She is a difficult needle stick, so try to draw all of her labs at once. • They've ordered telemetry so you might want to get a box ready for her. • You might consider trying to limit the people in her room to see if that will help with her anxiety.

FIGURE 15.9 The ISBAR is an example of a standardized EBP communication tool used to improve clinician communication about patients. (credit: attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

It can be confusing to apply the EBP triad in practice. Let's further explore this process for each component of the triad.

Patient Preference

The importance of honoring patient preferences is a key tenet of both patient-centered care and shared decision-making. Patient-centered care (PCC) is the inclusion of patient preferences, values, and needs in healthcare activities. Nursing is always patient centered because our standard of practice encourages partnering and working

collaboratively with our patients and considering their culture, beliefs, and values when making decisions (American Nurses Association, 2021). Thus, incorporating patient preferences and values into EBDM is a natural behavior for nurses and an expected standard of practice.

What does it mean to include patient preferences and values in decision-making? It may be as simple as asking patients what they want or need and hearing what they say and do not say (Nibbelink & Brewer, 2018). Alternatively, it may consist of learning about the expectations of a patient's culture or ensuring the presence of a certified medical language translator when discussing their preferences or providing education. Some patients may have religious beliefs that influence their preference for one intervention. Others may have difficulty accessing outside resources, so decisions must include only resources the nurse can provide at the point of care. In short, incorporating patient preferences and values into EBDM requires assessing and understanding what matters to the patient (American Speech-Language Hearing Association, 2021).

PATIENT CONVERSATIONS

How to Identify Patient Preferences

Scenario: Nurse enters the patient's room shortly after the medical team has made their rounds. The patient is frowning and has balled his hands into fists.

Nurse: Mr. Hernandez, are you okay? You seem distressed.

Patient: Dr. Colling wants me to stay in the hospital for two more weeks for IV antibiotics. I don't understand it. I'm feeling much better and can move around without pain. Why do I need to be here for that long?

Nurse: I know that staying here longer is disappointing. You have a bad case of cellulitis on your leg that has spread quite far. That takes a long time to heal.

Patient: My leg is starting to look better. Why can't they switch me to an oral medication?

Nurse: In my experience, cellulitis is challenging to treat. IV antibiotics are stronger than oral ones because the medication goes directly into the bloodstream.

Patient: Oh, I didn't realize that. But I really can't stay here that long. I need to get back to work, and I help my mom out a lot. She doesn't drive anymore, you know. She lives alone, and I don't like her being alone for so long.

Nurse: Oh, I do understand that won't be easy. Did you discuss any of these concerns with Dr. Colling?

Patient: No, he just seemed too busy today.

Nurse: Well, why don't I call him and ask him to stop by again later? We can explain your situation and see if there are any other options.

Patient: Thank you. I would appreciate it. Can you help me talk to him? He makes me nervous.

Nurse: Of course I will.

Scenario follow-up: Dr. Colling came and spoke with Mr. Hernandez. When he realized the issue, he offered an additional treatment option, going home with a central line and having home health come daily to give the IV medication. While he was unwilling to have Mr. Hernandez return to his construction job due to the danger posed by having a central line in place, he agreed that Mr. Hernandez could provide his usual care for his mother.

The process of **shared decision-making (SDM)** empowers patients to actively make decisions and state their needs and limitations in conjunction with healthcare providers rather than passively receive care (Skelly et al., 2020). SDM should involve clear, comprehensible education and encouragement of patients and their families to be open and accurate about their abilities and skills in self-management (Nibbelink & Brewer, 2018). For example, sending a patient home with the expectation that they will give themselves shots mandates that the nurse supply thorough education about the process and evaluate the patient's ability to perform the task satisfactorily. Failure to do so sets up the patient for a poor healthcare outcome.

The Agency for Healthcare Research and Quality (AHRQ) has developed a SHARE decision-making model to guide SDM. Many of the components are similar to those of other decision-making models; however, the SHARE model emphasizes the inclusion of the patient in the process (AHRQ, 2023a; Skelly et al., 2020). As Figure 15.10 shows, the SHARE model is a five-step process.

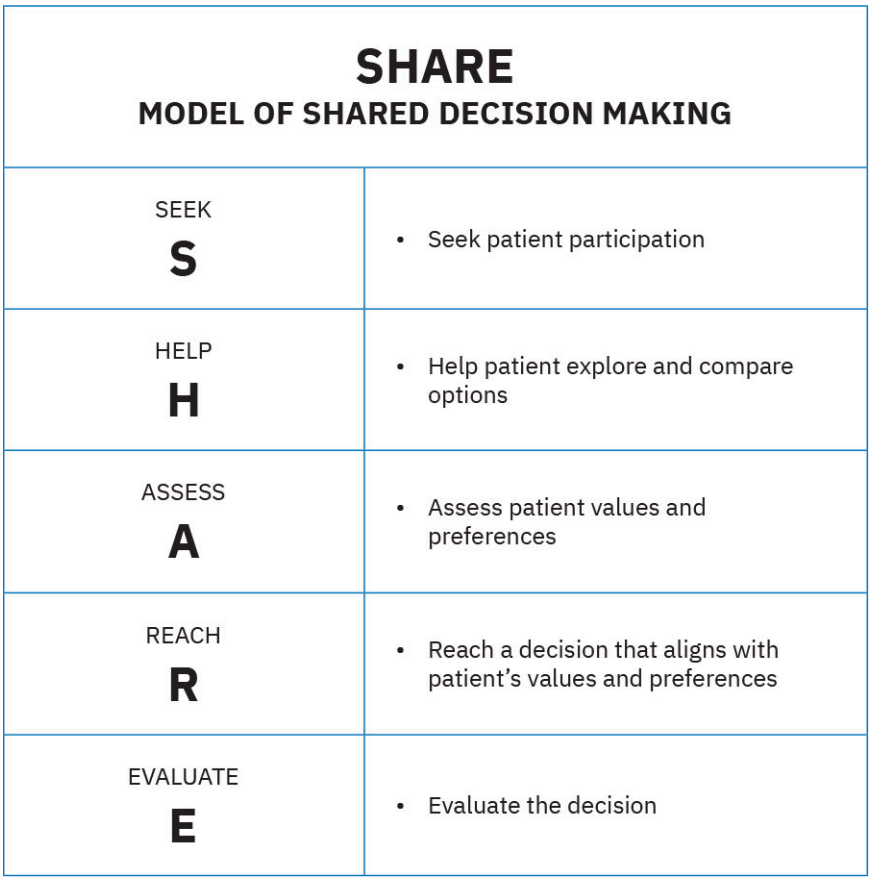

FIGURE 15.10 The SHARE model is one strategy to ensure patients are involved in the EBDM process. (credit: attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

The AHRQ offers extensive resources for using the SHARE model, including a video showing the SHARE Approach (https://openstax.org/r/77SHAREAppVideo) in action.

Best Evidence

One of the pitfalls nurses can fall into when seeking best evidence is an unconscious bias toward information that aligns with their clinical experience, regardless of the evidence for it (Nibbelink & Brewer, 2018). Locating high-quality evidence can be difficult and time consuming, but systematic and metareviews are excellent starting points (Pubrica, 2020). As discussed previously, these reviews are generally at the top levels of evidence hierarchies. Because they are rigorous in their methodology and provide an in-depth exploration of a given topic, they can be both a high-quality and quick resource—a one-stop shop, so to speak, of the best evidence compiled from many other researchers.

Clinical Expertise

Several components make up **clinical expertise**. In addition to critical thinking, it includes a nurse's ability to recognize patterns based on their experiences over time and to evaluate those patterns and extrapolate alternative solutions or appropriate interventions based on similar but not identical experiences (Nibbelink & Brewer, 2018). Nurses must recognize their limitations and know when to ask for assistance if they do not have the clinical experience to make an informed clinical decision (Nibbelink & Brewer, 2018). Asking for help is never a flaw. It is a

sign of a strong, self-confident nurse who recognizes their limitations, and it protects their patients—and their nursing license.

It has been previously mentioned that a nurse's ability to make decisions about most issues becomes almost second nature. Nurses make many daily clinical decisions that become part of the muscle memory of nursing—practically automatic, like driving a car or riding a bike. However, other situations require reflection to determine the best course of action. Even with the decisions that nurses make every day, they must guard against **cognitive bias**: an unintentional error in judgment due to incorrect thought processes (The Joint Commission, 2016; Thirsk et al., 2022). Nurses must be aware of their own biases and seek to avoid them by engaging in regular self-reflection, particularly in situations that felt uncomfortable. Also, nurses must be willing to change, as nursing, medicine, and health care are constantly changing.

Clinical Decision Support and the Institute for Healthcare Improvement (IHI)

Due to the time-consuming nature of EBR and the structural difficulties associated with changing the practices of all healthcare workers within an agency, several **clinical decision support tools** are available to help nurses and other healthcare professionals access information about best practices more quickly (Pubrica, 2020). These tools combine evidence about specific best practice into an organized body of knowledge that is easily accessible. Many are electronic and integrated into electronic medical records or point-of-care informatics tools to enhance decision-making (HealthIT, 2018). Others are integrated into care pathways in different ways. The key advantage is that they provide a structured approach that is reproducible and repeatable across practice settings and patients.

The Institute for Healthcare Improvement (IHI), a not-for-profit organization, has been at the forefront of developing clinical decision support tools, particularly care bundles, to allow all patients in all environments to have the same high-quality level of care. For over three decades, the IHI has been working to improve the quality and safety of health care, both in the United States and globally (IHI, 2017).

Evidence-Based Practice Bundles

The **evidence-based practice bundles** are like nursing toolkits: small sets of evidence-based interventions that are used together to improve patient outcomes. They are rooted in EBR and have been shown to positively impact patient care (IHI, 2017). The IHI pioneered these bundles to address some common causes of hospital-based morbidity and mortality, such as ventilator-associated pneumonia (VAP), central line–associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections, and surgical site infections. The use of bundles has expanded to other groups and even individual institutions. Bundles do not include all possible interventions for given situations or conditions; instead, they recommend a subset of highly effective interventions easily integrated into most hospitals (IHI, 2012a). All elements of a bundle should be used regardless of the specific situation: for example, a bundle for patients on ventilators in the intensive care unit should be used for all such patients, and all the components that make up the bundle should be used each time. Otherwise, the staff cannot count the bundle as complete. It is an "all-or-none measurement" (IHI, 2017).

REAL RN STORIES

New Bundle Implementation

Nurse: Becky, RN
Clinical setting: ICU
Years in practice: 20
Facility location: Rural community hospital in Tennessee

We introduced the ICU Liberation bundle a few years ago. The ICU Liberation bundle has six parts—A to F—designed to improve our outcomes. My ICU is small, with many nurses entirely set in their ways, so it was an uphill struggle. We were asked to do things differently than we ever had. Some of us were intrigued because we had the opportunity as nurses to be part of a huge change in the treatment of our patients.

Six of us volunteered to be champions of the bundle for our unit, each taking one piece of it. The pieces of the bundle include A (assess, prevent, and manage pain), B (both spontaneous awakening trials and spontaneous

breathing trials), C (choice of analgesia and sedation), D (prevent and manage delirium), E (early mobility and exercise), and F (family engagement and empowerment). I took piece F: family engagement and empowerment.

My part of the bundle encouraged a deeper relationship with the patient's family. So often in the ICU, we had limited visitation and patient disruption to a minimum. By implementing the bundle, we encouraged families to be involved and present with patients in their rooms during rounds and many aspects of patient care. We could still ask family members to leave if it was clear they were bothering the patient or disrupting care, but the bundle reminded us to view families as our partners. Their presence usually helped the loved ones in our care. I learned all I could about my part of the bundle and taught it to the other nurses on the unit. While it brought many changes, implementing the ICU Liberation bundle helped our patients a lot. I am glad we did it.

Institute for Healthcare Improvement Ventilator Bundle

The IHI collaborated with thirteen Veterans Health Administration (VHA) ICUs to develop a bundle to decrease the risk of VAP in ICU settings. VAP is a healthcare-associated infection (HAI)—it is caused by medical treatments—that occurs as a new finding after a patient has been placed on a ventilator. Characteristics of VAP include abnormal chest x-ray findings, fever, leukocytosis (elevated white blood cell count), and thick tracheal secretions (Roch et al., 2017). Ventilator-associated pneumonia is the leading cause of death from HAIs. For patients who survive, it often increases the length of stay in the ICU, the length of time on the ventilator, and the overall costs of care (Roch et al., 2017). One incidence of VAP causes an estimated $40,000 in additional healthcare costs (IHI, 2012a).

The VAP bundle includes five elements of care (IHI, 2012a):

1. Maintain the head of the bed elevated between 30° and 45°.
2. Perform daily sedative interruption and assessment of readiness to extubate.
3. Provide peptic ulcer prophylaxis (such as a proton pump inhibitor) to intubated patients.
4. Provide deep vein thrombosis prophylaxis (such as sequential compression devices) on the lower legs.
5. Provide daily oral care with chlorhexidine.

Using a daily checklist, maintained at the bedside, in the patient's paper chart, or in their electronic health record ensures completion of these steps.

Even though VAP continues to be a problem in health care, the VAP bundle has been proven to reduce the incidence of VAP by 45 percent or more, resulting in improved patient outcomes and lower overall costs (Taplitz et al., 2017).

LINK TO LEARNING

To learn more about VAP and the Ventilator bundle, explore this How-to Guide (https://openstax.org/r/77VAPHowToPrev) from IHI.

Institute for Healthcare Improvement Central Line–Associated Bloodstream Infection Bundle

A central line is a catheter with a tip that ends (terminates) in a major vessel such as the aorta, superior vena cava, or femoral vein. While their use has become increasingly common in the last few decades, they are also the source of many HAIs and a great contributor to hospital-associated mortality rates, In the early 2000s, CLABSIs caused over 30,000 deaths yearly in U.S. hospitals (IHI, 2012b). In response, IHI developed a bundle to reduce the number of CLABSIs in the hospital setting; the bundle includes hand hygiene, barrier precautions, optimal catheter site selection, and daily review of need. Hospitals that have implemented this bundle have seen up to a 65 percent decrease in their rates of CLABSIs (IHI, 2012b; Taplitz et al., 2017).

LINK TO LEARNING

The AHRQ provides guidelines to prevent CLABSIs (https://openstax.org/r/77CLABSIPrevGui) in their CLABSI bundle.

Surviving Sepsis Campaign and Bundles

Sepsis is a life-threatening inflammatory condition in which the body starts attacking its tissue and organs in response to an infection. Historically, the fatality rate of sepsis has been very high (van der Poll & Wiersinga, 2017). In the early 2000s, the IHI began to work on the Surviving Sepsis Campaign (SSC) in conjunction with the Society of Critical Care Medicine (SCCM) and the European Society of Intensive Care Medicine (ESICM) (SCCM, 2021). (SCCM and ESICM have subsequently taken over the SSC entirely.) Two sepsis-related bundles were initially developed from their work. However, as of the 2020 revision of the SSC guidelines, only one is being used: the Hour-1 bundle, for initial resuscitation for sepsis and septic shock (SCCM, 2021).

The Hour-1 bundle should be initiated immediately upon recognition of sepsis or septic shock (SCCM, 2021). The hour begins when providers recognize sepsis or septic shock (SCCM, 2021). While all components may not be completed within an hour, they should begin in the first hour. There has been some pushback concerning using this bundle, particularly from emergency room physicians concerned about unnecessary antibiotic treatment. However, the data strongly suggest that the sooner treatment begins, the better chances patients have of survival (SCCM, 2021).

LINK TO LEARNING

Here are resources produced for the Surviving Sepsis Campaign (SSC):

- This video about the SSC (https://openstax.org/r/77Hour1VidHelp) illustrates how practitioners should use the Hour-1 bundle to help patients survive sepsis.
- This Hour-1 bundle infographic (https://openstax.org/r/77Hour1Infograp) illustrates how to provide initial resuscitation for sepsis and septic shock.

15.3 Quality Improvement in Nursing

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Understand the role of the quality improvement nurse
- Identify benefits of quality improvement in nursing practice
- Recognize different quality organizations for nursing practice

In 2016, an earth-shaking article noted that if medical errors were classified as diseases are, they would be the third-largest cause of death in the United States (Makary & Daniel, 2016). It is estimated that there are over 110 safety events for every 1,000 hospitalizations. Over 11 percent of hospitalized patients will experience such an event, adding thousands of dollars to patient stays and costing too many lives (Finkelman, 2022).

For healthcare providers, the core focus of quality improvement is to decrease errors (Sherwood & Barnsteiner, 2022). An **error** is a failure to carry out a planned healthcare action or to complete the action correctly, with the result that the patient is harmed or experiences a less favorable outcome. An **adverse event** is one in which a patient is harmed or killed due to care that is being delivered, not to their underlying health condition. A **preventable adverse event** is related to human error, such as errors of diagnosis, medication administration, treatment delays, and lack of follow-up (Sherwood & Barnsteiner, 2022). A **sentinel event** is an adverse event that happens in a healthcare setting, based on an accident (such as fall) or the actions of healthcare workers and results in patient death or permanent disability. Note that deaths related to the progression of a patient's illness are not sentinel events.

The Institute of Medicine defines quality health care as the provision of health services that improve the chances of preferred outcomes, decrease the chances for error, and are consistent with current evidence and knowledge. **Quality improvement (QI)** is a framework used to improve patient care and outcomes systematically and continuously. It incorporates the expectation that no matter how good a system's quality is, it can be improved upon; thus, quality improvement is a continuous, ongoing endeavor.

The American Nurses Association (ANA) considers quality improvement, like evidence-based practice (EBP), to be one of the five core competencies of all healthcare professionals (ANA, 2021). It also expects all nurses to meet the

standard of quality of practice. Quality of practice includes several competencies focused on performing safe, effective, efficient, and person-centered care; in addition, several other competencies are directly related to QI in nursing and health care overall (ANA, 2021). They include the following:

- incorporating EBP into practice to improve outcomes
- enhancing nursing through creativity and innovation
- recommending strategies to leadership to improve quality of nursing practice
- engaging in data collection to monitor care quality
- participating in QI initiatives
- collaborating with other disciplines to implement QI

These standards apply to all nurses at all levels of practice. Nurses are responsible for consistently improving their practice and patient care (Finkelman, 2022). In fact, all nurses and healthcare providers must actively engage in ongoing and continuous improvement projects to improve health care for our patients and communities. Hospitals also have standards of practice for nursing staff to encourage QI at the local level.

LINK TO LEARNING

Quality improvement is a huge undertaking, continuously occurring across all of medicine. The Institute for Healthcare Improvement (IHI) provides a video on the evolution of QI in health care (https://openstax.org/r/77EvolutionQI) and a quick snapshot of QI, including many of the concepts covered in this section.

Role of the Quality Improvement Nurse

As with EBP, QI happens both with individual nurses in their practice and at the level of larger systems. Most healthcare systems today have a QI program office that manages ongoing QI systemwide. Often these are staffed with **quality improvement (QI) nurses**—experienced RNs or advanced practice nurses with a special interest in QI who, by receiving extra education and passing a subject-matter examination, may have undergone the process of **certification** to become an expert in QI. Quality improvement nurses work with individual nurses, unit leadership, and facility leadership to ensure consistent quality related to current policies and procedures; they engage in the QI process across the agency, department, or facility.

LINK TO LEARNING

This video features a QI nurse at Cincinnati Children's (https://openstax.org/r/77QINurseCinChi) hospital. Her story provides an example of how nurses move into QI through their nursing practice and interest in quality and safety.

Quality Assurance

One component of a quality program is **quality assurance (QA)**, the provision of oversight to ensure that, across a department or agency, the staff is receiving education and support to maintain the current quality standards. Quality assurance nurses review the data on errors and poor patient outcomes at the facility. They look for trends and create opportunities to improve nursing care by identifying where additional education, staffing, or equipment are needed or where new policies and protocols should be implemented. Their work seeks to improve patient outcomes and increase the standard of care by relying on data for problem identification and EBP for interventions.

Quality Assurance and Performance Improvement Programs

Quality Assurance and Performance Improvement (QAPI) is the dual use of QA and performance improvement (PI), specifically in post acute care environments such as rehabilitation centers and nursing homes. The Affordable Care Act (2010) mandated QAPI for all post acute healthcare environments, and the necessary roles are often filled by RNs. The Centers for Medicare and Medicaid Services (CMS) developed the framework to reinforce legal statutes regarding how these facilities perform and how they are accountable for QAPI activities (CMS, 2021). Through the American Association of Post-Acute Care Nursing, nurses seeking to be a QAPI subject-matter expert can earn a QAPI certification.

Quality Improvement Initiatives for Nurses

Nurses are involved in quality improvement through a number of initiatives. For example, the **Quality and Safety Education for Nurses (QSEN)** competencies provide a bedrock for nursing students, socializing them into a culture of continuous quality improvement. QSEN is discussed further in a later portion of this section. Another QI initiative is Lean, a strategy of quality improvement designed to remove unnecessary steps from healthcare processes, with the expectation that the healthcare staff will be able to provide higher levels of care when unnecessary processes are removed. The **Plan-Do-Study-Act (PDSA)** is another QI initiative as discussed in Clinical Safety and Procedures (QSEN): QSEN Competency: The Plan-Do-Study-Act Cycle.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: The Plan-Do-Study-Act Cycle

Disclaimer: Always follow the policies and procedures of your agency.

The Plan-Do-Study-Act (PDSA) cycle is one of the most used QI initiatives (Agency for Healthcare Research and Quality [AHRQ], 2020). The cycle involves four steps: developing a plan (Plan), running a test (Do), analyzing the results and comparing them to the desired results (Study), and making a plan for the next step (Act). Figure 15.11 shows how the PDSA cycle can be used sequentially—modifying the plan at the end of each cycle based on what was learned, and then running it again until a strategy is successful (AHRQ, 2020; D'Eramo, 2022).

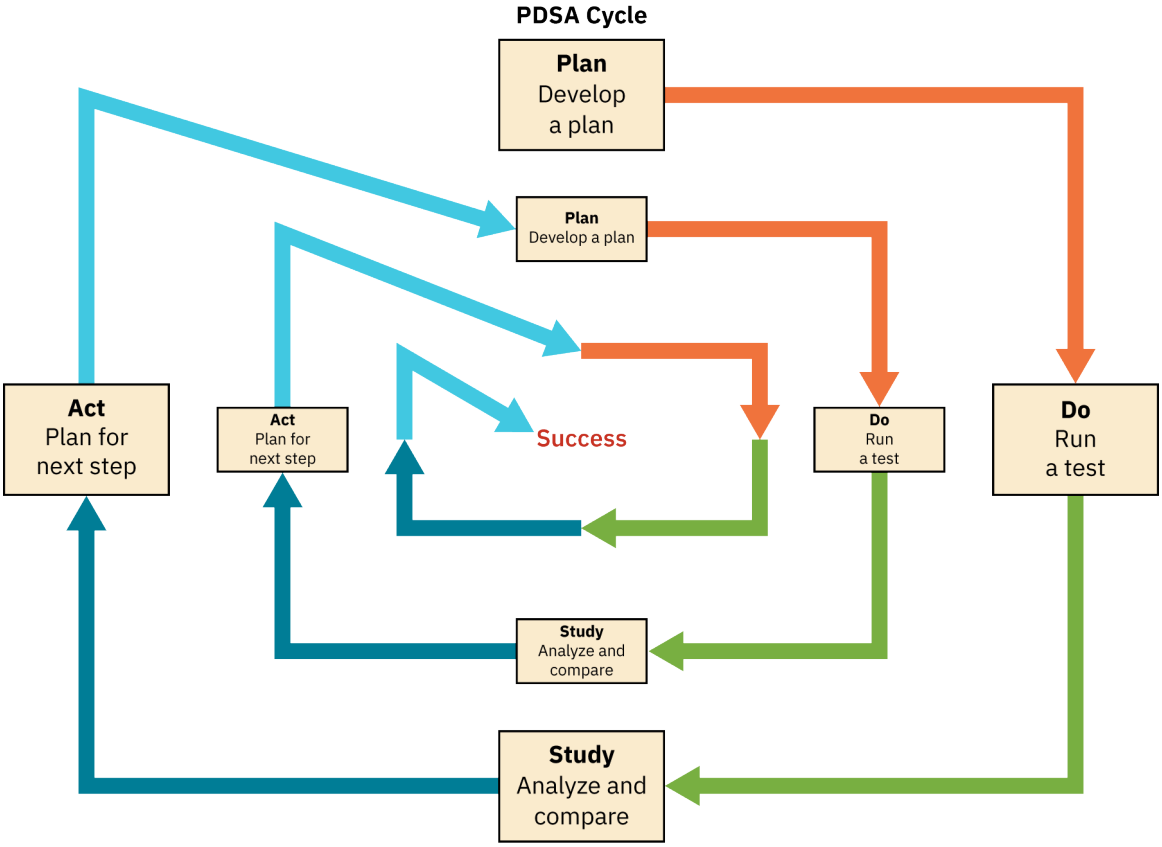

FIGURE 15.11 This sequence of the PDSA cycle shows how it can be used multiple times, with actions modified sequentially until they fulfill the needs of the improvement project. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Problem Resolution

When problems arise, QI nurses are frequently involved to determine the cause of the problem and potential ways to prevent it from arising again in the future. For example, after a medication administration error, a QI nurse might be called in to investigate the issue. This investigation may include a **root cause analysis**, which is a structured process to determine factors that underlie errors and adverse events (AHRQ, 2019). If the root cause is determined

to be a systemic issue, the QI nurse may develop a QI intervention to deal with the problem. If it is unique to the nurse who made the error, the QI nurse may instead be involved in retraining that nurse to prevent the error from reoccurring.

Benefits of Quality Improvement in Nursing Practice

Quality improvement should improve patient outcomes. The AHRQ notes that healthcare quality includes these six domains (AHRQ, 2022):

- safe
- effective
- patient centered
- timely
- efficient
- equitable

Quality improvement in nursing practice is always engaged in solving problems or bettering outcomes. As such, QI activities should improve one or more of these domains in an effort to fix broken processes or integrate new practices that are based in local reality combined with the best evidence (Grys, 2022). Further, QI activities should offer measurable outcomes to clearly show their value (or their failure to achieve the expected value) (O'Donnell & Gupta, 2023).

Maximizes Use of Resources

Resources in health care include time, staff, equipment, facilities, and other tangible and intangible resources used to provide patient care. When professional nurses are trusted and included in QI efforts, processes affecting resource allocation and use typically become more effective. Nurses know what they need and do not need in their supply cabinets; when performing procedures, they know how many staff they need on different shifts; and they know how much time they spend performing their daily tasks. Using nursing knowledge to develop QI initiatives can allow for realistic identification of necessary resources versus superfluous ones. Such engagement can ensure that nurses have the resources they need available when they are necessary and discourage the presence of unnecessary ones.

Promotes Innovation of Team Members

The development of new ideas, methods, and procedures, or **innovation**, is where the future of quality improvement lies. Nurses are perfectly positioned as healthcare innovators thanks to their direct role in patient care and advocacy. They see processes in action daily. Engaging frontline nurses in addressing quality concerns and performing QI activities has the added benefit of encouraging innovation among staff members and during staff development. Quality improvement should encourage nurses to improve their practice and discuss their concerns with leadership and management (Drew & Pandit, 2020). It provides opportunities for nurses on the front lines to clarify their understanding of what causes problems and engages them in developing solutions.

Reduces Unnecessary Tasks

Nurses perform many tasks daily, but these tasks are often redundant or not performed efficiently. The QI method of Lean helps to find and reduce waste: tasks or behaviors that have no value for the system (Kelly, 2022, O'Donnell & Gupta, 2023). For nurses, waste can be found in a variety of locations, such as unnecessary transportation of patients or duplicate tasks; waste also happens when units are laid out inefficiently, necessitating additional time and motion to gather items, or when people are unable to work at the height of their licenses and abilities. Quality improvement strategies can be used by and for nurses to streamline their work, resulting in increased time at the bedside and higher-quality care (Kelly, 2022).

Quality Organizations for Nursing Practice

Nurses can turn to several resources for answers to QI questions or guidance for their practice. As previously mentioned, the ANA provides standards for quality in nursing practice. Additionally, most specialty professional nursing associations, such as the Oncology Nursing Society, have some information relevant to quality or QI on their websites. Nurses can also use several other agencies and programs to advance the quality of their practice, including national and international organizations.

American Nurses Association

The ANA is the primary overarching organization for nurses in the United States. The ANA establishes the Scope and Standards of Practice and Code of Ethics for all RNs and advanced practice nurses, lobbies for nurses with government, seeks to ensure that nurses have safe and ethical workplaces, provides continuing education, and establishes the goals of professional nursing (ANA, 2017). The ANA further provides position statements to help nursing practice and supports nurses to lead change (ANA, 2017). Though affiliated with other specialty nursing organizations, such as the American Association of Critical-Care Nurses, the ANA remains the body that represents all nurses no matter their specialty or job location. The ANA also manages the Nursing Alliance for Quality Care, an organization that seeks to improve healthcare quality among nurses and agencies alike.

Agency for Healthcare Research and Quality

The AHRQ has been discussed several times previously in this text. It is the U.S. Health and Human Services agency tasked with improving the quality, safety, efficiency, and effectiveness of health care for everyone (Finkelman, 2022). The agency provides extensive toolkits and best practice evidence for healthcare professionals at all levels.

For example, in 2005, the AHRQ and the Department of Defense developed the TeamSTEPPS curriculum to improve communication and collaboration within interprofessional healthcare teams in various settings. TeamSTEPPS is now in its third version, TeamSTEPPS 3.0 (AHRQ, 2023b). TeamSTEPPS has been released into the public domain so that all medical agencies can use it to improve their collaboration and team management, regardless of their ability to pay for it (AHRQ, 2019).

Magnet Recognition Program

The American Nurses Credentialing Center has created the Magnet Recognition Program to recognize healthcare organizations that provide high-quality nursing care. Magnet recognition requires several components, including involvement in research, EBP, and QI (Polit & Beck, 2021). There are five components to the Magnet model:

- transformational leadership
- structural empowerment
- exemplary professional practice
- new knowledge, innovation, and improvements
- empirical quality outcomes

The program encourages and rewards hospital systems that place emphasis on QI and actively recognize nurses engaging in QI projects (Finkelman, 2022). Since 2014, one requirement for hospitals seeking Magnet status has been the inclusion of clinical nurses who perform leadership roles on collaborative teams and in shared decision-making (Hughes-Rease, 2015). Today, the ANA also encourages using evidence-based team strategies, such as TeamSTEPPS, to improve patient outcomes and care quality (ANA, 2021).

The Joint Commission

The Joint Commission is an agency that offers accreditation, or official recognition, to membership hospitals that meet their quality and safety standards (Sherwood & Barnsteiner, 2022). It also provides annually updated national patient safety goals for many hospital settings. These goals are set for areas that are considered at risk and include guidance for process and QI initiatives that member agencies can use. Other goals are available for settings such as nursing care centers, behavioral health clinics, ambulatory care centers, and critical access hospitals. Additionally, to promote collaboration between disciplines, The Joint Commission requires its member agencies to have codes of conduct defining appropriate and inappropriate communication and behavior between team members and disciplines (Sherwood & Barnsteiner, 2022).

National Coordinating Council for Medication Error Reporting and Prevention

The focus of the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) is safe medication use and awareness of medication errors (NCCMERP, 2023). The council promotes open communication, error reporting, and QI to prevent medication errors. It uses national reporting systems to evaluate the root causes of medical errors and develop recommendations to prevent such errors. A senior policy adviser for the ANA sits on the council to lend the voice of nurses to policy development.

Quality and Safety Education for Nurses

Quality and Safety Education for Nurses was created in 2005 as a response to the demand from nursing leaders for

an increase in nursing safety. The goal of the QSEN project, which was initially funded by the Robert Wood Johnson Foundation, was to discover a way to change nurses' mental outlook and education. On the topic of nursing education, QSEN identifies four goals (Sherwood & Barnsteiner, 2022). Student nurses should be taught to:

- enter their nursing practice expecting to be involved in inquiry and QI
- use and engage in evidence-based practice and research
- consider outcomes and critical incidents from a system's perspective
- work effectively in interprofessional care management teams

The QSEN model has also adopted the essential competencies offered by the Institute of Medicine as critical for nursing practice: patient centered, evidence based, teamwork and collaboration, QI, safety, and informatics (Sherwood & Barnsteiner, 2022).

CLINICAL JUDGMENT MEASUREMENT MODEL

Generate Solutions: Understanding the Differences between Research, Evidence-Based Practice, and Quality Improvement

There are several similarities between research, EBP, and QI. Indeed, they are complementary endeavors that build off each other. However, it is important to recognize the differences between them to use them most effectively in practice. Table 15.3 summarizes these differences.

Activity	Qualities
Research	Purpose: Generate new knowledge or validate existing knowledge Methods: Scientific method Process: 1. Begins with a question about an event and proceeds systematically 2. Data are collected 3. Results are disseminated as evidence informing an associated body of knowledge
Evidence-based practice	Purpose: Translate evidence into practice and integrate it into clinical decision-making to improve safety, quality, and systems Methods: PICOT, etc. Process: 1. Begins with a clinical question and proceeds systematically 2. Evidence is collected, appraised, and integrated into a practice change 3. Results of the practice change are evaluated and disseminated
Quality improvement	Purpose: Improve processes or patient outcomes Methods: Lean, PDSA, etc. Process: 1. Begins with an outcome that needs to be improved and proceeds systematically 2. Identifies how improvement will be measured and plans interventions 3. Collects baseline data before interventions and collects data again afterward 4. If improvement occurs, determines how to sustain the improvement over time

TABLE 15.3 **Differences between Research, EBP, and QI** (Sources: Grys, 2022; Hain, 2017.)

15.4 Nursing Standards of Delegation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify nursing standards for delegation
- Recognize nursing principles for delegation

The act of requesting staff members to perform tasks or procedures that are outside of their normal job but within the limits of their job description is called **delegation**. Nurses delegate tasks and procedures to other staff members daily to cope with the constantly changing needs of patients in an active healthcare setting. Per the National Guidelines for Nursing Delegation, delegation happens when a registered nurse (RN) asks either a licensed practical nurse (LPN)/licensed vocational nurse (LVN) or **assistive personnel (AP)**—such as nursing assistants, certified nursing assistants, patient care technicians, or surgical technicians—to perform a task on the nurse's behalf. RNs do not delegate to other RNs. If an RN asks another RN to perform tasks for them, it is considered a transfer of care, and the new RN becomes responsible for the patient (American Nurses Association [ANA]-National Council of State Boards of Nursing [NCSBN], 2019). While charge nurses, managers, and supervisors give assignments to other RNs, this is not considered delegating but rather assigning job tasks.

Delegation is a critical nursing skill that reflects directly on the nurse doing the delegating (NCSBN, 2016). Inappropriate delegation can cause harm to a patient and result in disciplinary action for the nurse who sets it up. Delegation is governed by nursing practice standards from the ANA, nursing practice guidelines from the ANA and the NCSBN, local and state laws regarding delegation, and individual agencies or facilities (NCSBN, 2016). All nurses must understand what they can and cannot do per the relevant guidelines and laws.

Nursing Standards for Delegation

The ANA offers basic delegation competencies in two nursing standards:

Standard 5: Implementation

- RNs can delegate based on the needs of the healthcare consumer.
- RNs can delegate "after considering the circumstance, person, task, direction or communication, supervision, evaluation, as well as the state nurse practice act regulations, institution, and regulatory entities while maintaining accountability for the care" (ANA, 2021, p. 82).

Standard 12: Leadership

- RNs demonstrate "authority, ownership, accountability, and responsibility for appropriate delegation of nursing care" (ANA, 2021, p. 97).

Consider those statements for a moment. They emphasize the idea of accountability: an RN who delegates a task to another staff member is responsible for that choice and answerable for its consequences.

Five Rights of Nursing Delegation

When an RN designates a job to another staff member (the **delegatee**), that RN is still responsible for ensuring the job is performed appropriately (ANA-NCSBN, 2019). The five "rights" of nursing delegation specify when and how to delegate nursing duties (ANA-NCSBN, 2019): right task, right circumstance, right person, right communication, and right supervision. Each of these rights should be considered when delegating a task to another staff member.

Right Task

Any activity delegated to a delegatee must be included in their job description or established through the written policies and procedures of the given setting (ANA-NCSBN, 2019). However, delegated tasks can fall outside of the delegatee's normal duties. Agencies must ensure that written policies or procedures describe the abilities and limitations of different AP (NCSBN, 2016). Facilities must provide training for any skilled competencies (such as drawing blood or using equipment) that AP may be required to perform.

Right Circumstance

Patients must be in stable condition with expected outcomes before a nurse can delegate care responsibilities (ANA-NCSBN, 2019). If the patient's condition changes, the RN must reassess the patient to determine whether the delegation is still appropriate. For example, it is very unusual for critical-care areas to staff large numbers of AP and LPNs/LVNs because they are limited in how much assistance they can provide to unstable patients without direct, constant supervision.

Right Person

The RN is responsible for ensuring the delegatee has completed any required education and has the necessary competencies to perform the care (ANA-NCSBN, 2019). For example, a staff member must be educated in how to

use patient transfer equipment, such as ceiling lifts for moving patients between surfaces, before they can be delegated tasks involving that equipment. An RN asking an AP to transfer a patient to a stretcher would have to be sure the AP had received the necessary education and was competent to perform the transfer when making the request.

REAL RN STORIES

Delegating Care

Nurse: Mai C., RN
Clinical setting: Inpatient psychiatric unit
Years in practice: 30
Facility location: Urban psychiatric facility in Tennessee

I remember one time when I was working the night shift. We did not often have blood draws ordered on the night shift, but that night, two of them had to be completed in the early morning. I was the charge nurse and was making patient care assignments for the unit. I delegated the blood draws to one of our AP. The AP was fairly new but had been with us long enough that I thought he had completed all his competencies.

At about 2 a.m., he came to me to tell me that he could not do the blood draws because he had not been checked off on them by our lab. All staff members had to receive education and perform three successful lab draws in our outpatient lab before they could draw blood on the unit. Since he had started on night shift and never worked on days, he had not done his blood draws for check-offs.

I found another AP who could do the blood draws that night. Then I spoke with our nurse manager to be sure that the AP had the opportunity to do his check-offs in the outpatient lab one morning before he left work. The next time I asked him to draw blood labs, he could without difficulty.

Right Communication

When RNs delegate to other employees, they must provide appropriate instructions, and the delegatee must have the opportunity to ask questions (ANA-NCSBN, 2019). Clear communication must be provided to ensure the delegatee understands the specifics of the assignment. The delegatee must also agree to perform the assignment. The delegatee cannot make any decisions regarding care changes without consulting the delegating RN (NCSBN, 2016).

Right Supervision

The RN must provide supervision to ensure the activity is performed correctly and evaluate patient outcomes. The delegatee must communicate patient information accurately to the RN. If the performance of the task is inadequate, the RN must intervene as necessary. Consider this example. An RN has asked an AP to take a patient's vital signs. When the AP gives the information to the RN, the patient's blood pressure is substantially higher than expected, representing a considerable alteration over previous readings. The RN then returns to the patient's room to verify the elevated blood pressure by taking it themself.

Delegation versus Assignment

There is a difference between being delegated a task and being given a patient assignment. An **assignment** consists of the routine activities and procedures that are part of a staff member's normal job and taught in either a degree or certificate program or as part of on-the-job training (ANA-NCSBN, 2019). RNs may still be responsible for supervising other staff as they complete their assignments, but not to the same degree as with delegation. For example, an LPN/LVN with a patient assignment who gives their patients medication, takes their vitals, draws their labs, and documents their responses to care is functioning within the capacity of their degree and scope of practice; they should be able to complete these tasks with limited to no supervision. In contrast, an LPN/LVN whose patient goes into respiratory arrest would reasonably expect a code team to manage the patient's care when they arrive. With the proper supervision, however, the code team could delegate a task to the LPN/LVN, such as providing bag-mouth ventilation—that is, helping the patient breathe by squeezing a bag connected to an oxygen supply and the patient.

Principles for Delegation

The ANA and NCSBN have developed principles for delegation. These fundamental principles are strategies to protect the patient's well-being, health, and safety, and they must be considered along with the five rights of delegation discussed previously (ANA, 2013). They include the following:

- While elements of nursing care may be delegated, the nursing process cannot.
- Decisions to delegate must be based on the nurse's judgment and consideration of the patient's complexity and care needs and the ability of the RN to provide appropriate supervision to the AP.
- Delegation should always be respectful of both the delegate and patient.

LINK TO LEARNING

The ANA has a booklet that explores the principles of delegation (https://openstax.org/r/77DelegBooklet) and provides a decision tree to assist nurses in knowing when delegation is appropriate.

Authority

Facilities use the nursing scope and standards of the ANA and the state's nurse practice acts to determine the authority and practice capacity of RNs within their agencies (ANA-NCSBN, 2019; Barrow & Sharma, 2022). Under this authority, nurses are expected to complete their job duties. These duties include delegating tasks to AP and LPN/LVNs based on the needs of the patient population, the stability of training, the training of delegatees, and the nurse's ability to provide appropriate supervision.

Accountability

Nurses are legally and ethically liable for their patient care actions, known as **accountability**, including decisions to delegate activities to APs and LPN/LVNs. Even when care is delegated to other personnel, the RN remains accountable for the care provided. If nurses are concerned about delegating a task, they should perform it themselves (ANA-NCSBN, 2019). Once a delegate has accepted the responsibility of a delegation, they are accountable for completing that activity correctly, timely, and per facility protocol (ANA-NCSBN, 2019).

Responsibility

All RNs are responsible for acting within their states' nursing practice acts and performing reliable and dependable patient care tasks (Barrow & Sharma, 2022). When delegating tasks, RNs are responsible for providing high-quality communication and clearly explaining the delegated responsibility. Further, they are responsible for ensuring that delegated tasks are completed appropriately (ANA-NSCBN, 2019).

Delegatees are responsible for delegated activities they accept and should only accept activities for which they have been appropriately trained (ANA-NSCBN, 2019). They are also responsible for maintaining their competencies—reviewing and renewing educational modules or skill check-offs on an ongoing basis—for activities they may be required to perform if delegated. Figure 15.12 outlines the responsibilities of all parties involved in the delegation of nursing tasks.

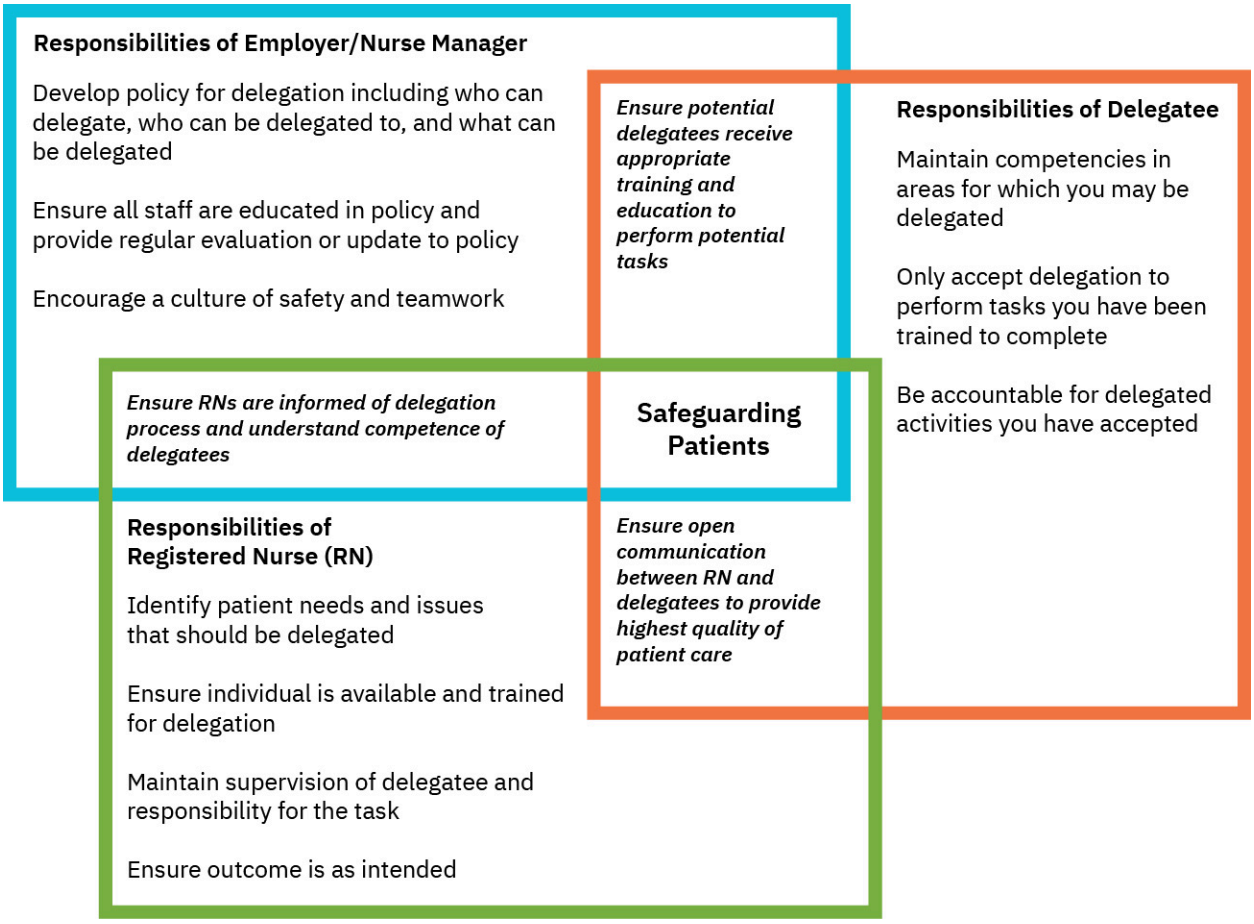

FIGURE 15.12 This Venn diagram shows how the responsibilities of the employer, nurse, and delegatee are different and where they overlap (ANA-NCSBN, 2019). (credit: attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

15.5 Collaborative Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define collaborative practice
- Understand the components of an effective team structure
- Recall core competencies for collaborative practice

A patient hospitalized for four days may meet fifty different healthcare providers, including a variety of doctors, nurses, assistive personnel (AP), and many additional staff members (O'Keefe, 2020). Each member of this large team must **collaborate**, or work effectively together, to ensure the patient has the best outcomes possible. No matter a nurse's role or working environment, every nurse will collaborate with other healthcare workers, stakeholders, patients, and their families. Collaboration is impossible without communication. The two are inextricably intertwined.

Collaboration is so essential to nursing practice that it is the eleventh standard in the American Nursing Association's (ANA) scope and standards of practice (2021). There are several collaboration competencies expected of all RNs (ANA, 2021, p. 96):

- Work with patients and stakeholders to advocate for and make changes that improve patient outcomes and healthcare quality.
- In every interaction, treat others with dignity and respect.
- Recognize the value of what other stakeholders and professions bring to the table.
- Encourage all team members to contribute their knowledge, skills, and abilities to achieve goals.
- Describe the role of the nurse on interprofessional teams.
- Use tools and informatics to facilitate team processes while maintaining patients' dignity and respect and

following the Health Insurance Portability and Accountability Act protections to ensure their privacy and confidentiality.
- Encourage consensus and conflict management.
- Encourage team-building strategies to improve team or group performance.
- Engage with all stakeholders to develop, execute, and assess plans.
- Role model exemplary team building, leadership, and management when working with teams.

As a new nurse, it can be both reassuring and daunting to realize how important collaboration is to nursing practice. Effective collaboration improves patient outcomes and teamwork between healthcare professionals.

Definition of Collaborative Practice

A **collaborative practice**, also known as interprofessional or interdisciplinary practice, results from healthcare workers from different professions working and communicating effectively to provide patient care and improve healthcare quality and patient safety. It involves mutual respect and trust, shared decision-making, and effective working relationships (McLaney et al., 2022). It can occur between two or more individuals within the same setting, within and between disciplines, and even over hundreds of miles. Successful collaboration between physicians and nurses improves patient outcomes such as length of stay, mortality, and patient satisfaction (McLaney et al., 2022). It is also linked to increased nurse perception of quality of care.

A 2013 report by The Joint Commission noted that communication issues were the top cause of mortality related to treatment delays (O'Keefe, 2020). Also, communication was found to be the third most common cause of sentinel events. Unfortunately, many healthcare settings have long resisted open and honest communication between all staff. This is mainly because healthcare settings have historically been structured hierarchically, with physicians at the top, creating power imbalances that have negatively impacted communication and, as a result, collaboration. Nurses and other healthcare professionals avoid speaking up and calling out problems for fear of losing their job or experiencing revenge or other forms of discomfort in the workplace (O'Keefe, 2020).

LINK TO LEARNING

In 2020, as a response to infection-control issues raised by the COVID-19 epidemic, the Centers for Disease Control and Prevention (CDC), ANA, and over seventy other professional, public health, and educational organizations collaborated in Project Firstline. They aimed to improve the accessibility of infection-control education for all frontline healthcare workers. Explore the website for Project Firstline (https://openstax.org/r/77ProjFirLinWeb) to see how organizations can collaborate together to address healthcare quality.

Components of Effective Team Structure

A **team** is a coordinated group of two or more people, each with a specific role, who interact to achieve a common goal. A team structure is the makeup of a single team or a multiteam system, including identification of a team leader and other members. Healthcare teams can be small or large, all at one location or spread out (Agency for Healthcare Research and Quality [AHRQ], 2019). Their goals may be short-term goals: for example, a **patient care team** forms to provide care for a specific patient and disbands when the patient leaves the organization. In contrast, teams such as quality improvement committees typically have long-term goals.

In the case of patient care teams, team members include anyone involved in that patient's care. Members of the patient care team are accountable to each other for their actions on the team. They must stay informed and engaged in the process to ensure effective team functioning (AHRQ, 2019). When all members of a care team are present during rounds, for example, patient safety and healthcare quality increase, as does communication between nurses, physicians, and other healthcare team members (Rosen et al., 2018).

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Including the Patient and Family in Team Structure

While no patient care team can be complete without including the patient and their family, as applicable, it is often difficult to know how to involve these crucial members effectively. Try some of these strategies to encourage their participation in team processes:

- Ask how involved they want to be in the patient's care.
- Ask about their concerns before beginning discussions of their status, to ensure they can best listen when needed.
- As much as possible, speak in plain language without the use of medical jargon, and explain jargon that cannot be avoided.
- Encourage family members to ask questions.
- Provide additional education and resources for relevant information.
- Ask patients for feedback and encourage them to participate.

Patient responsibilities differ from those of clinicians. Patients are accountable for being honest and accurate when providing information, speaking up if they are concerned about a proposed plan of care, complying with a plan of care if they agreed to it, and reporting any change in their condition in a timely fashion.

(Adapted from AHRQ, 2019.)

Most nurses are members of multiple teams every time they come to work. For each of their patients, they are members of a patient care team that also includes the patient and their family, their provider or prescribing staff member, and additional providers and healthcare workers as needed. Nurses are also members of contingency teams that come together for specific, often emergent, events such as codes, disasters, or rapid response issues.

Healthy teams have a clear structure and work together to enhance patient safety and healthcare quality. High-performing teams also share some important principles that bind them together, including the following (AHRQ, 2019; McLaney et al., 2022):

- role clarity
- shared goals and vision
- mutual respect, trust, and support
- effective communication
- measurable outcomes and processes

Effective Leadership

Teams cannot hold together without effective leadership (AHRQ, 2019). Any professional member of a healthcare team can serve as the team leader if they have the knowledge and skills to achieve the team's goals (AHRQ, 2019). On the best teams, no matter who the leader is, all members are skilled collaborators adept at encouraging each other to share their expertise.

Team leaders do need to perform a few specific tasks. Leaders must ensure all members are familiar with their roles and responsibilities, set up and monitor the care plan, keep the team on task, model appropriate behavior, and hold members accountable for performing their roles (AHRQ, 2019). Leaders also need to be able to run a team meeting and ensure everyone has the opportunity to be heard. Leaders also need to be able to help members get the resources they need, provide feedback to team members, ensure a strategy to communicate is in place, and assist with conflict resolution.

Interdependent and Adaptive Interactions

Teams interact in a variety of ways. Internally, team members and their roles shift occasionally; even the leadership may change based on the group's needs (AHRQ, 2019). In a high-functioning team, the team member with the skills most closely aligned to the task at hand will often lead the team while that task is performed. Team members should be able to openly share information within a team without criticism. Regardless of who leads, each member should feel comfortable monitoring the situation and sharing their insights with the entire team, without fear of

criticism.

Team members should recognize each other's limitations and provide support when needed, each from the framework of their respective expertise (AHRQ, 2019). Teamwork failures occur when individuals fail to share information with the team, do not ask for information they need, or fail to include the patient or their family in discussions (AHRQ, 2019). Other failures occur when teams do not adequately use available resources or plan based on unavailable resources, or when individuals do not know and understand the plan or are not told that the plan has changed.

Clear Roles and Responsibilities

Each team member should perform their job on the team and trust the other members to perform their jobs (American Association of Critical-Care Nurses, n.d.). This requires team members to have clear roles and responsibilities and complementary skills that are similar enough to work well together but not identical (McLaney et al., 2022). Each member must also be aware of their role and the roles and responsibilities of the other team members. The larger the team, the more difficult it may be to manage. However, if each member is aware of their own roles and responsibilities, then ongoing team management is easier.

Desire for Common Goals

A shared vision and common goals are characteristics of high-performing teams. When working with patients, the team's work must be organized around the patient and their family's goals (American Association of Critical-Care Nurses, n.d.). This patient-centered approach to setting goals allows the healthcare team to align its goals with the needs and abilities of the patient rather than the wishes of the healthcare professionals. At the same time, it allows the healthcare team to be sure the patient is aware of the various strategies the team can use to assist in their care.

As teams work toward their goal, they should regularly evaluate the situation to determine whether they are still heading in the correct direction or if the goal needs to change (McLaney et al., 2022). Consider again the example of a patient care team. When a patient is in the hospital, the patient care team typically meets daily to determine their progress toward meeting their goals, explore any new information that has come up, and ensure all team members remain focused on the goals that matter to the patient.

PATIENT CONVERSATIONS

Using Shared Decision-Making and Collaboration with a Patient

Scenario: Mr. Rosenburg, a 50-year-old, has been admitted to the hospital with a diabetic foot ulcer and possible osteomyelitis on his right heel. He is meeting with his care team, including Dr. Blalock, Dr. Eboko, and Nurse Rosa.

Dr. Blalock: Mr. Rosenburg, I'm Dr. Blalock, the attending in charge of your case. Do you understand why they wanted to admit you to the hospital?

Patient: I came in because of this sore on my right heel. I can't get it to heal, and it's getting hard to walk so I can't work. I don't feel my feet very well, because of my diabetes, and apparently it was worse than I realized.

Dr. Blalock: Yes, you have a diabetic foot ulcer. It's fairly common for people with diabetes to have injuries to feet that don't heal well. Yours has gotten quite bad and become infected. We are concerned that the infection has spread to the bone of your heel.

Patient: The doctor downstairs in the emergency room said something about that infection. He had a name for it. . . . I don't remember. Anyway, how can we fix it? I need to be able to work.

Dr. Eboko: I'm Dr. Eboko, I work with Dr. Blalock. It's called osteomyelitis, which is a fancy way of saying a bone infection. I will be honest with you: it is difficult to treat and may take some time.

Patient: I don't have a lot of time, but I guess I have to have this treated. My father lost both of his feet by the time he was sixty. What is the best thing to do, doc?

Dr. Blalock: Well, I would like to run some additional tests and take a couple of wound cultures so that we know we are using the right antibiotics. Then I would like to start you on antibiotics and wound care. You will need to stay

here for two weeks to see if the antibiotics work. If all is well, we should be able to discharge you then.

Patient: And if the antibiotics do not work?

Dr. Blalock: Then, assuming you do have osteomyelitis, we would have to consider a surgical option to cut out the infected pieces of your bone.

Patient: Would I lose my foot?

Dr. Blalock: I am not sure. Hopefully not. The surgeon would do their best to leave enough intact bone that you could still walk if possible. But we are not ready for the surgeon yet. Are you okay with running some tests and starting the IV antibiotics?

Patient: Yes. My daughter is getting married in two months, and I need to walk her down the aisle.

Nurse: Oh, that is exciting, Mr. Rosenburg! I will be back in just a few minutes to draw those labs, swab that wound, and dress your foot. Dr. Blalock, are you also going to order some imaging, and could you please put in some orders for wound care and maybe a consult for the wound care nurse?

Dr. Blalock: I sure will. Mr. Rosenburg, you're in great hands with Nurse Rosa. Do you have any other questions for me right now?

Personal Accountability

Accountability is one reason why effective teams outperform individuals (Zajac et al., 2021). Rather than one individual managing everything, each team member handles their role within the team and is accountable to the other members when they do not (McLaney et al., 2022; Zajac et al., 2021). At the same time, team members must be able to ask questions and request help if needed. Communication must be transparent, and members must serve with honesty and discipline. Teamwork requires members to recognize that personal accountability involves a willingness to be open about what is owed to others and to practice self-management in meeting one's obligations as part of the team (Peteet et al., 2023).

LINK TO LEARNING

This video about using TeamSTEPPS (https://openstax.org/r/77STEPPSTeamVid) from the AHRQ's TeamSTEPPS page offers an example of how teams work. It shows clear communication and roles and illustrates how the team can expand or shrink based on the patient's needs.

Core Competencies for Collaborative Practice

Moving healthcare culture from hierarchical to collaborative practice has taken substantial planning and careful execution. Historically, schools of health professionals, such as nursing schools, have been governed solely by their own national associations (such as the American Association of Colleges of Nursing, the Association of American Medical Colleges, and the American Dental Education Association). These national associations lead the development of curriculum standards and competencies for professional healthcare provider education. For example, the 865 nursing schools that belong to the American Association of Colleges of Nursing use the association's curriculum standards to develop their own nursing programs (American Association of Colleges of Nursing, 2023). This level of coordination creates consistency across programs, allowing all RNs to use the same NCLEX examination for licensing.

Interprofessional Education Collaborative

In 2009, the Interprofessional Education Collaborative (IPEC)—a partnership between the American Association of Colleges of Nursing and associations for medical, dental, public health, osteopathic, and pharmacy education—was established to develop collaborative education competencies for all healthcare professionals. These became the IPEC Core Competencies for Interprofessional Collaborative Practice (McKearney, 2022). Their aim is to ensure that everyone earning a degree from a healthcare program can perform in collaborative teams immediately upon graduation. Today IPEC has twenty-one association members; it published the third version of its core competencies in 2023.

Interprofessional Education Collaborative Core Competencies

The IPEC core competencies fall into four categories: values and ethics, roles and responsibilities, communication, and teams and teamwork (IPEC, 2023b). Keep in mind that IPEC's definition of teams includes patients, caregivers, community members, advocacy groups, and other interested parties, and was influenced by team science, a collaborative effort to address a scientific challenge by engaging the strengths of team members with different areas of expertise. IPEC also emphasizes the importance of cultural humility, which encompasses both the ability to self-reflect on one's background and culture and the willingness to learn from team members of other cultures. Table 15.4 explores the IPEC competencies further.

Competency Category	Explanation	Examples
Values and ethics	These eleven competencies emphasize the need for all healthcare professionals to "maintain a climate of shared values, ethical conduct, and mutual respect" as they collaborate.	• Promote the values and interests of people and populations in all aspects of health care. • Advocate for social justice and health equity across the life span. • Respect individuals' dignity, privacy, identity, and autonomy and maintain confidentiality. • Value diversity and cultural differences.
Roles and responsibilities	These five competencies emphasize the need for all healthcare providers to use their professional expertise and that of their team members to improve health outcomes.	• Include all team members' knowledge, skills, and attitudes to provide person-centered, safe, cost-effective, timely, efficient, effective, and equitable health care. • Collaborate with others inside the agency as well as in the community and across different agencies to improve health outcomes. • Delineate each team member's role, scope of practice, and responsibility in promoting health outcomes.

TABLE 15.4 IPEC Core Competencies (Source: Adapted from IPEC, 2023b.)

Competency Category	Explanation	Examples
Communication	These seven competencies emphasize the need for respectful, responsible, and compassionate communication between all team members.	• Be genuine and authentic in communication, practice cultural humility, and avoid jargon that all team members may not understand. • Be constructive in providing feedback to bring the team to consensus. • Be aware of power structures, including one's own position, and use them to improve communication and decrease conflict.
Teams and teamwork	These ten competencies emphasize the need to collaborate and engage the strengths of team members with different areas of expertise.	• Recognize all team members for their diverse positions, cultures, and experiences to improve team function. • Use group brainstorming to solve problems and make decisions. • Use shared leadership strategies to improve team effectiveness. • Hold the entire team accountable for both positive and negative outcomes. • Openly discuss issues that may limit or benefit the team, such as organizational structure, procedures, resources, and policies.

TABLE 15.4 IPEC Core Competencies (Source: Adapted from IPEC, 2023b.)

LINK TO LEARNING

Check out *Core Competencies for Interprofessional Collaborative Practice* (https://openstax.org/r/77IPECCoreCompe) to find out more about the IPEC competencies.

15.6 Interprofessional Approach to Health Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine interprofessional team members and their roles
- Recognize the benefits of an interprofessional approach
- Identify ways to improve interprofessional teamwork

In any healthcare organization, no nurse works in isolation, not even when working from home or other remote locations. As previously discussed, all nurses work with other nurses, health professionals, and administrative staff, and they collaborate in teams with other healthcare professionals, stakeholders, patients, and family members. This can be difficult for new nurses, who must learn and remember numerous interprofessional relationships, teams, interactions, people, and roles. Sometimes it may even feel a bit like there are too many cooks in the kitchen. Thus, it is important to understand who the potential team members are and how to work effectively with them.

Interprofessional Team Members and Their Roles

Interprofessional team members fall into a wide array of healthcare categories. While most have standard roles and responsibilities, some may shift between roles. Additionally, just like nurses, all members of interprofessional teams are bound by state regulations that govern the scope of their practice. So, while the following descriptions are true for most professionals in most environments, they may not be universally accurate.

Provider

A **provider** is generally the only team member who can write patient care orders, particularly for medications and treatments (Pistoria, 2022). They make medical diagnoses and often provide supervision for patient care teams. A team may include several types of providers. They are most often physicians; however, advanced practice registered nurses and physician assistants also have prescriptive authority.

Registered Nurse

Registered nurses (RNs) provide patients with skilled care, such as medication administration, procedures, and wound care. Patients in hospitals will likely see their RN more than any other interprofessional team member. RNs are often the first to detect condition changes and advocate for patient needs and desires. RNs may also be charge nurses (posting assignments and acting as points of contact for the unit), nurse managers, nurse supervisors, care managers, quality improvement specialists, or discharge coordinators, as well as additional roles throughout the healthcare system.

Licensed Practical Nurse/Licensed Vocational Nurse

A licensed practical nurse (LPN) has different educational requirements and fewer advanced skills than an RN and provides basic nursing care under the supervision of an RN or provider. Some nursing boards call these professionals licensed vocational nurses (LVNs), but LPNs and LVNs have essentially identical scopes of practice. In most agencies, LPN/LVNs manage basic patient care and provide medications under the supervision of RNs. They often have restrictions on the level of patient assessment and education they are licensed to provide. For example, in a hospital system, LPNs/LVNs may be unable to give IV push medications, hang blood, or perform full daily patient assessments. However, they may be the primary nursing staff on duty in a nursing home or skilled nursing facility.

Assistive Personnel

The category of assistive personnel (AP) includes a wide range of staff, such as nursing assistants (certified or not), home health aides, scrub techs, and medical assistants. These team members help nurses provide patient care. Their duties may include taking vital signs; transferring, bathing, feeding patients; and otherwise providing patient comfort. AP may be trained in more complicated procedures in some locations and circumstances. For example, many community living homes for people with disabilities employ medical technicians who have received additional training to assist patients with their medications. But these circumstances are based strictly on the laws of the state.

Respiratory Therapist

A **respiratory therapist** provides daily respiratory care such as breathing treatments and supportive care for many patients experiencing respiratory conditions. They also work closely with patients who are intubated and on mechanical ventilation or who use breathing machines for sleeping, and they participate on code and rapid response teams for patients who are experiencing distress or going into respiratory or cardiac arrest. They may also be called upon to evaluate if a patient needs to be discharged on oxygen, and they may assist in setting up home oxygen.

Physical Therapist

A **physical therapist** evaluates and treats patients who have difficulty moving. For example, a patient may struggle to walk, change positions, or move from chair to bed. Physical therapists often see patients who have become deconditioned due to bedrest or who have had orthopedic injuries or surgery. They work with patients on endurance and strength and help the team identify whether patients can stay safely at home after discharge or need physical therapy at a rehabilitation facility.

Occupational Therapist

An **occupational therapist** works with patients on activities of daily living. For example, occupational therapists may help patients who have had strokes or head injuries relearn to feed and dress themselves, bathe or toilet, and sometimes even cook or clean. They also assist the team in determining whether a patient is safe to be in their own home—particularly if they live alone.

Speech Therapist

A **speech therapist** works with patients on speech and communication and helps manage issues that occur with swallowing. Many patients develop difficulties in swallowing and with oral communication. Speech therapists conduct studies to determine if patients can safely eat different textures of food to prevent aspiration into the lungs. They also help to determine if patients have any other issues—such as neurological injury, brain damage, anxiety, or fear—that are affecting their speech.

Social Worker

A **social worker** provides the team with support and information and the patient with education about meeting their social needs. Social workers frequently help with discharge planning by identifying community services or resources for families and home health needs. They are often the clinician who liaises between an acute hospital setting and a skilled nursing or rehabilitation facility.

Pharmacist

A **pharmacist** does more than simply fill prescriptions. They reconcile medications and ensure patients are not ordered new medications incompatible with their current ones. Their presence saves time and reduces medication errors by increasing the chance for the correct medication and dosage to be ordered the first time. Additionally, they fill an integral role in patient and family education regarding medications and treatment plans. Pharmacists field inquiries regarding dosing, available formularies, and administration of medications, making them an excellent educational resource for healthcare providers.

Chaplain/Spiritual Care Provider

A **chaplain**, or spiritual care provider, is available in most care settings. Their role is to meet patients' spiritual needs and ensure that a patient's regular spiritual adviser is notified of their presence in the facility (if the patient wants them to know). Chaplains also provide spiritual care for family members as well as members of the healthcare team.

Other Team Members

This section has identified some of the most common healthcare team members, but the list has not been exhaustive. Nurses will encounter many others, such as patient advocates, laboratory personnel, radiology technicians, dietitians, and interpreters. Each member has their own roles and responsibilities—all in service to the goal of achieving the best patient outcomes possible.

Benefits of an Interprofessional Approach

This chapter covers a lot of topics—from research to decision-making to collaboration. At times you might have wondered, "How does all of this fit together?" The interprofessional care management approach provides holistic, engaged care from a team that includes healthcare professionals, the patient, and their loved ones. Through transparency, shared decision-making, evidence-based practices, and quality improvement, the interprofessional approach impacts patient safety, resource allocation, care coordination, care quality, and patient outcomes.

Resource Allocation

A **resource** is anything required to perform effective patient care: both tangible items (such as supplies, patient rooms, financial resources, and staff) and intangible items (such as time and knowledge). While it may seem counterintuitive, interprofessional care frequently decreases the costs of the resources used by individual patients. In one study of over 110,000 primary care patients, team-based care patients were less likely to be seen in an emergency room or admitted to a hospital (Reiss-Brennan et al., 2016). They were also less likely to be seen by their primary care physicians, as other team members could often manage their concerns. Thus, by using resources more efficiently, team-based care ends up decreasing overall costs of care.

Additionally, organizations that foster highly collaborative healthcare teams frequently find that team members report greater job satisfaction and engagement, leading to lower turnover rates (Morley & Cashell, 2017). It is very expensive to replace staff, so organizations with low turnover rates often can allocate resources into other areas.

Improved Adherence to Plan of Care

There are two ways to explore the idea of improved adherence to plan of care: from the perspective of healthcare professionals and from the perspective of patients. For healthcare professionals, having a collaborative practice is likely to improve the team's adherence to the patient's care plan. Team members are accountable to the team for

performing their roles effectively and appropriately. This improves patient care by increasing the likelihood that plans of care will be maintained. Additionally, the extra communication and collaboration provided by the team structure decreases opportunities for confusion or error.

For patients, there is evidence that having a care team improves the patient's chances to participate in their own self-care (Morley & Cashell, 2017). Collaborative teams increase patient education and engagement by being responsive to patients and respectful of their wishes, which in turn increases the patient's participation in making care decisions, including the creation of a self-care plan to which they can adhere when the care team is not present.

Improved Quality of Care

Team-based care models have been shown to improve patient safety and quality of care. In the primary care study mentioned previously, patients in team-based care practices were substantially more likely to be screened for depression, be seen for an annual wellness exam, and participate in self-care plans for chronic illnesses than their counterparts in traditional practices (Reiss-Brennan et al., 2016).

Improved Outcomes

Interprofessional care teams have also been shown to improve overall patient outcomes. Many studies have shown improved outcomes on performance measures such as mortality, morbidity, and postoperative complications (Schmutz et al., 2019). For example, one study looked at high-risk patients who experienced frequent emergency room visits and hospitalizations or had elevated hemoglobin A1c levels (an indication of glucose control over a three- to six-month period for people with diabetes) (Guck et al., 2019). Each of these measures improved with an interprofessional, collaborative team approach to their care.

Improving Interprofessional Teamwork

Root cause analyses show that over 50 percent of adverse events are related to ineffective teamwork (Zajac et al., 2021). Effective teamwork requires two separate types of functioning: the actions from team members necessary to reach goals and the ability of team members to combine their knowledge, skills, and attitudes to make the team sustainable and successful. While teamwork is imperative in today's healthcare culture, it also has challenges and should be continuously and intentionally improved upon.

Setting Clear and Attainable Goals

Effective teams have clear purposes with attainable and measurable goals. There are a variety of strategies to develop attainable goals. When a group finds they are struggling with goal setting, they might first try a more focused approach. Consider a quality improvement team of nurses who want to improve the use of a patient care bundle for diabetes management (currently at 25 percent). They have a goal to improve the use of the patient care bundle but no clear strategy of how to get there. The team might consider using a strategy known as SMART to determine how to set a clearer goal and achieve it (see 2.3 Effective Communication) (Centers for Disease Control and Prevention, 2020). SMART is an acronym that represents five characteristics of strong goals:

- Specific: The goal must identify exactly what will be done and who or what will be involved and impacted.
- Measurable: The goal must state how the desired change will be measured and what amount of change is expected.
- Attainable: The goal must be possible to attain given the resources available and time allotted.
- Relevant: The goal must be reasonable to expect under the given circumstances.
- Timely: The goal must set a time frame for completion.

In the case of the diabetes management care bundle, the SMART goal might be the following: By January 31, 2024 [Timely], care managers will complete patient care bundles for patients with diabetes [Specific] at least 75 percent of the time [Measurable]. Assuming the circumstances make this improvement possible, the goal is also attainable and relevant. Once the SMART goal is set, the team can develop its strategy for ensuring the improvement occurs.

Improving Interprofessional Training

Interprofessional training and continuing education are important for all healthcare professionals. As previously discussed, agencies such as the Interprofessional Education Collaborative, which provide curriculum standards for schools of healthcare professions, have already established a critical niche in educating up-and-coming healthcare

professionals. In addition, interprofessional continuing education has its own set of joint accreditation standards, determined by a collaboration between nursing, medical, and pharmacy groups (Joint Accreditation for Interprofessional Continuing Education, 2023). Hospitals and agencies can send staff to interprofessional continuing education opportunities to learn or maintain skills.

Providing Leadership Training

Leadership training is another possibility to improve nursing team performance. The TeamSTEPPS 3.0 program (see Quality Organizations for Nursing Practice) has a leadership training module that can be used to help leaders improve and that can be taken as self-study or used in classroom settings (Agency for Healthcare Research and Quality [AHRQ], 2023). The program recommends strategies such as ensuring the team is coordinated, monitoring plans, and communicating changes; encouraging team members to assist each other; and modeling effective teamwork. It also recommends that leaders employ strategies such as a "brief checklist" at the beginning of a project and a "debrief checklist" at the end to assist in continuous leadership improvement (AHRQ, 2023). See Figure 15.13 for examples provided by the AHRQ.

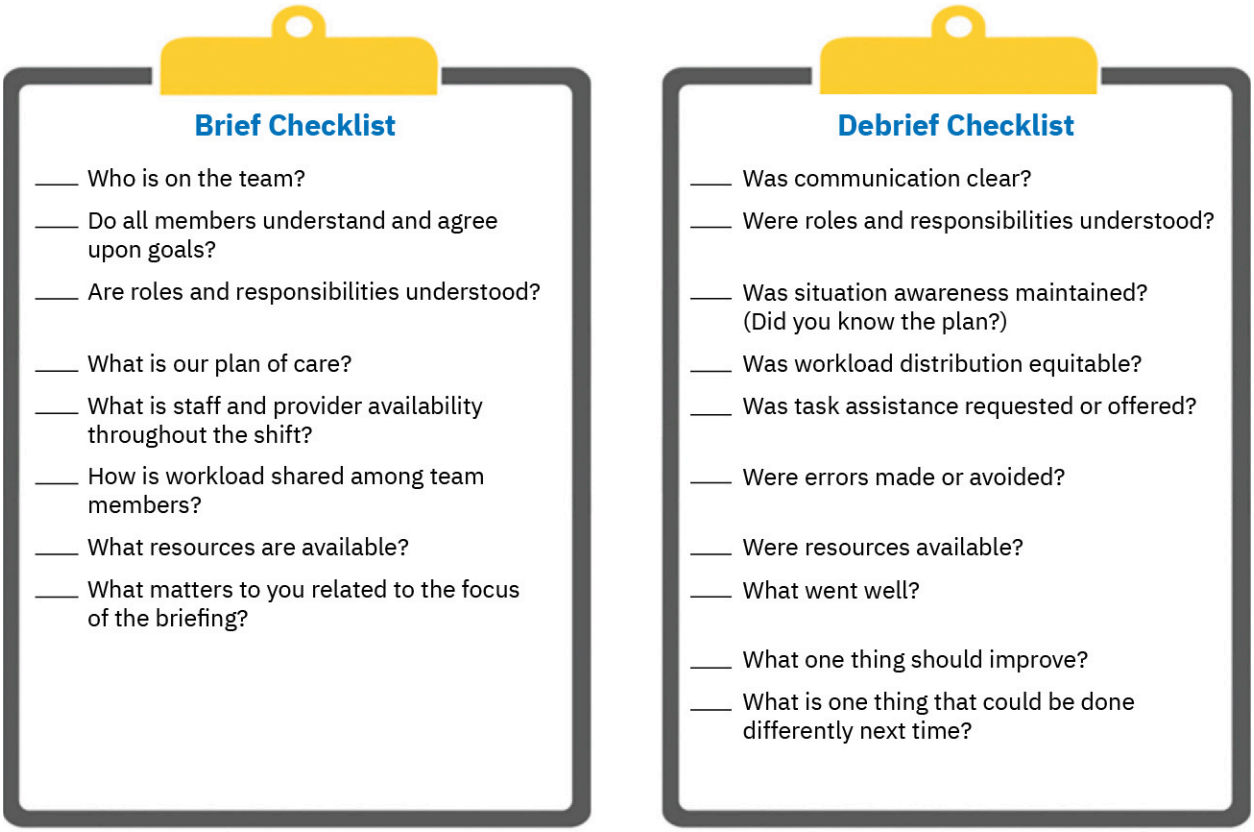

FIGURE 15.13 (a) The Brief Checklist can be used at the beginning of a project to ensure that all team members understand the plan. (b) The Debrief Checklist can be used at the end of a project to give team members an opportunity to reflect on the successes and struggles and provide feedback for continuous improvement. (credit a: modification of work "Brief Checklist" by Agency for Healthcare Research and Quality; Public Domain; credit b: modification of work "Debrief Checklist" by Agency for Healthcare Research and Quality; Public Domain)

LINK TO LEARNING

The AHRQ offers a variety of strategies and tools to help teams perform more effectively. Take a few minutes to explore the AHRQ TeamSTEPPS 3.0 pocket guide (https://openstax.org/r/77TeamSTEPPSGui) Consider how you could implement some of the strategies in your own teamwork at school or in your workplace.

Summary

15.1 Evidence-Based Research

Research has been an essential component of nursing since the days of Florence Nightingale. It is codified into our practice acts and ethical standards and has evolved over the decades into a vibrant field of nursing researchers. Today every nurse should be able to use research, even when they are not conducting it themselves. With individuals or small groups, using research involves translating EBR into EBP through several steps that integrate the best scientific evidence with the nurse's clinical experience and the patient's values and needs. On larger scales, changes to implement EBP must be planned and negotiated with multiple stakeholders based as much on resources and institutional values as on the value of the research. Several models can facilitate these changes, including the JHEBP model.

15.2 Evidence-Based Clinical Decisions

Operationalizing EBP into EBDM involves the EBP triad of the patient's preferences, the clinical expertise of the nurse, and the best available evidence. While effectively combining all three can be complicated, they have the greatest impact on patient outcomes. However, the nurse must also understand the available resources and limitations of their work setting and be able to develop alternatives when limitations prevent the first choice from being feasible. Clinical decision support tools such as bundles, checklists, and standardized processes have been developed to assist nurses and other healthcare workers in their decision-making. One type of tool, EBP bundles, has been shown to provide excellent results in acute care and ICU settings.

15.3 Quality Improvement in Nursing

As with research and EBP, QI is integral to nursing care and should be performed continuously because care can always be improved. Because nurses directly care for patients and work on the "front lines" of health care, they are involved in all aspects and levels of QI; regardless of their role or specialty, all nurses engage in some QI activities. In addition to causing better patient outcomes, QI can promote innovation and professional development, decrease unnecessary tasks, and improve resource allocation. There are many organizations and initiatives that facilitate improvements to quality in health care, such as The Joint Commission, the Magnet Recognition Program, and the educational focus on QSENs.

15.4 Nursing Standards of Delegation

Under their practice acts with individual states, nurses have the ability and responsibility to delegate certain tasks to other staff members. Nurses use the nursing standards of delegation to ensure the right task, circumstance, person, communication, and supervision for any tasks they delegate. They also use the principles of accountability, authority, and responsibility to ensure that tasks are performed appropriately while maintaining patient safety in all aspects.

15.5 Collaborative Practice

Collaborative practice is a core standard for nurses and all healthcare professionals, who are expected to work in interprofessional teams that also include patients and their families. The importance of collaboration and teamwork is codified in our standards of practice, encouraged by national and international regulations, and taught in healthcare professional programs. High-functioning collaborative teams share common goals, mutual respect and support, and effective communication. Additionally, each member has clearly defined roles and aims to produce measurable outcomes. The IPEC core competencies for effective collaboration in health care are taught nationwide to ensure that all new healthcare professionals are skilled at collaborative practice.

15.6 Interprofessional Approach to Health Care

The healthcare team consists of a wide array of team members with unique roles and responsibilities. Working together well must be a purposeful goal. Many professionals, from ministers to dietitians to respiratory therapists, may be important members of the healthcare team. A well-built team can lead to improved patient outcomes, higher-quality care, and greater likelihood that care plans will be fully implemented and adhered to. Setting clear goals, utilizing a curriculum for interprofessional training, and supporting leadership training with SMART goals and tools such as TeamSTEPPS 3.0 are a few strategies to create a strong, dynamic team of healthcare providers.

Key Terms

abstract a brief description of the content of an article
accountability the responsibility of being answerable to oneself and others for one's choices
adverse event an event that results in injury or death to a patient due to care that was not appropriately delivered rather than to their health condition
applied research research that applies answers from basic research to current knowledge, testing it to evaluate changes in practice
assignment the routine activities and procedures that are part of a staff member's normal job and that they were taught in either a degree or certificate program or as part of on-the-job training
assistive personnel (AP) people who work to help nurses and other providers, including nursing assistants, certified nursing assistants, patient care technicians, and surgical technicians
basic research research intended to answer questions without changing the current conditions
bias a research error due to encouraging one response over another, usually unintentionally
case study an in-depth exploration of all aspects surrounding a single, complex issue as experienced by one or two individuals
certification the process of receiving extra education plus passing a subject-matter examination to become a recognized subject-matter expert
chaplain a spiritual adviser or minister working with an agency or hospital to meet patients' spiritual needs
clinical decision support tools resources available to help nurses and other healthcare professionals access best practice information more easily
clinical expertise the combination of a nurse's experience, critical thinking, and ability to recognize patterns and extrapolate alternatives based on similar experiences
close-ended questions questions with a limited range of answers, each of which can be assigned a variable for statistical evaluation
cognitive bias an unintentional error in judgment due to incorrect thought processes
collaborate to work effectively with one or more others
collaborative practice the process of healthcare workers from multiple professions working and communicating effectively together with patients and their families to provide patient care and improve healthcare quality and patient safety; also called interprofessional practice
conclusion the section of an article that discusses any deductions that can be made from the research
correlational research research that uses statistical analysis to explore relationships between two or more variables
delegatee the staff member being delegated to complete a task or activity
delegation the act of requesting staff members to perform tasks or procedures that are outside of their normal job but within the limits of their job description
descriptive research research that describes one or more variables
discussion the section of an article that explores the results of the research in relation to what else is known about the topic
empirical evidence evidence that can be measured and quantified
error the failure of a planned action to be carried out correctly
evidence-based decision-making (EBDM) the use of evidence-based practice (EBP) when making decisions about caring for individual patients
evidence-based practice (EBP) the responsible and thoughtful use of current and best evidence in conjunction with clinical expertise and patient values to guide healthcare decisions
evidence-based practice bundles small sets of evidence-based interventions that have been proven to improve patient outcomes when used in specific settings and groups
evidence-based research (EBR) when healthcare providers use research findings to improve their day-to-day care of patients
experiential learning learning by doing
experimental research research that studies the effect of a new intervention on a known concern and evaluates its effectiveness
focus group group interview in which participants interact with each other and the researcher
hierarchy of evidence classification of evidence into categories based on the type of research represented

human subject a living individual whom a researcher wants to interact with to collect information or specimens
innovation the development of new ideas, methods, and procedures
institutional review board (IRB) a group of people who monitor and approve medical research that will be performed within a given agency and protect the agency and its employees from engaging in unethical research practices
Interprofessional Education Collaborative (IPEC) partnership between the American Association of Colleges of Nursing and associations for medical, dental, public health, osteopathic, and pharmacy education, which was formed to develop collaborative education competencies for all healthcare professionals
interview a one-on-one conversation between the researcher and the research participant
introduction a brief discussion at the beginning of an article detailing the history, relevant literature, and rationale for the research conducted; sometimes called the background
literature review a synthesis of what other researchers have learned about a topic and what information still needs to be determined by future research
methods the section of an article detailing how the study was conducted
mixed methods research research that combines components of qualitative and quantitative methods into a single study
nursing research structured inquiry to obtain and evaluate information related to a specific nursing question
occupational therapist a healthcare worker who specializes in providing therapies to regain or prolong the ability to perform activities of daily living such as dressing and cooking for oneself
open-ended questions questions that lack a specified answer, such as yes or no, and that require explanation on the part of the participant
patient care team a group of people, including the patient and their family, responsible for providing care for a specific patient
peer-reviewed journals publications that require several reviewers to thoroughly evaluate articles and their value to the overall body of knowledge as a condition of publication
pharmacist a healthcare worker who specializes in filling prescriptions and reconciling medications to ensure patients are not prescribed incompatible medications
physical therapist a healthcare worker who specializes in manual treatment of physical injury or disease with methods such as exercise and massage
Plan-Do-Study-Act (PDSA) a quality improvement strategy to make changes through a PDSA strategy
preventable adverse event an adverse event related to human error
provider a physician, nurse practitioner, or physician's assistant tasked with diagnosing patients and ordering treatments such as medication and therapies
qualitative research complex, open-ended research that is based on the lived experience of participants and suitable for identifying areas of concern
Quality and Safety Education for Nurses (QSEN) a collaborative effort to advance and promote the integration of quality and safety competencies into nursing education and practice
quality assurance (QA) oversight to ensure that current quality standards are being met across a department or agency and that staff are receiving the education and infrastructure support to maintain that quality
Quality Assurance and Performance Improvement (QAPI) the dual use of quality assurance (QA) and performance improvement (PI), specifically in post acute care environments such as rehabilitation centers and nursing homes
quality improvement (QI) a framework to improve patient care and outcomes systematically
quality improvement (QI) nurses experienced RNs or advanced practice nurses who have a special interest in QI and may have taken a certification to become a subject-matter expert
quantitative research research that uses deductive reasoning, empirical evidence, and numerical data to test the validity of a reasonable idea in a given setting
quasi-experimental research research that explores cause-and-effect relationships without testing new interventions
references sources used within the body of an article to provide background information and support for analysis and discussion of the findings
research article a formal, written description of original research performed by the author(s)
research methods strategies and techniques used for gathering and analyzing data

resource a tangible or intangible item used in patient care, including time, staff, supplies, and space
respiratory therapist a healthcare worker who specializes in maintaining patient airways and providing advanced respiratory care
results the section of an article explaining what researchers learned or concluded from the data
root cause analysis a structured process to determine factors that underlie errors and adverse events
seminal article an article that strongly influences research conducted in the future and thus retains its value past the time when most research is generally considered obsolete
sentinel event an unexpected occurrence involving death or serious physiological or psychological injury, or the risk thereof; like a never event but is not necessarily preventable
shared decision-making (SDM) the practice of empowering patients to make healthcare decisions and state their needs and limitations
social worker a healthcare worker who specializes in helping patients meet social needs such as housing or rehabilitation upon discharge
speech therapist a healthcare worker who specializes in speech and language issues as well as the identification and management of swallowing concerns
stakeholders individual with an interest in the success of an organization, such as an investor in a business or a nurse in a hospital
statistical significance the relative chance that a study's results are reliable and similarly reproducible in a different group of similar patients
team a coordinated group of two or more people, each with a specific role, who interact to achieve a common goal
team science a collaborative effort to address a scientific challenge by engaging the strengths of team members with different areas of expertise
team structure the makeup of a single team or a multiteam system, including identification of the team leader and other members
translation science a branch of research dedicated to improving the movement of evidence-based practice from recommendations to normal care
variable a factor that is measured or studied in research

Assessments

Review Questions

1. A nurse is concerned that she has not been fully meeting the cultural needs of some of her Muslim patients. She conducts research into culturally appropriate care for Muslim patients and integrates a few ideas she learns into her practice. Which type of research is she most likely using?
    a. basic research
    b. applied research
    c. evidence-based research
    d. quasi-experimental research

2. Six months ago a medical-surgical unit established a series of rules for staff and patients regarding noise and patient interruption between 10 p.m. and 6 a.m. Several nurses want to evaluate the impact of these rules to ensure the changes have met the patients' needs and perform some EBR into these outcomes. Some nurses want to use a survey with all the patients. However, others think that better data might be captured by interviewing a few patients. Which research methods would be best for this situation?
    a. qualitative methods
    b. quantitative methods
    c. mixed methods
    d. All methods are equally appropriate for this situation.

3. A nurse is considering integrating some new evidence into her practice. She has explored several sources. Which sources have the highest quality information?
    a. an article from Wikipedia
    b. a blog post from the American Diabetes Association

c. a clinical practice guide from the American Association of Critical-Care Nurses
d. a 15-year-old systematic review

4. What are the three components of the PET process in the JHEBP model?
a. population question, evidence, and treatment
b. practice question, evidence, and treatment
c. population question, evidence, and translation
d. practice question, evidence, and translation

5. Ensuring a patient's preferences involves incorporating which two strategies?
a. patient-centered care and shared decision-making
b. patient education and health literacy
c. patient-first care and group decision-making
d. patient-centered care and family engagement

6. How do EBP bundles work?
a. They provide all intervention options in a single place for the nurse to choose from.
b. They provide equipment sets packaged together to make it easier to manage procedures.
c. They provide a set of a few interventions that should always be used in given situations.
d. They create performance templates to use when providing all patient care.

7. Nurses are informed during a staff meeting that a patient on a different unit recently died because a nurse gave them an insulin overdose. What kind of an event is this?
a. adverse happening
b. preventable error event
c. preventable adverse occurrence
d. sentinel event

8. Nurse Shelly has just completed her nursing degree and is trying to choose which facility to work for. She has offers from several hospitals. Which facility probably provides the best environment for their nursing staff?
a. Hospital A is accredited by The Joint Commission.
b. Hospital B is accredited by the IHI.
c. Hospital C is designated a Magnet facility.
d. Hospital D is designated a critical access facility.

9. A charge nurse is trying to determine whether they can delegate an LPN to give blood to a patient. Which sources should she explore?
a. the state's nurse practice acts and the LPN job description for her facility
b. the ANA website and the guidelines given in the *American Journal of Medicine*
c. the RN's job description and the clinical decision tool in the electronic health record
d. another nurse and the agency's policy for blood transfusion

10. An RN is trying to determine whether she can delegate some lab draws to an AP from a different unit with whom the RN is familiar. Which reason prevents the RN from delegating the labs?
a. The AP has completed the competencies for drawing labs but does not do them regularly.
b. The RN is unable to provide adequate supervision to the AP.
c. The RN is able to obtain the lab draws without delegation.
d. The RN has not worked directly with the AP before.

11. A nurse is conducting walking rounds with a patient's care team. Which action, if performed by the team leader, would most likely surprise the nurse?
a. making eye contact with the patient and speaking with plain language
b. stating they do not want to do rounds if the patient's spouse is in the room

c. encouraging a patient to ask questions
d. ensuring each team member addresses issues or concerns if needed

12. Collaborative practice is characterized by healthcare professionals from different disciplines working together. What else is a characteristic of collaborative practice?
a. adhering to a rigid leadership structure
b. assigning roles based on the group's needs rather than member knowledge
c. treating others with dignity and respect
d. limiting one's communication to weekly meetings

13. Which member should a patient care team always include?
a. a patient
b. a chaplain
c. a social worker
d. a medical student

14. The nurse is assisting a patient with their lunch and notices they seem to be having difficulty swallowing. She communicates this new concern to the patient care team and suggests they place a consult for a specialist. Which type of interprofessional team member should evaluate the patient for this issue?
a. occupational therapist
b. physical therapist
c. speech therapist
d. respiratory therapist

15. TeamSTEPPS® encourages continuous leadership improvement through the use of tools such as:
a. debrief checklist
b. surgical checklist
c. problem checklist
d. error reporting

Check Your Understanding Questions

1. Explain the difference between qualitative and quantitative research.

2. What is the difference between the research conducted by an individual nurse for use in their practice and that conducted by a group for use with a population of patients?

3. Describe the components of the CLABSI bundle.

4. Describe the difference between QI and quality assurance.

5. Explain at least one benefit of QI and list three domains that are included in healthcare quality.

6. Describe the difference between delegation and assignment.

7. Why is collaborative practice important in health care?

8. What is IPEC, and why is it important?

9. Briefly explain how interprofessional care can improve the allocation of resources and the outcomes for population health.

Reflection Questions

1. Discuss your feelings about human rights protections and their importance in nursing research. How do these protections align with nursing ethics and standards of practice?

2. Consider your decision to enter nursing school through the lens of the decision-making process. Describe the data you included in your decision as well as your judgments and those of anyone you consulted as part of the

process. While the final outcomes are not available yet, are there any initial outcomes that either help to validate your decision or that have caused you to question it?

3. What types of behavior do you think constitute mutual support in team settings?
4. Consider the various interprofessional roles discussed in this section. Many of these professionals perform roles that nurses also perform. Why do you think healthcare teams should include these additional professions?

What Should the Nurse Do?

Members of the nursing staff on the Rose Unit of Sunshine Hospital are concerned there have been more falls than usual on the unit over the last six months. They would like to determine if there are better interventions they can use as a group to prevent falls. They bring it up to their nurse manager during a staff meeting. The nurse manager agrees it is a good project idea and suggests they use the JHEBP model. Answer the following questions regarding this case study and the JHEBP model:

1. What is the first step the nurses should take when beginning their project?
2. Suppose the nurses determine there is not enough available evidence to make a full EBP project. What alternatives might they have to reduce falls on the unit?
3. The nurses eventually determine there is sufficient available evidence, so they are moving forward with their project. However, when it is time to use the rating worksheets to evaluate the evidence, they note that a lot of it rates as low quality. What should they do?
4. The nurses have identified several recommendations they would like to implement on the Rose Unit. How should they proceed?
5. The action plan has been implemented for six months, and the outcome measures have been established. Not only did the number of falls decrease on the Rose Unit, but there is also a lower percentage of injuries from falls—and unexpectedly, the patients' length of stay also decreased over the same time frame. What should the nurses do next?
6. Nurse Rosen is caring for an older adult patient with pneumonia who wants their adult child to stay the night. While this is not technically against the unit's rules, usually staff allow family to stay only if patients are expected to pass away soon. Otherwise, families are encouraged to leave at 9 p.m., when visiting hours end for the day. Nurse Rosen knows several other hospitals in the area allow visitors overnight. What should Nurse Rosen do?

Mr. Rodriguez has been admitted to the ICU with a five-day history of high fever and cough. His English is quite poor, and he is very anxious. The nurse is trying to perform the initial assessment and evaluate his needs, but there is a real communication barrier.

7. Mr. Rodriguez takes a turn for the worse, and the physician is concerned for sepsis. What should the nurse expect to do?
8. A decision is made to establish a central line for Mr. Rodriquez. What can the nurse do to prepare the supplies?
9. Mr. Rodriquez does have sepsis and goes into respiratory failure. He is placed on a mechanical ventilator. What additional care should the nurse expect to provide?

Nurse Sa'ad has a patient requesting to go to the bathroom. The patient has not been out of bed for five days and has physician orders for bed rest, but they are insistent that they will be fine to walk and want to use the toilet. Nurse Sa'ad walks them to the bathroom and returns to the nursing station after asking the patient to pull the cord when they are ready to return to the bed. Ten minutes later, a nursing assistant finds the patient lying unconscious on the floor between the bathroom and their bed. Upon assessment, the patient has a head wound and a fractured hip but will recover fully. The nurse manager contacts the quality and safety department with an incident report.

10. What type of event is this?
11. When the quality nurse arrives, what kind of investigation can Nurse Sa'ad expect to be conducted?
12. Scenario update: The root cause investigation determines that the patient was not wearing nonslip socks (a unit standard), had a broken call light in their bathroom, and had been taking narcotics for pain, which might have contributed to their fall. Given this update, how should Nurse Sa'ad act to prevent a similar event from happening again?

13. Nurse Gomez has delegated a task to a member of her unit's AP staff, Glenda. She has ensured Glenda has completed the necessary training. Glenda has a competency on file, and Nurse Gomez is comfortable with Glenda's ability to perform the task. After Nurse Gomez finishes explaining what she needs Glenda to do, Glenda states that she does not feel comfortable accepting the delegation. What should the nurse do?

Consider again the scenario of Mr. Rosenburg, the 50-year-old with the diabetic foot ulcer who was discussed earlier in this chapter. Reread that conversation and answer the following questions.

14. Name one strategy that Dr. Blalock used to engage Mr. Rosenburg initially.
15. How did the team encourage Mr. Rosenburg to determine his goals?
16. Nurse Rosa asks for the wound care nurse to be consulted for Mr. Rosenburg's foot wound. Was this an appropriate request for her to make?

Competency-Based Assessments

1. Read through this worksheet on developing PICOT questions (https://openstax.org/r/77JPICOT) by the Oncology Nursing Society. Once you have read the material, use the format suggested to write two full PICOT questions about topics that interest you. They do not have to be related to oncology.
2. Using one of the PICOT questions developed in question 1, begin conducting EBR for information addressing your issue. Locate at least five high-quality resources, at least three of which must be from peer-reviewed journals. You must also include at least one systematic review. Give the information for each resource, copy and paste the abstract information into your document, and detail why you believe each source to be high quality.
3. Explore the information about the Teach-Back Technique (https://openstax.org/r/77DecisionTool) offered on the AHRQ's website. It is commonly used to aid in shared decision-making. Work with a partner. Each partner should prepare to briefly educate their partner, using the Teach-Back Technique, on a topic of their choice.
4. Goal 6 of the 2023 National Patient Safety Goals from The Joint Commission is to reduce patient harm associated with clinical alarm systems (NPSG.06.01.01: Improve the safety of clinical alarm systems). Explore the rationale and elements of performance for this goal in the 2023 National Patient Safety Goals (https://openstax.org/r/77SafetyGoals); then, describe three elements you can envision incorporating into your own practice.

Consider the following scenario. You are a newly graduated nurse in Texas participating in a nurse residency program and learning about delegation. Your residency supervisor asks you to use the delegation resource from the Texas Board of Nursing (BON) (https://openstax.org/r/77TXBoard) to answer the following questions.

5. Which chapter of the Texas BON's rules describes delegation responsibilities in acute care settings?
6. Can LVNs delegate care in Texas? Please explain the answer.
7. Can RNs be required to delegate? Please explain the answer.
8. When nursing students are employed to work as AP in healthcare settings, can tasks they have learned in school be delegated to them? Please explain the answer.
9. Conduct internet research and provide a URL for at least one other state's laws regarding delegation (preferably your own state unless you are Texan).

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CHAPTER 16
Legal and Ethical Considerations

FIGURE 16.1 Ethical and legal issues in nursing can have profound consequences, both personally and professionally. (credit: "registered nurse assigned to the 959th Medical Group" by Master Sgt. Helen Miller/U.S. Air Force, Public Domain)

CHAPTER OUTLINE

16.1 Value Considerations of Care
16.2 Ethics in Nursing Practice
16.3 Legal Dimensions of Care
16.4 Advocacy in Nursing Practice

INTRODUCTION Consider the following scenarios:

- A patient recently signed a do not resuscitate order and has a living will stating they do not want any extreme lifesaving measures; however, when they cease breathing, their adult children demand they be placed on life support.
- A provider has asked a nurse to facilitate understanding of the informed consent documents with a patient before surgery; however, based on their confusion about the procedure and aftercare expectations, it is apparent the health literacy of the patient and family is low, and they do not understand what the patient was asked to sign.
- A teenager has been brought in with multiple traumatic injuries following a motor vehicle accident. They require blood transfusions and surgery to survive; however, the family refuses to consent to the procedures, citing religious conflicts.
- An older patient from a skilled nursing facility has been brought to the hospital in a coma after a fall. They have no family, no living will, and no chance of recovery; however, they have no one to make decisions for them since they are incapacitated.

What is the nurse's role in these types of situations? These scenarios offer real examples of why a clear

understanding of values, ethics, laws, and advocacy is critical for nurses. Every nurse will face these or similar scenarios and ethical and legal questions in their careers. For this reason, entering practice with a solid moral and ethical foundation is vital for all nurses and healthcare workers.

16.1 Value Considerations of Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize how values are developed
- Describe the values of professional nursing
- Identify the process of structuring values for patient care

How do humans figure out what is good or bad? Right or wrong? Why do some people feel a strong need to care for others who are less fortunate and other people feel that everyone should be fully responsible for making their own way? What is the difference between an individual who regularly breaks the law by selling illegal drugs and someone who will not even go through a red light because it is against the law? Often, these questions boil down to values. Everyone has them, everyone uses them, and everyone experiences them differently.

A **value** is a central, guiding principle in an individual's life. Values help people establish priorities, plan for their futures, choose their careers, and determine how they want to live (Weiss et al., 2019). Values are central to individual identity, allow for common communication within groups, help set up goals and ideals of behavior, and assist individuals in responding to questions and ethical situations (Sagiv & Schwartz, 2022).

Development of Values

People develop their values throughout their lifetimes, with much development occurring early in life. Recent studies of twins have shown that both nature (innate, hereditary tendencies) and nurture (socialization and environment) impact value development (Sagiv & Schwartz, 2022). Much like culture, values tend to be shared among individuals living, working, and worshipping in proximity. Caregivers are the first teachers of values, sharing their values and attitudes with their children (Weiss et al., 2019). Caregivers are often among the strongest sources of values, probably due to the inherited and environmental aspects of value transmission. However, children are also influenced by the values of peers, teachers, and religious systems (Sagiv & Schwartz, 2022).

Professional values also develop throughout a person's lifetime. Nurses learn professional values in school and the workplace (Kosmidis et al., 2021). Developing a solid sense of values increases professional and patient satisfaction.

Value System

A **value system** is the sum of an individual's or group's values. Just like individuals, groups have sets of values, often clarified as codes of conduct, tenets, commandments, or simply value statements (Sagiv & Schwartz, 2022). The factors that bind individuals as a group can also influence their value system. Multiple factors can bind such groups, including religion, profession, interest, economics, business location/facility/company, and ethnicity.

Individuals' value systems are often personal and created from their experiences, environment, and genetics. By contrast, groups' value systems are generally thought-out principles created to guide group members in their behaviors and actions (Poorchangizi et al., 2019).

LINK TO LEARNING

The World Health Organization (WHO), the health agency of the United Nations, is an international healthcare agency focused on global health care. The WHO Values Charter (https://openstax.org/r/77WHOchart) discusses values for human rights, life, and healthcare equity. They state their group value system to guide the values with which WHO employees are supposed to perform their jobs.

Professional Nursing Values

Like most professions, nursing has a highly formative system of values. In a concept analysis (an exploration of

meaning) of nursing professional identity, 62 percent of the sixty-eight articles analyzed cited shared values and ethics as definitive characteristics of the nursing profession (Fitzgerald, 2020). These values reflect how nurses should conduct themselves and behave toward patients, other healthcare workers, and even themselves (Poorchangizi et al., 2019). Professional values such as altruism, autonomy, integrity, social justice, and human dignity are core components of nursing beliefs and practices. Furthermore, nurses are bound by the Code of Ethics for Nurses (discussed in 16.2 Ethics in Nursing Practice) and the standards of nursing practice. Nurses learn these values and ethical codes and how they are practiced (Fitzgerald, 2020). Additionally, as the single largest group of healthcare workers, nurses must adhere to their core professional values, acting as role models for other professional disciplines (Kosmidis et al., 2021).

Altruism

Working for the well-being of others, or **altruism**, is one of the core values of nursing practice (Figure 16.2). It is inherently connected to the understanding that nursing is a profession of caring for others. The foundation of nursing practice and decision-making is rooted in altruism, which frequently plays a role in the decision to pursue nursing as a profession (American Nurses Association [ANA], 2021; Chen et al., 2022). Altruism affects the nurse/patient relationship and the willingness of the individual nurse to fully embrace other nursing values (Chen et al., 2022). It is easy to lose sight of altruism in today's modern healthcare settings, which are often driven by business models rather than models of human caring (Chen et al., 2022). However, nurses must continue to embrace altruism because caring for others is central to the profession.

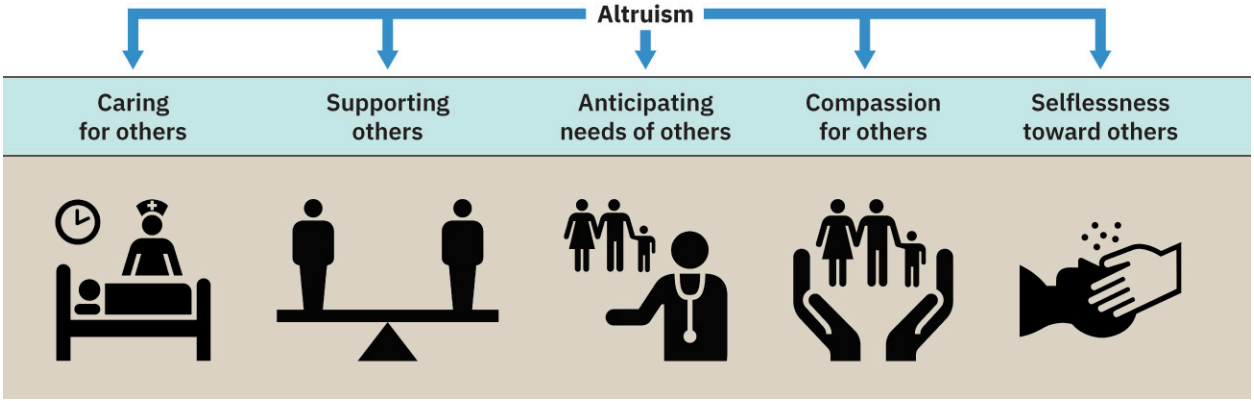

FIGURE 16.2 Altruism in nursing means making the well-being and care of others the primary goal. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

While altruism is core to nursing, it is sometimes difficult to maintain. Patients may present challenges in their demeanor, exhibiting emotions such as anger, confusion, or manipulation. Occasionally, these circumstances can pose difficulties in providing care with a compassionate and tender approach. Keeping an altruistic attitude through difficult times is essential for nurses to learn (Kubsch et al., 2020). Remembering that all patients are vulnerable, even the "difficult" ones, and providing care for them all with kindness and respect supports the altruistic, caring core of the nursing profession.

Autonomy

The value of **autonomy** reflects the individual's ability to make decisions and decide on a course of action based on being well informed, giving consent, and volunteering, all without coercion. There are two prongs to autonomy: patients' right to self-determination and nurses' right to act autonomously. The value of autonomy is built into the ANA Code of Ethics and runs through many nursing standards (ANA, 2015).

Ensuring patients' inclusion and participation in the decision-making process about their diagnosis and treatment is key to preserving their autonomy. Patients have the right to accept or refuse treatment, understand the implications of their choices, and be supported throughout the decision-making process. The nursing value of autonomy supports patients in those choices, ensures that patients receive the information they need, aids in determining whether a patient can understand what they are agreeing to, and supports the entire process (ANA, 2015, 2021).

The value of autonomy is as significant in research as in treatment decisions. Research participants have the autonomy to make their own decisions, and nurses must value that autonomy and ensure it is respected by other members of research teams (ANA, 2015). Nurses must use their involvement at all stages of the research process to

protect patient autonomy. "Patients'/Participants' welfare [and autonomy] may never be sacrificed for research ends" (ANA, 2015, p. 28).

Nurses also share the value of autonomy for their own practice (ANA, 2021). Within the bounds of their professional practice acts, nurses have the right to perform their duties autonomously. Nursing leaders at all levels have championed nurses' ability to have stronger voices within the healthcare arena and be allowed their autonomy. Thus, nurses are allowed to make decisions, truly advocate for their patients, and deeply engage in the entire process (ANA, 2021).

Integrity

The value of **integrity** presents as honesty, moral consistency (supporting what is "right" even when it is not popular), and commitment. Nurses must hold themselves accountable for the value of integrity in all their activities. The patient's interests must always be primary (ANA, 2015). Further, nurses must maintain their integrity and behave within the bounds of their nursing professional values. Nurses must have the integrity to protect patients from incompetent, illegal, unethical, and/or impaired practice, even when others are unwilling to speak. Most agencies have processes for reporting concerns, and nurses must be willing to use them to keep their own integrity and that of the profession (ANA, 2015).

In healthcare environments, there are times when the value of integrity is threatened. Situations may present a **conflict of interest** when a nurse cannot hold the patient's interests as primary. The nurse must "address such conflicts in ways that ensure the patient's safety and that promote the patient's best interests while preserving the professional integrity of the nurse and supporting interprofessional collaboration" (ANA, 2015, p. 5). Conflicts of interest that can negatively impact a nurse's integrity might include caring for a family member, friend, or enemy, being asked to bill for services not provided, withholding information from a patient, falsifying records, and/or being asked to act outside of the patient's best interest. When conflicts arise, nurses must seek guidance from their leadership in deciding the correct actions. Nurses must continuously work to support integrity in the workplace and expect it from themselves and other healthcare professionals.

When a nurse refuses to perform an action that violates their personal sense of integrity, the refusal is known as **conscientious objection**. Nurses can preserve their integrity and refuse to act as long as they are not refusing based on personal prejudices such as bias and/or convenience (ANA, 2015). If a nurse chooses to use conscientious objection to refuse to violate their professional integrity, they may face consequences. For example, a nurse who holds strong ethical or religious beliefs against participating in certain medical procedures, such as abortion or assisted suicide, may refuse to take part in such procedures, due to conscientious objection. As a result, they might face consequences, such as disciplinary action or a negative performance evaluation. However, many agencies have policies that allow nurses the autonomy to express conscientious objection, provided that the nurse ensures patient safety and does not leave a patient without someone providing for their care (ANA, 2015).

Human Dignity

The belief that every individual has worth based on being human is called **human dignity**, and all humans share this worth equally. A belief in the value of human dignity is fundamental to the nursing system of values. It should underline every interaction a nurse has with patients, healthcare workers, family members, and community members (ANA, 2015). The importance of human dignity is closely linked to autonomy, as both uphold an individual's right to make their own decisions. Even if the nurse disagrees with the patient, human dignity allows an individual patient to make their own decisions and be supported by the nurse.

The nursing profession is also committed to championing human dignity beyond the bedside. Nurses are involved in human rights campaigns and collaborative strategies to ensure equality in health care for all people (ANA, 2015). Nurses involved in human subjects research must remember to value the human dignity of research participants and that a human being is being studied; it is important to protect at-risk populations from being disrespected or devalued.

Social Justice

An inherent belief that all people deserve equal treatment and access to health care is called **social justice**. This value encourages nursing professionalism and influences organizations to work toward health equity for patients and communities (ANA, 2021). Social justice means that nurses supply the same high-quality treatment for all patients, regardless of socioeconomic status. From a nursing standpoint, it does not matter if a patient has

insurance, can speak the dominant language of the location, or has racial, ethnic, gender, religious, or political differences. All patients should be treated equally, with dignity and respect (ANA, 2021).

LINK TO LEARNING

Nurses have many opportunities to engage in social justice activities locally, nationally, and internationally. Explore some ways members of National Nurses United involve themselves with social justice (https://openstax.org/r/77membNNU) issues.

A belief in social justice develops naturally from other nursing professional values such as altruism, integrity, autonomy, and human dignity. Together these values represent the social contract for the nursing profession that extends beyond hospital walls and physician offices and into the heart of the community (ANA, 2021). Nurses must look beyond personal biases to fight for the rights of all people to have fair and equal access to health care, both in daily nursing practice and in nursing research. This value is inherent in four of the five current research lenses supported by the National Institute of Nursing Research (Figure 16.3).

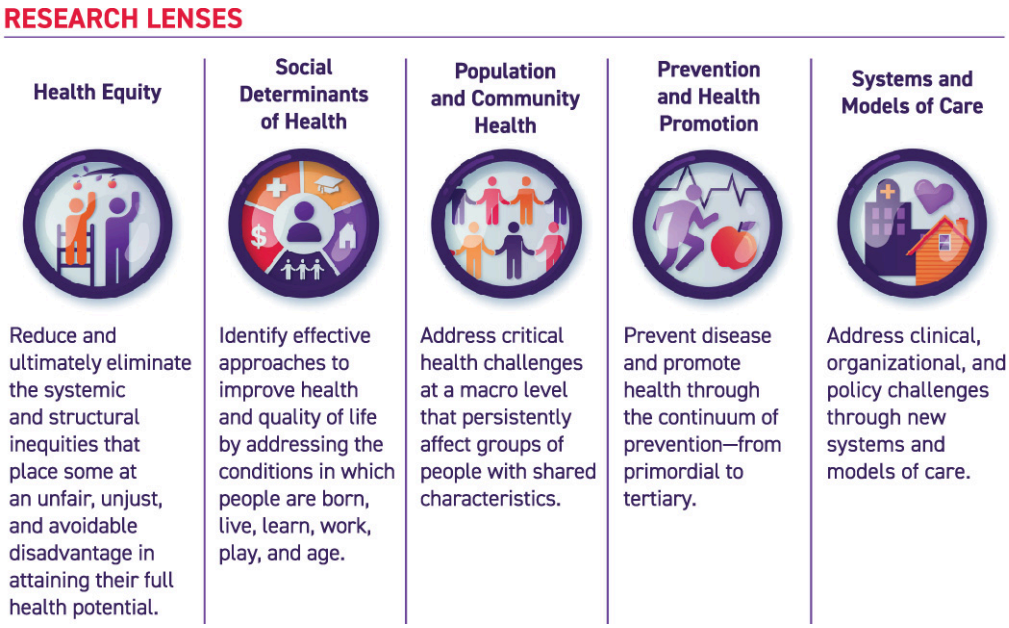

FIGURE 16.3 See how the value of social justice is inherent in research foci of health equity, social determinants of health, population and community health, and prevention and health promotion. (credit: "2022-2026 Strategic Plan" National Institute of Nursing Research, Public Domain)

Process of Structuring Values

Nursing values are the principles upon which the nursing profession is built. Nursing values become internalized in nurses and throughout the profession. They are structured into nursing standards of practice, codes of ethics, nursing organizations, agency departments of nursing service, and even the nursing process (Habeeb, 2022).

For most nurses, the values of the nursing profession also align with their personal values. Why else would they choose this profession? However, if the personal values of most nurses generally align with the values of the nursing profession, then why do some nurses behave differently? Studies have shown that individual nurses' emphasis on different nursing values is directly linked to their own personal values (Habeeb, 2022). Since everyone's personal experiences are different, so are their interpretations of nursing values and their applications to nursing practice.

Assessing Values

There is great benefit in assessing values. Professional values can be taught in classes or textbooks or learned through observing role models. However, understanding one's personal values is always useful. Some agencies include personality and values inventories before hiring staff members. Some schools also use these inventories to help their students make determinations about ideal professions.

Several values assessment inventories are available to explore values in oneself or others (Chowdhury, 2023). For example, the Personal Values Assessment is one values measurement tool. It focuses specifically on personal, social, and universal values. It provides a basis to understand one's own beliefs about right and wrong (Chowdhury, 2023). There is also a Nurses Professional Values Scale-3, written using the ANA's Code of Ethics to measure nursing values. It has been validated in English and several other languages (Weis, 2017).

LINK TO LEARNING

There are suggestions to use in considering your own values (https://openstax.org/r/77corevalue) and knowing your core values. Check some of them out and consider how your own values align with those of the nursing profession.

Application of Values in Clinical Practice

Once professional nursing values are established and learned, how are they applied? How do nurses use these values in clinical practice? How are they recognized by patients, colleagues, leadership, and even friends or family? It would be easy to simply state that they should be obvious based on an individual nurse's actions and behaviors. However, this response does not provide clarity or concrete discussions of how values are applied or show how they are structured into the fabric of nursing. Instead, let us explore the nursing process, assessment, diagnosis, outcomes/planning, implementation, and evaluation, to see how principles of nursing values are integrated into the strategies that nurses use in clinical practice (Table 16.1).

Process Step	Description	Examples
Assessment	The nurse collects and analyzes objective and subjective information about their patient.	• Preserving patients' human dignity by remaining professional and offering respect and privacy throughout the process • Offering culturally competent care and assessing patients' cultural needs without judgment • Fostering autonomy by including shared decision-making and ensuring patients understand why questions are being asked and how their information will be used • Showing honesty and integrity during assessments by coming back when they told the patient they would be back, answering questions and admitting when answers are unknown, and finding answers for questions the nurse does not have ready answers to
Diagnosis	The nurse uses clinical judgment to determine the patient's needs regarding nursing care.	• Recognizing how patients' health is dictated, to some extent, by the social determinants of health (SDOHs), the conditions in and under which people live and work, such as economics, education, and social environment • Ensuring every patient with chronic pain receives a nursing diagnosis reflecting their pain regardless of the underlying circumstances or the patient's background, also speaks to integrity, human dignity, and social justice • Refusing to allow personal prejudices to interfere with the nursing diagnosis process, which is another way to show altruism, integrity, human dignity, and social justice • Taking responsibility for one's role in the diagnostic process, which also shows integrity

TABLE 16.1 Nursing Values Expressed in the Nursing Process (Sources: American Association of Colleges of Nursing, n.d.; ANA, 2021; International Council of Nurses, 2021; Royal College of Nursing, 2023.)

Process Step	Description	Examples
Outcomes/ Planning	The nurse identifies desired outcomes and develops nursing plans to help achieve those outcomes.	• Ensuring patients have a role in the decision-making process for determining outcomes and safeguarding their informed consent fosters autonomy • Completing all planning while providing culturally appropriate care and understanding, which respects human dignity • Encouraging interdisciplinary teams to develop plans that patients can maintain once they are discharged, which speaks to both autonomy and social justice • Advocating for equal treatment for all patients with similar conditions, demonstrating human dignity and social justice values
Implementation	The nurse puts various interventions and plans into action to help the patient gain/regain the desired outcomes.	• Ensuring patients receive the care they need in all areas, which involves altruism and deep caring for the patient as an individual • Reporting concerns or seeking additional guidance in situations that appear hazardous or unethical, which reflects professional integrity • Guaranteeing patients and their families receive appropriate information and education regarding interventions, providing informed consent, and using language interpreters when necessary, which all show the nursing values of autonomy, social justice, and human dignity • Advocating for all patients to have the same access to interventions, which reflects social justice
Evaluation	The nurse evaluates progress toward outcomes.	• Providing all patients with the opportunity to respond to their perceptions of how well outcomes have been met (such as with pain), which embraces the values of autonomy, human dignity, and social justice • Ensuring that if the original set of interventions does not result in desired outcomes, new interventions are introduced, which reflects altruism and integrity

TABLE 16.1 Nursing Values Expressed in the Nursing Process (Sources: American Association of Colleges of Nursing, n.d.; ANA, 2021; International Council of Nurses, 2021; Royal College of Nursing, 2023.)

16.2 Ethics in Nursing Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the role ethics plays in nursing
- Identify different theories of ethics
- Recognize ethical conduct and decision-making in nursing

Ethics are embedded in everything nurses do. They are intertwined with nursing values and intertwined in nursing standards of practice. They underlie nursing principles. Further, there is a well-defined ethical code of conduct for nurses to use when questions regarding right and wrong arise. All nurses must understand nursing ethics and use them daily in their professional practice.

Nursing Ethics

A branch of philosophy, **ethics** is a set of moral principles, virtues, or ideals that guide behavior and help distinguish right from wrong, and **nursing ethics** provide a moral base from which nurses work. The most recent version of the ANA *Code of Ethics for Nurses* (also known as The Code) was published in 2015 and reaffirmed in the fourth edition of the *Scope and Standards for Nursing Practice* published in 2021. The Code and the corresponding documents lay an ethical blueprint for all nurses in the United States to follow.

Nursing Ethical Virtues

A character trait or habit that is considered morally good is called a virtue. They are learned behaviors and attitudes and can be taught in school and through experiences, such as caring for older relatives, siblings, or pets. Many consider virtues, such as caring, compassion, discretion, trust, integrity, and consciousness, fundamental to nursing practice and ethics (Kosmidis et al., 2021). Note that virtues can also be values; however, a value is an internal belief in a concept, while a virtue is the execution of that belief. Consider the concept of integrity. The *value* of integrity is a belief in honesty, moral consistency, and commitment. The *virtue* of integrity is acting on that belief with honesty and clarity, even in the face of one's failure. For example, a nurse who goes to their nurse manager after making an error and informs the nurse manager of their error is acting with the virtue of integrity (Kosmidis et al., 2021). In this sense, nursing virtues are the outward expressions of inner nursing values. Another example of a nursing ethical virtue is **moral courage**, the willingness to stand up for what is moral and ethical even when it may negatively impact the nurse (Pajakoski et al., 2021). Moral courage helps to safeguard patients and protect nursing standards.

Ethical Principles in Nursing

The background concepts that underlie the essence of ethics and can also guide behavior are known as **ethical principle**s (Weiss et al., 2019). As with values and virtues, there is some overlap between principles, values, and virtues. The main ethical principles that underpin the nursing Standards of Practice and Code of Ethics for Nurses are as follows (Weiss et al., 2019):

- Autonomy: Patients should have the right to make their own decisions.
- Justice: As an ethical principle, **justice** is somehow both the same and yet bigger than the value of social justice. It is a principle that requires nurses to treat all people equally and judge them on the same criteria, no matter who they are, what their illness is, or how much money they have.
- Confidentiality: The principle of **confidentiality** focuses on maintaining patient privacy in terms of both health and personal information. It is both an ethical principle and a legal issue (discussed in 16.3 Legal Dimensions of Care).
- Accountability: The principle of accountability means that nurses accept responsibility for their own actions. Standards of care, policies, and procedures help maintain accountability by ensuring that there is a template of what should have been done to compare against what was done.
- Nonmaleficence: The principle of **nonmaleficence** means that nurses should do no harm either intentionally or unintentionally. They are expected to protect those who cannot protect themselves.
- Fidelity: A principle of faithfulness and loyalty is **fidelity**. Nursing requires fidelity to the profession and patients and is an underlying principle in accountability.
- Beneficence: The principle of **beneficence** is that nurses should do good for the benefit of others. Beyond simply providing competent care, nurses should truly care for their patients and seek to meet their physical, social, or emotional needs.
- Veracity: The principle of truthfulness is **veracity**. Nurses are expected to be honest with their patients. Veracity is also an underlying principle behind integrity.

UNFOLDING CASE STUDY

Unfolding Case Study #3: Part 1

The nurse is caring for a 58-year-old female with metastatic lung cancer who is a patient on the oncology unit of the hospital. The patient's health has been deteriorating for the last few months, and she has expressed an interest in discussing palliative care options.

Past Medical History	Patient has been receiving chemotherapy intermittently over the last two years. She reports one brief period of remission six months ago; however, the cancer returned shortly after. **Medical history:** Chronic obstructive lung disease, one pack/day smoker for over thirty years, gastroesophageal reflux disease. **Social history:** Three adult children, no known medical conditions. Husband of thirty-five years passed away five years ago in a car accident. **Family history:** Both parents deceased from natural causes. **No current medications and no known allergies. Last chemotherapy round ended two months ago.**
Nursing Notes	**0900: Assessment** Patient reports she does not wish to receive another round of chemotherapy and is ready to discuss palliative care options. Consult placed to palliative care team who plans to round on her this afternoon. When asked about family, patient reports: "They will want to keep me alive and change my mind about chemo, but I just can't do it anymore. Please don't contact them. I don't want them to know about this."

1. Recognize cues: What cues does the nurse recognize as being the highest priority at this time?
2. Analyze cues: Which ethical principle is most relevant to the patient's current situation?
3. Prioritize hypotheses: Why do you think the patient is requesting for her family to not be contacted regarding her decision to pursue palliative care? Does this request require follow-up or intervention by the nurse?

Standards of Professional Nursing Practice

The **Standards of Professional Nursing Practice** are statements of functions and conduct that all nurses, in every setting, are expected to execute capably (ANA, 2021). They are not, in and of themselves, ethical statements. However, they are informed by nursing professional values, virtues, and morals. Further, their proficiency requires an understanding and appreciation of the body of nursing ethics. Each set of standards includes several competencies registered nurses are expected to meet upon graduation from nursing school and additional competencies expected of advanced practice and graduate level–prepared nurses.

There are two sets of nursing standards (ANA, 2021). The first set, the **Standards of Practice** (referring to ANA's *Nursing: Scope and Standards of Practice*) is based on the nursing process. The Standards of Practice form the basis of rules regarding decision-making, care provision, and practice behaviors. They include the standards of assessment, diagnosis, outcome identification, planning, implementation, care coordination, patient education, and evaluation. Similar to how nursing values become incorporated into practice through the nursing process, nursing ethics are interwoven throughout the Standards of Practice despite not being explicitly about ethics.

The second set of professional standards is the **Standards of Professional Performance**. These standards represent professional nursing behaviors and mindsets. The Standards of Professional Performance include advocacy, respect, communication, collaboration, leadership, research, and environmental health. As with the Standards of Practice, the Standards of Professional Performance are informed by and grow out of the nursing professional values. One additional standard of professional performance, the Code of Ethics for Nurses, is a set of specific provisions registered nurses are expected to use to guide their practice (ANA, 2021).

The Code of Ethics for Nurses

Values, ethical virtues, and ethical principles are all related to the development of nursing professional practice and practice standards. Now, let us look at the Code of Ethics for Nurses. Table 16.2 provides the nine Code of Ethics for Nurses provisions and a brief discussion of each provision's interpretation.

	Provision	Brief Interpretation
1	The nurse practices compassionately and respects every person's inherent dignity, worth, and unique attributes.	• Respect human dignity and all human rights no matter the nature of the illness. • Establish therapeutic relationships based on trust and compassion. • Recognize the right to autonomy. • Practice respect in all relationships.
2	The nurse's primary commitment is to the patient, whether an individual, family, group, community, or population.	• Address conflicts of interest to preserve patient safety first, then professional integrity. • Collaboration with patients is critical. • Set boundaries in therapeutic and collaborative relationships to protect everyone's safety.
3	The nurse promotes, advocates for, and protects patients' rights, health, and safety.	• Protect the privacy and confidentiality of patients. • Protect human participants in research. • Engage in continuing education to perform with the most current practice. • Participate in a culture of safety. • Take action immediately when faced with incompetent, unethical, illegal, or impaired practice.
4	The nurse has authority, accountability, and responsibility for nursing practice; makes decisions; and takes action consistent with the obligation to promote health and provide optimal care.	• Make decisions with authority and are accountable and responsible for those decisions, judgments, and actions. • Be responsible and accountable for assigning and delegating nursing tasks.

TABLE 16.2 The Code of Ethics for Nurses (Source: ANA, 2015.)

	Provision	Brief Interpretation
5	The nurse owes the same duties to self as to others, including the responsibility to promote health and safety, preserve wholeness of character and integrity, maintain competence, and continue personal and professional growth.	• Respect human dignity, including respect for self. • Be responsible for caring for themselves as they care for patients, as well as modeling the behaviors they teach to patients. • Recognize professional identities impact personal ones, and vice versa. • Hold the right to expect integrity will be respected. • Maintain their competency and seek professional growth.
6	Through individual and collective effort, the nurse establishes, maintains, and improves the ethical environment of the work setting and conditions of employment that are conducive to safe, quality health care.	• Use nursing virtues when caring for patients to guide behavior and actions. • Support and foster moral and ethical work settings. • Contribute to ethical communication with colleagues and patients.
7	In all roles and settings, the nurse advances the profession through research and scholarly inquiry, professional standards development, and nursing and health policy development.	• Contribute to research and scholarly inquiry while maintaining respect for autonomy and human participants. • Participate in and develop policies and standards grounded in professional nursing ethics.

TABLE 16.2 The Code of Ethics for Nurses (Source: ANA, 2015.)

	Provision	Brief Interpretation
8	The nurse collaborates with other health professionals and the public to protect human rights, promote health diplomacy, and reduce health disparities.	• Believe health is a universal right and commit to collaborating with others to achieve human rights and health equity. • Fight for human rights in the face of complex practice settings such as human trafficking and war.
9	The profession of nursing, collectively through its professional organizations, must articulate nursing values, maintain the integrity of the profession, and integrate principles of social justice into nursing and health policy.	• Espouse professional nursing values and ethics. • Affirm the same values across all types and areas of nursing. • Build social justice into the fabric of health policy and nursing service.

TABLE 16.2 The Code of Ethics for Nurses (Source: ANA, 2015.)

LINK TO LEARNING

The ANA provides the Code of Ethics for nurses (https://openstax.org/r/77codeethic) in an online version, which explores the entire Code in great depth, including interpretive statements to assist in understanding them and internalizing their meaning.

Theories of Ethics

One of the earliest theories of ethics, **virtue ethics** was introduced by Aristotle around 2,600 years ago (Rozmus & Spike, 2018). It is based on the idea that people make decisions and perform actions based on their character, and those with good character will behave in a fashion that is consistent with their character (ANA, 2021). Virtue ethics have been widely used in nursing to explain nursing conduct and establish ethical boundaries. The underlying concept is that the virtues important to nursing supply a framework for nursing ethics by encouraging nurses to do what is right and moral.

Immanuel Kant developed **deontology** in the 1700s. The underlying assumption of deontology is that ethical decisions or actions are right or wrong because they meet a moral law or principle (ANA, 2021). People do right because it is the right, rational, and dutiful thing to do. Further, people should only behave as they want everyone to behave (Rozmus & Spike, 2018).

A third classic theory of ethics that influences nursing is **utilitarianism**, also known as consequentialism. Developed by John Stuart Mill in the 1800s, utilitarianism ethics focus on what will do the greatest good for the most people and the least amount of harm for others (ANA, 2021; Rozmus & Spike, 2018). What makes utilitarianism so powerful is that it counts all people as equally important. All three of these classical theories of ethics are still embedded in nursing ethics and have been expanded and incorporated into the ethical systems, approaches, and decision-making strategies used in nursing today.

Principle-Based Approach

The **principle-based approach**, also called principlism, draws strongly from deontology and is perhaps the most dominant approach to ethical decision-making in nursing (ANA, 2021). This approach assumes that ethical principles can guide all actions and decisions for nurses (De Panfilis et al., 2019). Refer to provision two of the Code

of Ethics for Nurses (Table 16.2), and consider it in terms of the principle-based approach. The primary commitment of the nurse is to the patient, and the patient can be an individual, group, family, or community. When providing nursing care, the guiding principles should be based on the needs of the patient (De Panfilis et al., 2019). For example, engaging in conversations about risks and benefits or ensuring patients have name or alert bracelets to reduce medical errors are all ways to support principles of ethical decision-making (Vearrier & Henderson, 2021).

Care-Based Approach

The **care-based approach** combines the action of offering physical care for another human being and the value of caring about the individual, recognizing their frailty and vulnerability (De Panfilis et al., 2019). It carries an underlying assumption that as a species, human beings are mutually dependent on each other and need respect, protection, and caring. It further recognizes the state of being ill and the experience of being ill are connected, and patients are treated both through physical care and therapeutic relationships between providers and patients (De Panfilis et al., 2019).

The care-based approach draws a strong sense of morality in action from virtue ethics. A nurse using the care-based approach employs virtues such as respect to actively build their therapeutic relationships with patients. They also use deontology for many of the same reasons, because actively supplying care in all ways is morally right (De Panfilis et al., 2019). The care-based approach also requires authenticity and genuineness—legitimate care for the individual patient, not one that is faked by the nurse.

Feminist Ethics

Over 90 percent of the international nursing workforce is female, and nursing has been a dominantly female occupation since the days of Florence Nightingale. Feminist ethics arose out of a desire to provide a feminist lens to the male-dominated field of philosophy and ethics and to relocate an understanding of women's roles in health care as careers (Kohlen & McCarthy, 2020). As a result, feminist ethics arose out of a need to critically appraise the gendered nature of traditionally held theoretical perspectives: to challenge the status quo and explore ethics from a female perspective. Because, historically in Western societies, men and male-dominated professions have had more power than women and female-dominated professions, feminist ethics in nursing initially sought to shine a light on how distorted and institutionalized understandings of male/female differences impacted health care (Kohlen & McCarthy, 2020). Thus, from its earliest beginnings, feminist ethics explored relationships and power, with an underlying recognition that society has internalized understandings of gender that marginalize and disempower women.

In the four plus decades since feminist ethics initially arose, the overarching understanding of internalized prejudices inherent in areas such as institutionalized racism, sexism, ageism, and classism, have become cornerstones of what began as simple feminist ethics. It seeks to unpack the social, cultural, economic, and even political issues that impact healthcare affordability, accessibility, equity, and even justice (Kohlen & McCarthy, 2020). No longer simply focused on gendered roles, today's feminist ethics could perhaps more accurately be called the ethics of social justice. Today's feminist ethics draws on its history to situate nursing care in relation to oppression and power, not only of male versus female, but in all healthcare relationships where a difference in power impacts the individual's ability to receive the care they need.

Ethical Conduct and Decision-Making

Behaving in a manner aligned with the Code of Ethics for Nurses, nursing values and virtues, and nursing ethical principles, is known as **ethical conduct** and is expected of nurses in all situations (Figure 16.4). However, behaving ethically is not always easy, and nurses are often forced to engage in decision-making strategies, alone or as part of the healthcare team, to determine what action is ethically appropriate.

FIGURE 16.4 Nurses face a variety of ethical dilemmas when they make decisions in their daily practice. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

There are several strategies that can assist nurses in appropriate ethical decision-making. The ANA discusses some of them in the *Nursing Scope and Standards of Practice* (2021). For example, the MORAL model of ethical decision-making encourages the user to "massage" (explore) the situation, "outline" the possible decisions, "review" the ethical criteria, "affirm" (choose) an option, act on it, and "look" back to assess the appropriateness of the decision (ANA, 2021).

Moral Distress

Knowing an ethically correct action but being unable to perform it, due to either internal or external forces, or being forced to act outside one's personal and professional values is known as **moral distress** (Weiss et al., 2019). It is a sign of moral attentiveness in nurses, an indication of how important the nurse holds the values and ideals of the nursing profession (Rushton, 2023). Nurses are in a unique position when it comes to moral distress. They may be directed to act in ways they perceive as immoral based on orders from providers (Kennedy et al., 2023). Also, as part of the healthcare workforce that spends the greatest amount of time with patients, nurses immediately observe the impacts of ethically questionable decisions.

Nurses experiencing moral distress often report emotional and physical problems such as headaches, abdominal upset, anger, frustration, and depression (American Association of Critical-Care Nurses [AACN], n.d.). Some nurses leave the profession as a result (Weiss et al., 2019). During times of crisis, nurses are more likely to experience moral distress as they are exposed to breakdowns in the system and resource difficulties (AACN, n.d.). For example, many nurses experienced substantial moral distress during the COVID-19 pandemic as facilities were forced to ration care, were forced to work with dangerously low staffing levels, and found it difficult to uphold their duty to care. Nurses and other healthcare workers knew what patients needed but were unable to provide that care. In many instances, the conditions faced during the pandemic lasted long enough to cause moral injury (Ĉartolovni et al., 2021). If an individual cannot manage that distress or if it is sustained over time, it can become **moral injury**, in which they are psychologically harmed by being forced to act outside of their value system, resulting in conditions such as major depression and post-traumatic stress disorder (British Medical Association, 2021).

The AACN offers a position statement on moral distress during times of crisis (2020). The statement offers several strategies nurses can use to prevent and manage moral distress, including the following:

- Paying attention to your internal compass to recognize when you are being asked to perform outside of your comfort zone
- Expanding your knowledge of ethics through reviewing the various Codes of Ethics for nurses as well as your facility's ethics policies
- Recognizing the signs and symptoms of moral distress in yourself and your coworkers
- Seeking out trusted mentors to talk through issues with
- Using resources such as employee assistance programs and/or counseling to work through moral distress
- Maintaining one's work-life balance and leaning on loved ones

LINK TO LEARNING

The Moral Distress Education Project (https://openstax.org/r/77morldistr) is a documentary presenting information about moral distress (developed by the University of Kentucky's Bioethics Program). Explore some of the various themes and resources offered to help understand and manage moral distress.

Conscientious Objection

The inner feeling or voice inside an individual's head that tells them whether actions, thoughts, or behaviors are right or wrong, is called one's **conscience** or moral compass. A related concept is conscientious objection, the act of voicing an objection or refusing to act or behave in a manner that is allowable by one's practice act but which the nurse finds objectionable or moral on religious grounds (ANA, 2022). The right of nurses to act on their conscience is internationally recognized (Lamb & Pesut, 2021). Most professional organizations, including the ANA, agree that a clinician should not be forced into performing therapies and interventions they find morally unacceptable (Kennedy et al., 2023). Thus, while nurses should always respect and value the autonomy and values of their patients, they also have the right to act in ways that are morally affirming for themselves (Lamb & Pesut, 2021).

When determining whether to raise a claim of conscientious objection, a nurse's first consideration must be the patient. How will the patient be impacted by their claim? How will the rest of the healthcare team be impacted? When experiencing a conscientious objection, it is critical to disclose it as soon as possible to someone with the authority to change assignments in order to mitigate any potential compromise to patient care (Anderson & Henriksen, 2019). In the same vein, it is essential to never make a conscientious objection against a person. A conscientious objection is objection against an action, intervention, or therapy, never an individual (Anderson & Henriksen, 2019). Further, nurses must never abandon a patient without ensuring another nurse has assumed their care, as doing so is considered abandonment and is an ethical violation, contrary to the fundamental principles of nursing (Anderson & Henriksen, 2019; Kennedy et al., 2023). When a nurse leaves or abandons a patient's care without making sure another qualified nurse is ready to take over and continue providing necessary medical attention and support, that is called **abandonment**. Beyond the immediate impact on patient well-being, abandonment carries serious consequences for the nurse, such as legal ramifications (including potential lawsuits), disciplinary actions from regulatory bodies, and termination of employment.

LIFE-STAGE CONTEXT

Medical Aid in Dying

Medical aid in dying laws allow adult individuals who are competent, have terminal illnesses, and meet state criteria to administer medication to themselves that will end their lives. There are currently ten U.S. states that allow medical aid in dying: Maine, New Jersey, Vermont, New Mexico, Montana, Colorado, Oregon, Washington, California, and Hawaii, as well as Washington, DC. Providers are responsible for prescribing the medications, and nurses are legally and ethically prohibited from administering them. However, nurses must still be able to engage with patients in end-of-life conversations, are often the initial point of contact for a medical aid in dying conversation, and must understand the ethics and laws around this controversial topic.

There are two ethical sides of medical aid in dying. Individuals who believe medical aid in dying laws are right cite ethical issues of autonomy and self-determination, prevention of suffering, and ensuring all patients have access to all care options. Those who are uncomfortable with the ethics cite the violation of the sanctity of life and the conflict with professional values to do no harm. Nurses should be knowledgeable about the laws in their states and remain objective when working with patients considering this option. They must protect the confidentiality of their patients as well as other healthcare professionals involved in the process.

Nurses have a right to conscientious objection to assisting and working with patients who choose to end their lives. However, nurses living in states where medical aid in dying is legal and who have a conscientious objection to medical aid in dying must notify their employers before the situation arises and cannot abandon such patients or refuse to provide appropriate nursing medical care (ANA, 2019; Haring, 2023).

Common causes for conscientious objection include medically assisted dying, abortion, and gender-affirming surgeries (sex reassignment surgery). Nurses in organizations in which conscientious objection is unacceptable show higher levels of stress and burnout (Lamb & Pesut, 2021). By contrast, some agencies request information from staff about situations in which some may experience conscientious objections in advance of such situations occurring. This decreases the risk of having to negotiate last-minute staffing changes and potentially compromise patient care (Anderson & Henriksen, 2019). For example, a nurse manager on a palliative care unit might ask staff members how they feel about medical aid in dying (in a state in which it is legal), to determine which nurses may not be willing to participate in these procedures.

REAL RN STORIES

Conscientious Objection to Chemotherapy

Nurse: Chantrell, BSN
Clinical setting: Medical-surgical unit
Years in practice: 10
Facility location: Large Veterans Affairs (VA) hospital in Kentucky

Our unit has a variety of patient types. We do not have an oncology wing in our hospital, so it is not uncommon to get oncology patients on the unit. Intravenous chemotherapy may only be administered by RNs who have undergone specialized training and are certified to administer these drugs. Most of the RNs on the unit who have been there for at least one year have completed the training.

We do have one nurse, Mirlande, from Haiti. She had a conscientious objection to giving chemotherapy. I never quite understood why she was unwilling to give it, but she was adamant. Mirlande has been on the unit since before the time when we began giving chemotherapy. When we started doing chemotherapy treatment, she went to the nurse manager to request agreement that she not have to provide chemotherapy based on conscientious objection.

I did not even know that we were allowed to make such a request, but we are, and Mirlande does not take chemotherapy patients on days on which chemotherapy infusions will be given. If staffing does not allow her to have an entirely different assignment, then she will take a chemotherapy patient if another nurse manages the chemotherapy infusion. It can make staffing difficult, but we all respect her for standing up for her beliefs.

Ethical Considerations

Most of the day-in and day-out decisions a nurse makes are very clear-cut in terms of their ethics. However, all nurses will have occasions when they must consider the ethics of a situation. A circumstance that causes a nurse to stop to think through the ethics of a situation is called an **ethical consideration**. The choices are not necessarily difficult ones; however, they are ones for which the nurse must think about whether one decision is more ethical than another. A nurse may find themself unable to keep the provisions of the Code of Ethics for Nurses equally and must decide how best to manage a situation.

REAL RN STORIES

Ethical Considerations

Nurse: Amy, MSN
Clinical setting: Intensive care unit (ICU), night shift
Years in practice: 8
Facility location: Rural area in Tennessee

While we generally do not keep terminal patients in the ICU, a few years ago, we had a 45-year-old male, Bruce, dying of terminal cancer that had been diagnosed after his admission due to pneumonia one week earlier. Bruce had been approaching end of life for two days. He had made his peace with his impending death and said goodbye to his adult children. However, he had one teenage son whom he kept asking for. His wife, Maria, told all of us that she wanted their son to remember his father as he had been before getting sick. During our shift report, the day shift nurse told me she thought he was only hanging on to see his son but that she also respected Maria's decision. When I assessed him that evening, Bruce was in a great deal of pain but told me that he refused to die without seeing his child.

The situation upset me and made me so sad. I had a responsibility to care for both Bruce and his family in their time of grief and had to consider the ethics of the situation. I had been debating approaching Maria with my concerns, and then she came to me in tears, asking how to help Bruce let go and pass so he did not have the pain anymore. I took the opportunity and gently suggested that he was holding on to say goodbye to his son. She asked me if I truly believed that, and I said I did. She also said again that she wanted her son to remember Bruce as being healthy, not as sick and dying. I reminded her that children are resilient, and that her son might always hurt worse that he had not been able to tell his father goodbye. I was able to meet my obligation to Bruce by advocating for his needs.

Later that evening, Maria brought the son in to see Bruce. Bruce chatted with his son for a little while and was able to say goodbye. He died peacefully shortly after. I will admit that I cried a bit with my coworkers because the situation was so very sad, but I was also proud that I had handled the situation the way I had.

Ethical Dilemmas

A **dilemma** is a choice between two or more potentially correct answers. An **ethical dilemma** occurs when there *must* be a choice between two or more or more actions, both of which are equally good, both of which are equally bad, or for which the benefits of both actions are unknown (Rich, 2023; Weiss et al., 2019). They also occur when members of the healthcare team have different ideas concerning what is ethical or unethical in treatment situations (Manderius et al., 2023). Dilemmas are more complicated than considerations. In an ethical consideration, the nurse must consider the ethics of a situation, whereas in a dilemma, the nurse must practice some decision-making strategies to determine the most appropriate course of action. When faced with ethical dilemmas, nurses should always keep in mind the nursing values, standards, and Code of Ethics to guide them (Kosmidis et al., 2021). The MORAL model of ethical decision-making is a helpful option for managing ethical dilemmas (Figure 16.5) (ANA, 2021; Center for Public Health Practice, 2022).

MORAL MODEL OF ETHICAL DECISION-MAKING	
MASSAGE THE DILEMMA **M**	• Collect all data • Identify related laws, ethics, and policies
OUTLINE OPTIONS **O**	• Identify options and consequences • Try to have at least three options
REVIEW CRITERIA AND RESOLVE **R**	• Recognize best- and worst-case scenarios • Find applicable ethics and laws for each option
AFFIRM DECISION AND ACT **A**	• Make a decision • Act on the decision
LOOK BACK **L**	• Evaluate success, values, and ethics • Identify what should be different in future

FIGURE 16.5 The MORAL model of ethical decision-making can be used by individuals or groups. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

UNFOLDING CASE STUDY

Unfolding Case Study #3: Part 2

Refer back to Unfolding Case Study #3: Part 1 for a review of the patient data. The nurse is experiencing moral distress about the patient's situation. The nurse is concerned because she has previously interacted with the patient's children before and knows they will be upset if they are not updated on their mother's condition and decision to pursue palliative care. But on the other hand, the nurse knows she must respect the patient's autonomy and her wishes not to contact her family. The following conversation takes place between the nurse and patient:

Nurse: Are you sure you don't want to contact your children about the palliative care decision? It might be nice to have them here with you when the team comes to discuss your options. This is a hard decision to make on your own.

Patient: No, I don't want them involved. I love my kids, but I know them well. They will want me to keep fighting, and I just don't have it in me. I don't want to tell them no and let them down.

Nurse: I understand your concerns. I'm not trying to pressure you or change your mind, but I just want to make sure you are certain about what you want.

4. Generate solutions: Thinking about the "O" of the MORAL model of ethical decision-making, what options does the nurse have at this time?
5. Take action: Of the options identified in the previous question, which is the best action for the nurse to take at this time?

6. Evaluate outcomes: What findings would indicate the nurse's moral distress has improved? What findings would indicate that it has worsened?

CLINICAL JUDGMENT MEASUREMENT MODEL

Generate Solutions: The Four Topics Method

The MORAL model of decision-making is not the only common strategy for ethical decision-making. Another is the Four Topics Method, also known as the Four Quadrant Approach. This strategy works very well with teams. In this strategy, an ethical issue is explored through four separate lenses:

1. Medical indications use the principles of beneficence and nonmaleficence to explore the problem, the treatment goals, and how to best benefit the patient while avoiding harm.
2. Preferences of the patient use the principle of autonomy. This piece explores the patient, their health literacy, their understanding of the situation, their ability to make decisions for themselves, and their concerns.
3. Quality of life embraces the principles of beneficence and nonmaleficence and the value of autonomy to explore how different options will affect the patient's quality of life and ability to return to their baseline.
4. Contextual features employ the principles of justice and fairness. This part explores any implicit bias on the part of providers or family members, any sociocultural or legal issues that may impact decisions, and any resource allocation issues.

Often, once the team explores a given situation from each of these angles, the correct decision becomes clear (ANA, 2021; Rich, 2023).

Ethics Committees

There may be times when an individual or healthcare team is unable to make an appropriate ethical determination. In these situations, a facility's **ethics committee**, a group that works together on a regular basis to address ethical issues within the organization, might be able to help. These committees usually include employees such as providers, nurses, and chaplains, as well as the facility's legal representation and perhaps even community members (Rich, 2023). Ethics committees can assist with clarification when there is confusion about ethical solutions, or they can become involved in making ethical decisions when teams are unable to come to a resolution. Additionally, when patients do not have a surrogate to speak for them and cannot speak for themselves, it is generally an agency's ethics committee that acts on their behalf. Nurses should use their agency's ethics committee when they have questions or concerns about whether situations are appropriate and fully ethical.

16.3 Legal Dimensions of Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the legal concepts for professional nursing
- Recall different legal regulations for nursing practice
- Describe various types of legal actions in nursing practice

The first nursing practice act (NPA) was passed by the New York state legislature in 1938 (Guido, 2020). Since that time, the nursing profession has been bound to laws and legislation that govern health care and the scope of nursing practice. Laws, including those related to nursing and health care in general, change, contract, and expand based on the needs of culture and society. Understanding the legal dimensions of care is critical for all nurses because those dimensions impact daily nursing practices.

Legal Concepts for Professional Nursing

Formal rules, or **laws**, for conduct—professional, political, social, or otherwise—govern behavior and are created and sanctioned by various governing bodies, such as Congress and states. Nurses are bound to work within laws established nationally and locally, by agencies and professional associations and by state boards of nursing (SBONs).

A requirement that healthcare providers must inform a patient or their surrogate of the potential benefits, risks, and alternative treatments for a procedure or treatment that is being offered is called **informed consent** (Weiss et al., 2019). Informed consent is a legal concept, typically memorialized in a specific document within a patient's chart. Nurses should not be providing the details of the documents, such as risks, benefits, and alternatives; that is the provider's responsibility. However, the process often includes nurses, particularly as witness to the signature and to confirm that informed consent was obtained prior to beginning procedures or interventions.

The nurse holds the responsibility of ensuring the person signing the consent is of legal age, competent, and voluntarily providing informed consent. The patient must possess sufficient knowledge about the procedure, risks, and alternatives, and their consent should be free from coercion. Generally, consent can only be obtained from mentally competent adults; however, exceptions exist for minors, developmentally disabled adults, emancipated minors, and those with appointed healthcare decision-makers. In cases where the patient is unable to consent, legal representatives, including parents, guardians, or court-appointed individuals, may provide consent on the patient's behalf.

Nurses can be held legally liable if they know appropriate consent has not been obtained and do not inform supervisors or providers (Rich, 2023). Further, when acting as witness, nurses are still responsible to the patient to act as advocate, preserve dignity, ensure concerns receive adequate responses from providers, and ensure patients understand what they are being asked (Weiss et al., 2019). Not getting informed consent from a patient is considered negligence (breach of duty). Further, performing procedures on patients without consent may be considered **battery**. The exception to the informed consent requirement is emergency situations, when implied consent is assumed (Weiss et al., 2019).

Sources of Law

The United States Constitution and the Bill of Rights are the foundation of all U.S. laws (Weiss, et al., 2019). Together they outline the types and limitations of governmental power as well as the rights of citizens. Subsequent laws may not be written that violate these basic rights provided by the constitution. State governments can further expand the rights of individuals; however, they are unable to limit the rights provided by the U.S. Constitution and its amendments. See Table 16.3 for a summary of the types of laws that impact nursing: **constitutional law**, **statutory law**, **administrative law**, **common law**, **civil law**, and **criminal law**.

Type of Law	Definition	Example
Constitutional law	Laws written into the U.S. Constitution and its amendments	This ensures the safeguarding of medical records and that healthcare professionals do not disclose patient information without appropriate consent or a legal basis (protected by the Fourth Amendment to the United States Constitution).
Statutory law	Established by legislative bodies, such as Congress, state legislatures, and local governments	Examples of statutory law include the following: *Federal*: Health Insurance Portability and Accountability Act (HIPAA), Americans with Disabilities Act, Affordable Care Act (ACA) *State:* Nursing practice act

TABLE 16.3 Types of Laws Impacting Nurses (Sources: Guido, 2020; OCR, 2021; Weiss et al., 2019.)

Type of Law	Definition	Example
Administrative law	Policies and procedures established by governments (federal, state, and local), which detail rules and procedures for statutory laws; determines how laws are administered and enforced, and by whom	*Federal:* The U.S. Department of Health and Human Services administers statutory law of HIPAA and developed the specific standards, rules, policies, and strategies with which all agencies must abide to ensure HIPAA is upheld. *State:* State boards of nursing write the rules to enforce the nursing practice acts and manage professional licensure and also act as an enforcement arm for violations of practice acts or professional licensure requirements.
Common law	Based on the tradition of unwritten law that is grounded in the principles of justice, reason, and custom; assumes court decisions set precedents that can be used to decide other cases.	Most civil and criminal law is based on common law.
Civil law	Related to people, things, and the relationships between them	Civil lawsuits, such as malpractice, are brought by an individual or individuals against a healthcare provider, group of providers, or institution; based on the idea that expected care was not provided appropriately and the patient suffered or died as a result; they generally result in fines or monetary awards.
Criminal law	Define crimes and the punishments for people perpetrating them	Criminal charges, such as negligent homicide, are brought by the state based on care (or lack of it) that is so egregious that it rises to a crime; they generally result in punishment, such as jail time,

TABLE 16.3 Types of Laws Impacting Nurses (Sources: Guido, 2020; OCR, 2021; Weiss et al., 2019.)

LINK TO LEARNING

The Affordable Care Act (ACA) (https://openstax.org/r/77ACA) is an important healthcare law signed into legislation. It is designed to ensure access to affordable health insurance to a larger percentage of the population, including those with preexisting conditions.

Legal Regulation of Nursing Practice

Legal regulation of nursing practice occurs at a state level, via SBONs. These SBONs set standards and expectations of nursing practice for the state and strategies to decide when correct care has been provided (Boehning & Haddad, 2022). Legally, nurses are evaluated based on their adherence to the applicable laws of their state as well as their experience and position.

Nurse Practice Act

Each state government sets the **nursing practice act (NPA)**, the statutory law guiding nursing, for their state. The NPAs give authority for nurses to practice as nurses within a given state or given group of states (if a multistate license) (Guido, 2020). The NPAs also define the specific activities that different types of nurses are allowed to perform, scopes of practice, nursing school standards, licensure processes, causes of disciplinary actions, and the legal rights nurses have if complaints are filed against them (Boehning & Haddad, 2022). The SBONs administer the

NPA established by the state legislature and enforce the applicable laws.

Standards

Professionally developed criteria, or **standards**, provide the minimal level of acceptable practice for all individuals within a profession. The ANA established nursing standards to guide the expected behavior of individual nurses. Various nursing specialties, such as perioperative nurses, have additional standards that nurses working in that specialty are expected to meet. State boards of nursing and professional organizations establish practice standards and define the responsibilities of nurses (Boehning & Haddad, 2022; Weiss et al., 2019). Institutions also establish internal standards of practice or policy based on, ideally, current evidence-based practice and the availability of resources within a given agency. Individual nurses have a responsibility to meet the standards of practice for their agency and state.

Credentialing

A process that agencies use to ensure that their clinical staff (all healthcare professionals) meet the necessary and legal criteria to practice is called **credentialing**. It involves the verification of a healthcare worker's credentials (qualification such as academic degree, license, expert knowledge) (Health Resources and Services Administration [HRSA], 2023). To complete the credentialing process, a healthcare agency will verify several pieces of information, some of which will be provided by the nurse (Table 16.4).

Type of Activity	Examples of Documentation for RNs
Verification of identity	Government-issued picture identification
Verification of licensure	Must be obtained directly from the state boards of nursing licensing agency
Verification of education/training	Generally, through transcripts and/or diplomas; if a nurse has certifications, that may occur through the American Nurses Credentialing Center
Verification from the Drug Enforcement Administration (DEA) that there are no known issues with a nurse's ability to give medication	Retrieved through the DEA by the agency
Verification of Basic Life Support (BLS) and/or Advanced Cardiovascular Life Support training	Copy or certificate of training completion or active BLS card

TABLE 16.4 **Verification and Credentialing Documentation** (Source: HRSA, 2023.)

Accreditation

Schools of nursing seek accreditation from agencies recognized by the U.S. Department of Education. Accreditation means that a school is teaching a curriculum that meets state and national standards of nursing education (Gaines, 2023). It sets a standardized level of uniformity and consistency across programs, instilling confidence in the comparability of like-degree programs nationwide. This ensures every student is well prepared to provide competent patient care upon graduation (Gaines, 2023).

Licensing

State boards of nursing are fully responsible for providing and managing nursing licenses (Boehning & Haddad, 2022). They set fees and ensure applicants for licensure have completed the requisite education and board testing. They additionally perform criminal backgrounds checks for licensure, if required by law. Further, SBONs ensure nurses renewing their licenses have completed any required continuing education. Finally, they are responsible for revoking or suspending nursing licenses and other disciplinary actions against nurses shown to have conducted themselves inappropriately in terms of the law (Boehning & Haddad, 2022). Licenses for nurses can be tracked through their SBON, which also maintains records regarding actions against an individual nurse's license.

In response to the dynamic nature of health care and the increasing demand for nursing services across state

borders, the **Nurse Licensure Compact (NLC)** has emerged as a solution to facilitate the mobility of nurses. The NLC is an agreement among certain U.S. states to recognize and accept a single nursing license that allows nurses to practice in multiple participating states. This innovative approach aims to enhance healthcare accessibility while maintaining rigorous regulatory standards and prioritizing patient safety. Nurses holding a multistate compact license must adhere to the rules and regulations of the respective state in which they are practicing at any given time. It is essential for nurses to be aware of the specific states participating in the compact and the associated regulations.

Certifications

A certification allows healthcare practitioners to become specialized in one or more subjects as subject-matter experts (edX.org, 2023). Certifications generally require some education (in person, online, or self-study), and the passing of an examination focused on a specific subject area. Many certifications also require a minimum number of practice hours within the area of the requested clinical specialty. In some cases, practice hours within the area of the specialty replace added educational requirements. Many different certifications are available for RNs to obtain, including (but not limited to) medical-surgical nursing, critical care, case management, informatics, occupational health, and addictions.

Laws Affecting Nursing Practice

Numerous laws influence nursing practice both in the workplace and during nonworking hours. One of these is the **Good Samaritan law**. There is a general expectation in most states that healthcare providers will respond and offer voluntary assistance during emergency situations because it is the moral and ethical thing to do. However, many healthcare workers became hesitant to provide such assistance because so many were sued by the very people they were trying to assist. As a result, many states have passed Good Samaritan laws (Weiss et al., 2019). These laws protect healthcare professionals from civil liability in emergency situations as long as they are acting in a way that is expected, reasonable, and prudent for someone with the same background. Another law affecting nursing practice is the Health Insurance Portability and Accountability Act (HIPAA) passed in 1996. The HIPAA developed standards so that patients could understand how their health information was used (see also Chapter 2 Communication and Chapter 9 Safety and Security).

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) is a division of the U.S. Department of Labor. The OSHA is an administrative services agency established to ensure the safety and health of workers in all industries in the United States (OSHA, 2021). OSHA sets regulations for healthcare facilities to follow to protect workers. Their regulations for nursing include topics as wide ranging as workplace violence, safe patient handling, infectious diseases, chemical and pharmaceutical hazards, and enforcement standards.

LINK TO LEARNING

The OSHA has eTools to make it easier for hospitals to identify some of the most pertinent OSHA regulations (https://openstax.org/r/77etool) for hospital settings. Explore some of the common topics to see how facilities should ensure the safety of their workers.

National Practitioner Data Bank

The National Practitioner Data Bank (NPDB) is part of a law passed by the U.S. Congress in response to increases in medical malpractice, medical insurance fraud, and the need to be able to restrict and track incompetent healthcare workers (U.S. Department of Health and Human Services, 2018). The NPDB is a national clearinghouse that provides information on medical malpractice payments and adverse actions against the licenses of physicians, dentists, and some other healthcare providers. It also includes information on medical insurance fraud, actions by other federal agencies, and actions healthcare plans take against providers. The information maintained in the NPDB can be requested by hospitals, state licensing agencies, law enforcement agencies, and individuals requesting the file for themselves. Agencies can then use the information to inform decision-making regarding hiring of staff, offering licenses to individuals moving from other areas, and even law enforcement when there is concern for a pattern of behavior (U.S. Department of Health and Human Services, 2018).

Reporting Obligations

When a nurse or other healthcare professional suspects a patient of being abused or neglected, they may be legally required to report their suspicions to the correct authorities. It is sad but true that (1) a case of child abuse is reported every ten seconds, (2) a high percentage of victims of human trafficking see healthcare providers, and (3) millions of men and women are abused annually by their intimate partners (Carlson, 2024). A nurse is a **mandated reporter**, an individual required by law to report suspected or known abuse against children, older adults, people with disabilities, and between intimate partners. Other mandated reporters include other healthcare workers, law enforcement, teachers, and even clergy (Thomas & Reeves, 2022). Failure to report suspected abuse may result in fines or criminal charges against healthcare staff.

Most of the time, reporting will be made to either law enforcement or agencies, such as child protective services or adult protective services. The specifics of where and how to report vary by state; however, all nurses have a legal and ethical responsibility to report suspected abuse (Carlson, 2024). Mandatory reporting laws generally cover neglect as well as physical, sexual, emotional, and financial abuse (Thomas & Reeves, 2022).

In addition to mandatory reporting of suspected abuse or neglect, there are three other areas of mandatory reporting that are pertinent to nursing. First, there are many infectious agents that require mandatory reporting to health departments for tracking purposes. These diseases include several sexually transmitted diseases, the various types of hepatitis, measles, tetanus, tuberculosis, and many others (Centers for Disease Control and Prevention, 2023). Second, most states have duty-to-warn and protect laws. In these states, nurses and other healthcare providers are required to notify third parties, such as spouses, work groups, or anyone against whom a patient has threatened physical harm.

The final area of mandatory reporting is reporting against other members of the healthcare professions. Most states have laws requiring individuals with healthcare licenses to report (usually to their state boards of health or their state's licensing agency, such as the SBON). While these laws also vary by state, they are generally focused on recognizing and reporting healthcare professionals who are impaired by drugs, alcohol, or other conditions or are practicing in a fashion that is dangerous to patients.

LIFE-STAGE CONTEXT

Abuse of Older Adults

Abuse can happen to any older adult; however, it is most common among women, those without friends or family, and those with disabilities, memory problems, and/or dementia. It is most common for older adults who require help with activities of daily living, such as toileting, bathing, dressing, and managing their medications.

Abuse is surprisingly common among older adults and includes several types of abuse:

- Physical abuse includes both bodily harm and restraining an older adult against their will (such as tying them to furniture or locking them in spaces).
- Emotional abuse (also known as psychological abuse) includes yelling, threatening, and ignoring an older person as well as isolating them from friends and relatives.
- Neglect is characterized by the failure to address the needs of an older individual, which may encompass withholding essential elements such as food, medication, or necessary health care. Abandonment occurs when an older individual is left alone without the necessary assistance and support they need.
- Sexual abuse includes forcing an older adult to watch or engage in sexual acts.
- Financial abuse includes stealing or misusing a patient's belongings or money, such as taking Social Security checks, withholding money, and changing names on wills or home titles without permission.

Nurses and other healthcare professionals should monitor older adult patients for signs and symptoms of abuse that include the following:

- being withdrawn, violent, or agitated
- showing signs of trauma, such as rocking back and forth
- having unexplained wounds, bruises, or scars

- experiencing preventable conditions, such as pressure ulcers
- having poor personal hygiene and dirty clothing
- not having necessary assistive items, such as eyeglasses and mobility devices (National Institute on Aging, 2023)

Patients' Bill of Rights

In the 1970s, the American Hospital Association (AHA) recognized the need for guidelines to support ethical patient care in U.S. hospitals and published the first Patients' Bill of Rights, now known as the Patient Care Partnership (Hunt, 2023). While it is not legally binding, the AHA encourages their member hospitals to tailor the information contained within to meet the needs of their patient populations, and to inform patients of their rights and responsibilities in each hospital system. The Patient's Bill of Rights from the AHA provides a recommended blueprint for member hospitals to use with their own patient populations (Hunt, 2023).

Patients have rights to the following:

- considerate and respectful care
- clear, relevant, and accurate information about diagnosis, treatment, and prognosis
- informed consent and shared decision-making unless incapacitated
- ask questions and receive honest answers, particularly about risks and alternatives
- know caregivers' identities, and when caregivers are students, residents, or trainees
- know treatment cost, both immediate and long-term, as the information is known
- refuse treatment
- have an advanced directive or surrogate decision-maker and expect the agency to honor the designations
- privacy when their information is being discussed between healthcare workers
- confidentiality of communications and records
- access their medical records
- medically indicated care based on urgency
- address conflicts of interest, particularly financial ones between providers and commercial interests
- refuse to participate in research studies
- receive continuity of care and be informed of upcoming care changes
- be informed of hospital policies and practices as well as dispute and grievance resolution

PATIENT CONVERSATIONS

How to Provide a Patient with Information about Their Rights

Scenario: Nurse walks into a newly admitted patient's room. The patient is a 45-year-old Latina female, and she is sitting gently on the bed, looking anxious. A male family member is standing near her with a hand on her shoulder. He looks sternly at the nurse; the patient looks down.

Nurse: Hello Ms. Hernandez, my name is Martika. I will be your nurse this afternoon. Is everything all right? You look troubled.

Patient: Yes, I am worried.

Nurse: Ms. Hernandez, I'm sorry that you are worried. I know you are anxious about being admitted to the hospital. I need to discuss a few things with you and ask you some questions, would you like me to come back since you have company?

Patient: No, this is my husband, Mario. I would like him to stay with me if that is okay.

Patient's husband: She was in another hospital last month. They wouldn't let me stay with her and were mean. When they sent her home, we didn't understand about her medications and follow-up appointment, so she got sick again. I am staying with her to be sure she is cared for better.

Nurse: Oh, Ms. Hernandez, I'm so sorry you had that experience. Let me reassure you that you will receive excellent care here. I brought you a folder with information about our hospital. In it, right here, is a discussion of your rights

and responsibilities as a patient. This copy is in English; however, we do have it available in multiple languages. What is your preferred language for receiving educational materials?

Patient: We both read and speak English, so this version will be just fine. I don't think they had anything like patient rights at that other hospital. Thank you for showing us.

Nurse: You are very welcome. You have the right to be treated with dignity and respect and to understand your treatment, both here and for what you will need after you leave. If you have any concerns about the care you receive from me or any others working here, here are the people with whom you can speak. They will ensure that any concerns you have are addressed.

Scenario follow-up: With the information about their rights in hand, the patient and her husband relaxed, and the nurse was able to complete the admission.

Bill of Rights for Registered Nurses

Registered nurses are the largest group of healthcare workers in the United States. Further, nursing is consistently listed as the most honest and ethical profession in the country (ANA, 2022). However, nursing jobs are complex and occur in a wide variety of settings and locations, from level 1 trauma centers to death row prisons and everywhere in-between. As a result of the registered nurse's value to society, health care, science, and all communities, the ANA developed a Bill of Rights for all registered nurses. These rights are expected to be nonnegotiable and provide nurses with the rights they need to meet the needs of their patients while caring for themselves as well (ANA, 2022). The Nurses Bill of Rights includes a variety of clauses designed to allow nurses to practice in safe environments that allow for psychological and physical safety and respect, ethical and legal practices, and the autonomy to advocate for patients and practice at the top of their licenses. The Nurses Bill of Rights is not a legal document; however, it can assist professional organizations, state legislatures, and healthcare agencies in developing laws and regulations related to nursing practice and organizational policies (ANA, 2022).

LINK TO LEARNING

Take a look at the most recent version of the Nurses Bill of Rights (https://openstax.org/r/77NurseBOR) from the ANA. Consider how items in the bill can improve nurses' experiences and work environments.

Legal Actions in Nursing Practice

While nurses may be involved in legal proceedings that have no interaction with their SBON, the SBON is the only agency that can revoke or suspend a nurse's license or ability to practice. The SBONs can receive complaints about nurses providing substandard care from their agencies, other healthcare workers, other nurses, and patients. After complaints are made to a SBON, they are investigated to determine whether the nurse was providing substandard care. If the nurse has acted against their state's NPA, the SBON can assign disciplinary actions including fines, remedial education, required supervision for practice, and/or suspension or revocation of a nurse's license (Boehning & Haddad, 2022).

Legal actions come in a couple of different forms through either a **criminal charge** or a **civil action**. Criminal charges are brought against an individual who has allegedly perpetrated a crime by acting against a specific statute or common law principle in a way that is harmful (Guido, 2020). Individuals found guilty of criminal charges face penalties that can range from fines and imprisonment to the possibility of the death penalty. Civil actions are brought in the form of lawsuits, in which one individual or group ("**plaintiff**") sues another ("**defendant**") for violating a social or legal contract or the rights of others. If the court or jury finds in favor of the plaintiff, the defendant may be required to pay monetary damages to the individual or group they harmed. It is possible for an individual to be sued civilly and charged criminally for the same action (Guido, 2020).

LINK TO LEARNING

The conviction of RaDonda Vaught (https://openstax.org/r/77RaDonda) for criminally negligent homicide provides an example of ethical and legal considerations of nursing, as well as criminal charges, civil suits, and actions to remove a nurse's license. (RaDonda Vaught was a former RN at Vanderbilt University Medical Center in Nashville, Tennessee.)

Crimes in Nursing Practice

As previously noted, criminal laws are focused on conduct that is offensive or harmful to others. They can be statutory or common laws. When an individual violates a criminal law by performing a prohibited act, it is a **crime**. There are two main categories of crimes: misdemeanors and felonies. A **misdemeanor** is a typically less severe criminal act, for which perpetrators are generally fined less than $1,000 and/or jailed for less than one year. A **felony** is a more serious criminal act for which perpetrators are generally fined more than $1,000 and/or jailed for more than one year.

There are a variety of ways in which a nurse can act in a criminal fashion (Guido, 2020):

- falsifying records, which are legal documents (including backdating)
- narcotic theft/diversion
- patient maltreatment/abuse
- patient murder
- failing to protect at-risk populations, such as failing to report child abuse
- inadequate nursing care
- working or driving under the influence of drugs or alcohol (nurses have lost their nursing licenses for driving under the influence)

LINK TO LEARNING

Read through the press release detailing the criminal activities of an Iowa nurse (https://openstax.org/r/77Crimenurse) that included fraud, narcotic theft, and violation of HIPAA. In addition to the legal ramifications of her actions, consider the ethical implications. This case highlights the connection between the legal system and ethical considerations.

Torts

A **tort** is the harm that results when an individual or organization breaches their duty to another individual or organization. The duty may be general or specific. Torts are civil laws and include both intentional and unintentional actions (Guido, 2020; Weiss et al., 2019). The underlying assumption behind tort law is that people are responsible for their actions (Ronquillo et al., 2022).

Intentional Torts

An **intentional tort** is an action that an individual knew or should have known was incorrect or inappropriate (Ronquillo et al., 2022). Intentional torts include **assault** and **battery**, **false imprisonment**, breach of privacy or confidentiality, **slander** and **libel**, and **fraud** (Table 16.5). For example, giving a blood transfusion without obtaining consent would be battery, which is an intentional tort. Many intentional torts can also incur criminal charges.

Type of Intentional Tort	Definition	Example
Assault	Intentionally putting another individual in fear of being hurt or touched in an offensive fashion	Threatening to withhold or forcibly give a patient medication as a way to make them behave
Battery	Intentionally causing harm or touching an individual offensively without their consent	Forcibly administering medication to a patient without their consent (Emergency situations to prevent harm to the patient or others do not count.)
False imprisonment	Restraining another person or causing them to be restricted to a specific area	Using chemical restraints (medications) to restrict the movement of a patient with Alzheimer disease to prevent them from wandering
Privacy and confidentiality	The right of an individual to have their dignity protected and their personally identifiable medical information protected and kept private	Discussing a patient, including their name and medical information, in an elevator containing individuals without a reason to know the information
Slander and libel	Making negative, malicious, and/or false remarks about another person to damage their reputation; can be either oral (slander) or written (libel)	Telling a patient the nurse they had on a previous shift is known to be a bad nurse and that you will attempt to get them a good nurse for the following shift
Fraud	Deceiving an individual or group for personal gain	Altering documentation to cover up an error in patient care

TABLE 16.5 **Types of Intentional Torts**

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety and Legal Use of Behavioral Restraints in a Psychiatric Setting

Definition: Restraints can be used to protect patients from harming themselves or others when other interventions are ineffective; however, inappropriate use of restraints is illegal and constitutes false imprisonment.

Knowledge: Restraints include mechanical devices, chemical restraints (medications), and seclusion. Behavioral restraints are used with psychiatric patients who are attempting to harm themselves or others and for whom no other type of de-escalation has been possible. Restraining patients is a legal action, as it is also imprisonment, and it can only be done in specific circumstances. The following are Medicare and Medicaid guidelines:

- Restraints should only be used as a last resort.
- There must be a physician's order written within one hour of their initiation.
- They must be discontinued as soon as possible.
- Restraints can never be a standing or PRN order.
- Patients must be assessed frequently, and mechanical restraints must be removed, and the patient's skin inspected every hour.
- Orders for behavioral restraints or seclusion must be discontinued or rewritten every four hours for adults, every two hours for children between the ages of 9 and 17 years, and every hour for children under 9 years of age.

Skills: When using restraints, nurses should do the following:

- Demonstrate effective use of restraint devices and risk reduction strategies.
- Ensure complications or unexpected issues are communicated promptly to the healthcare team and are reported as required to institutional restraint monitoring sites.

Attitude: When using restraints, nurses should do the following:

- Value standard procedures for restraint management per facility policy and manufacturer directions.
- Understand the importance of maintaining restraint safety through vigilant monitoring of restraints while in use.

Unintentional Torts

An **unintentional tort** involves causing harm to someone without intending to do so, often due to a lack of care or awareness of potential risks. Unintentional torts still harm the patient, so nurses and other healthcare workers can still be liable for the damage caused as a result even when the harm was unintentional (Rich, 2023). A type of unintentional tort called **negligence** results from individuals not acting in a way that would be reasonably expected of someone in the same position (Ronquillo et al., 2022). While the harm itself was not intended, negligence might be the result of either an action or inaction (Table 16.6).

Problem	Prevention Strategies
Falls	Identify at-risk patients. Ensure fall risk notices are easily visible. Maintain beds in lowest position and use caution with side rails.
Injuries from equipment	Ensure appropriate education is provided for new equipment. Evaluate thermostats and temperatures if providing hot or cold therapies.
Inappropriate patient monitoring	Regularly assess IV sites, vital signs, urinary output, cardiac status, and so on. Evaluate laboratory values and ensure providers are aware of abnormal values.
Poor communication	Ensure status changes are reported. Document status changes and communication of status change with providers.
Medication errors	Follow the Rights of Medication Administration. Follow agency medication policies. Monitor patients after mediation administration. Never give an unknown drug without looking it up to determine action, contraindications, and side effects.
Not following orders	Always ensure provider's orders are followed in a timely manner. If orders appear inappropriate or inaccurate, communicate that clearly to the provider, and document. If there is a conscientious objection to following an order, communicate that clearly to the appropriate member of leadership immediately.

TABLE 16.6 **Preventing Negligence in Nursing** (Sources: O'Neill, 2021; Weiss et al., 2019.)

Steps in Litigation

The process of resolving disputes or legal conflicts through the court system is called **litigation**. There are several stages to the litigation process. In the *initial phase*, a lawsuit must be filed by a plaintiff or plaintiffs against a defendant or defendants. In the case of malpractice, it is most commonly an individual plaintiff against multiple defendants including nurses, doctors, and agencies altogether (Guido, 2020). Following this, the defendant is served with the complaint and a **summons** (a formal notice issued by a court or other authorized entity, informing an

individual that a legal action has been initiated against them). The discovery phase ensues, incorporating mechanisms such as interrogations (formal questioning), depositions (formal out-of-court testimony), and requests for documents to gather relevant information. Pretrial motions may be filed, including a **motion to dismiss** a case before going to trial. A **settlement**, an agreement between the parties to not go to trial, may be negotiated in which a payment to the plaintiff may be requested in exchange for no admission of guilt or liability for the defendant.

If a settlement is not reached, the case proceeds to trial. A **verdict** will be made as the formal decision rendered by a judge or jury at the conclusion of a trial. It serves as the legal determination of guilt or innocence in criminal cases and establishes liability and potential damages in civil cases. An **injunction** may also be issued by a court to require defendants to refrain from or carry out particular actions or procedures in the future. Ultimately, the enforcement of the judgment involves actions like collecting damages or ensuring compliance with the court's orders. It is important to note that the specific steps may vary based on jurisdiction, legal systems, and the nature of the case at hand. Figure 16.6 offers an example of how litigation flows from initial complaint to conclusion in a malpractice case.

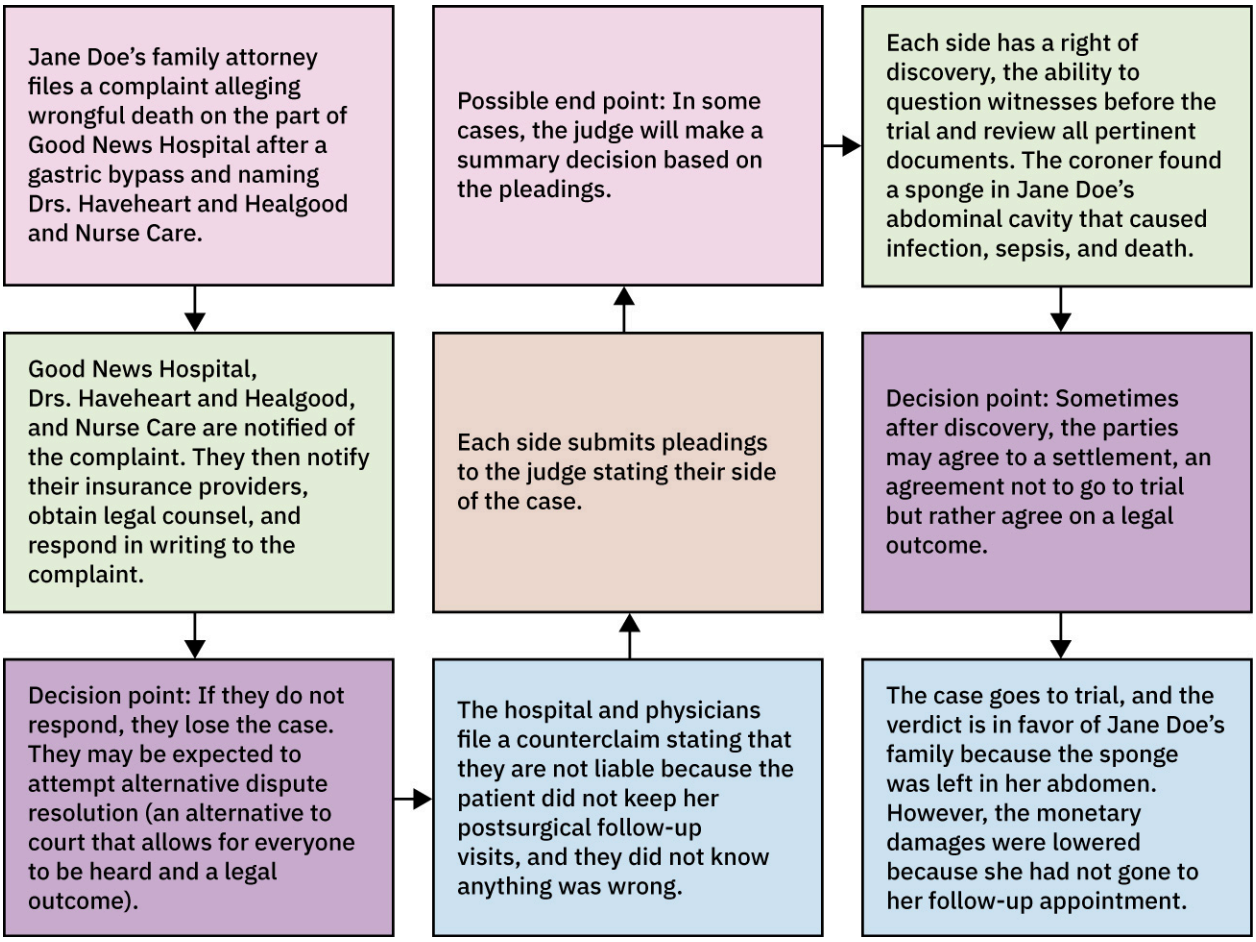

FIGURE 16.6 Scenario: Jane Doe died thirty days after discharge from the hospital where she had a gastric bypass. Her family is suing the hospital and physicians for malpractice. Follow the flow of litigation events for this case. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Cases of different nature demand distinct levels of evidence to establish the guilt or liability of defendants (Guido, 2020). For example, civil cases frequently use a preponderance of the evidence, in which one set of facts is more likely than not to be true. Conversely, criminal cases use beyond a reasonable doubt, the highest **level of evidence** (an indication of how much proof is required to find a defendant liable for an event). In these cases, the government must prove that no reasonable person would doubt the prosecution has proved that a crime occurred and that the defendant committed it; however, it does not mean the absence of all doubt.

Nurse as a Defendant

Professional negligence on the part of a service provider who must have specialized education to fulfill the designated complex assistance expected of someone in the same position is called **malpractice**. Nurses are

involved in malpractice suits for a variety of reasons (O'Neill, 2021; Weiss et al., 2019):

- inadequate/inappropriate assessment
- not reporting status changes appropriately
- not documenting appropriately
- falsifying documentation/altering a patient record
- not reporting coworker negligence
- not providing necessary education
- violating standards of practice or practicing outside or beyond one's scope of practice
- inappropriate delegation
- not recognizing inappropriate orders and/or order errors

Much of the time, malpractice cases are brought against the employer rather than the employee because employers are considered responsible for the actions of every employee. There are four criteria needed to prove malpractice. A jury will assess community standards, institutional policies, expert opinions, and literature/research to determine the level of care that is the standard for a nurse in the defendant's position (Weiss et al., 2019).

Nurse as a Witness

Nurses are often called on to be witnesses in court proceedings. They may be called on as witnesses for or against coworkers or as independent experts (Weiss et al., 2019). In this capacity, a nurse is considered a **lay witness** and allowed only to speak to the facts of the case—what they saw or did not see (Guido, 2020). In the capacity of lay witness, nurses are involved in the case because they have pertinent information but are not direct defendants to the case.

A second way in which nurses are called to testify at trials is as an **expert witness**. When called as expert witnesses, their job is to describe the applicable standards and their opinion of whether a nurse in each situation would have been reasonably expected to behave/perform in a particular way (Guido, 2020). Expert witnesses also explain, in plain language, the various issues associated with nursing actions, performance, and medical technology, to make it easier for judges and/or juries to understand the case (Guido, 2020). Nurse expert witnesses must be able to show they have the knowledge and expertise required to speak with authority about the specific issues being considered in a given court proceeding.

Prevention of Liability for Nurses

Unfortunately, it is impossible to guarantee a nurse will never be sued for malpractice. Perhaps the best strategy to prevent being named in a criminal or civil liability case is through personal **risk management**. Risk management includes a variety of practices that agencies utilize to reduce the likelihood of injury to patients and others. Individuals can also employ risk management strategies. Always practice within the bounds of your state's NPA and agency's policies and practices (Nurses Service Organization and CNA Financial Corporation, 2021). Keep files of documents that can be used to show your character. Include documents such as letters of recommendation, performance evaluations, and continuing education certificates. When in doubt, follow the chain of command of your agency in terms of notifications and seeking advice. All nurses should consider investing in malpractice insurance, which will provide financial support and, in some cases, legal representation in the case that they are sued.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety, Avoiding Legal Problems

Definition: Decrease the chance of being a defendant in a legal proceeding by providing high-quality, safe, and person-centered care, and carefully following standards of practice.

Knowledge: Understand the safety issues that most frequently lead to malpractice claims, as well as common errors and care hazards.

Skill: Employ these strategies to decrease the chances of being called as a defendant in a legal case:

- Always provide authentic and person-centered care when working with patients. People are less likely to sue

people they know genuinely care for them.
- Regularly review new evidence-based research and practice in your specialty.
- Encourage leadership to ensure staff are educated when policies, procedures, and technology change.
- Always follow the agency's policies and procedures.
- Delegate appropriately.
- Ensure clients who are at risk of injury from falls, elopement, pressure ulcers, and so on, have appropriate care plans and are provided with appropriate levels of care.
- Always document objectively, precisely, and clearly using only approved abbreviations.
- Ensure incident reports are detailed and provided to the appropriate departments.

Attitude: Value your role in preventing errors.

Factors Affecting Competent Practice

There are a variety of intrinsic and extrinsic factors that can negatively affect the practice of the best nurses, making them more prone to errors. Studies have shown that competent practice can be impacted by a wide range of factors, including staffing ratios, work schedules, fatigue, physical health, and mental health. For example, in one survey of 771 critical care nurses, over 60 percent of nurses reported suboptimal physical health, and over 50 percent of nurses reported suboptimal mental health (particularly depression and anxiety) (Melnyk et al., 2021). The same nurses with less than perfect physical or mental health reported between 30 and 60 percent greater chance of making medical errors than their healthier coworkers.

For example, **presenteeism** is coming to work but not being able to perform fully and competently due to illness or job stress that impacts the safety of patients through increased patient falls, medication errors, and missed care (Rainbow et al., 2019). Another common factor impacting nursing practice is nursing fatigue and scheduling. Most nurses work in shifts, often 12-hour shifts, and frequently rotate between days of the week and sometimes even times of the day (between day, evening, and/or night). Shift work impacts nurses' ability to concentrate and communicate at work and increases the chances of work-related injuries, illnesses, burnout, and errors (Peršolja, 2023). A third issue is the impact of nursing staffing levels on errors, patient mortality, and nursing burnout, which have been known for over two decades. Studies have shown that for hospital nurses working on inpatient units, for every additional patient a nurse cares for in a given shift, there is an increased risk of patient mortality, burnout, and job dissatisfaction (Aiken, 2023).

16.4 Advocacy in Nursing Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:
- Describe the role of nurses as advocates
- Recognize the importance of nursing advocacy
- Identify barriers to nursing advocacy

Publicly lending one's voice and/or support to a cause, person, or policy is called **advocacy**. Florence Nightingale is the first nurse advocate we know of. Not only was she a fierce advocate for her patients, fighting hard to ensure cleanliness within hospitals, but she was also a tireless crusader for nurses themselves. She fought hard for respect and improvement of the nursing profession. Today, advocacy is a core component of professional nursing and a cornerstone of nursing practice.

Role of Nurses as Advocates

Nursing advocacy seems, on the surface, to be a simple concept: be vocal to support what is right. However, upon closer examination, it is a rather complex concept. Advocacy involves ensuring excellent care for patients and respect for their rights, as well as advocating for the nursing profession. Nurses advocate for what is ethically sound in their interactions with and provision of care to patients and their families. They also advocate for their patients with other healthcare providers and for all patients as well as the profession of nursing through activism and engagement at local, state, and national levels.

Advocacy for Patients

There are several different behaviors associated with patient advocacy (Figure 16.7). Nursing advocacy includes

protecting patients from unintentional or intentional harm. Further, advocacy involves teaching patients and their families so they can understand their conditions and care for themselves. Simply caring and ensuring patients feel respected and as if they matter as a human, not only a sick body, is another way to show advocacy. Nurses are also well positioned to act as mediators to ensure that the patient's wishes and needs are understood by all. Finally, nurses are excellent champions and advocate for their patients by speaking out against injustice (Abbasinia et al., 2019).

Protecting	• Track medical errors • Speak out against incompetency and misconduct • Protect autonomy
Educating	• Provide education for diagnosis and treatment • Educate about discharge or home care
Caring	• Maintain patient privacy and dignity • Ensure patient's preferences and cultural needs are met
Mediating	• Liaison between patients, families, and other healthcare professionals • Help patients speak for themselves and speak for them when they are unable
Championing	• Speak against injustice and inequality in the healthcare system • Assist with access to community services and outreach

FIGURE 16.7 Nurses function as patient advocates in a variety of ways. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

A snapshot of nurses' voices about the varied expressions of patient advocacy (https://openstax.org/r/77advocate) is presented in this brief video.

Promoting Self-Determination

The ways individuals control their lives and surroundings and express their autonomy is called **self-determination**. Increasing numbers of patients have complex chronic conditions, many with multiple comorbidities, which require sophisticated self-management on the patient's part. Encouraging patients to be engaged and involved in their own care by implementing shared decision-making strategies and healthcare environments in which patients can ask questions, state their limitations, and feel safe and understood supports patient self-determination (Dineen-Griffin et al., 2019). Several strategies to help patients develop greater self-determination and management skills have proven effective with a variety of complex medical conditions, such as type 2 diabetes mellitus, asthma/COPD, and heart failure (Dineen-Griffin et al., 2019). Examples of effective strategies include the following:

- Educating patients regularly about their conditions, allowing patients to better manage their own health
- Improving patients' ability to solve problems and make decisions regarding symptom changes
- Developing written action plans with patients including strategies for managing situations and exacerbations when they arise
- Encouraging active symptom awareness on the part of patients, such as maintaining blood pressure journals

Each of these strategies require patients to be engaged with healthcare providers on a one-to-one basis with enough frequency to develop the tools needed for effective self-determination (Dineen-Griffin et al., 2019). The most effective interventions to promote patient self-determination involve ensuring patients feel supported and informed about their own healthcare conditions, encouraging them to believe they have the right to act

autonomously, motivating them to act on their own behalf, and encouraging healthy behaviors for both physical and psychological health (Ntoumanis et al., 2020).

Self-Advocacy

The act of speaking up for oneself and one's needs is **self-advocacy**. While nurses are excellent at speaking up for their patients and for at-risk populations, they are not always good at speaking up for themselves and ensuring they are providing the same care for themselves that they do for others (Eaton, 2021). Consider the instructions that airlines provide: in case of an emergency, put on your own oxygen mask before helping others. Otherwise, you may not be able to help others. It is the same for nurses. Nurses must remember to take care of themselves so that they can take care of others. Otherwise, they can become exhausted, burned out, and unable to supply the high level of quality and skill their patients need.

Safe Harbor is one mechanism for expressing self-advocacy. Safe Harbor in nursing is a legal and ethical concept designed to empower nurses to refuse specific patient assignments under circumstances where carrying out the assignment would compromise patient safety or violate professional standards. When a nurse identifies a situation that raises concerns about patient well-being or adherence to nursing standards, the Safe Harbor process is initiated. The nurse assesses the situation, promptly notifies the appropriate supervisor, and collaborates to find a resolution that addresses the identified issues, such as redistributing assignments or providing additional resources. If an acceptable resolution cannot be reached, the nurse may refuse the assignment without fear of retaliation or disciplinary action. It is important to note that the existence and specifics of Safe Harbor provisions vary by state, with some states having well-established regulations, while others may have different mechanisms to address workload issues. Nurses should stay informed about the regulations in their specific state and facility to ensure compliance with professional standards and legal obligations.

Whistleblowing

Advocacy can be frightening, particularly if a nurse recognizes a need to report larger-scale issues such as environmental safety or patient care issues and is afraid their employer will punish them as a result. If a nurse (or any employee) has followed the proper leadership structure to report legitimate concerns that have not been addressed, then other steps may need to be taken; it may be the only ethical way forward (Wiisak et al., 2022). The reporting of misconduct, such as fraud, abusive patient care, or unsafe conditions to outside authorities is known as **whistleblowing**. An individual making such a report is a **whistleblower**.

Whistleblowing should never be done in anger or trivial situations. It is an important ability that workers have to protect themselves, their patients, and even their agencies from problems caused by others. However, people intentionally engaged in inappropriate activities will not be happy to be questioned about their actions.

LINK TO LEARNING

The ANA offers some advice about whistleblowing (https://openstax.org/r/77whistle) that suggests a variety of things to consider when preparing to blow the whistle and when it should be done.

While it should not be done lightly, whistleblowing is an important protection for nurses and other healthcare professionals. Seeing unethical or illegal misconduct on the part of other employees or agencies can lead to moral distress and increased turnover among healthcare workers (Wiisak et al., 2022). Reporting unsafe and illegal practices can be a frightening thing to do; however, there are multiple federal and state laws in place to protect whistleblowers from retaliation by protecting their jobs (Kakacek, 2022). Table 16.7 explores the federal laws and protections related to whistleblowing.

Law	Protections Provided
Whistleblower Protection Act (WPA)	This act protects federal workers if they make a disclosure about laws they believe are being violated within federal workplaces. It includes disclosure of broken laws, rules, and regulations; mismanagement of federal funds; abuses of authority; and compromising the health and/or safety of the public.
No FEAR Act	This act strengthened the protections of federal workers who file antidiscrimination or whistleblower claims. It establishes fines and damage claim procedures for federal employees whose rights are violated under the act.
Occupational Safety and Health Act	This act is administered by OSHA. It protects workers who make claims related to safe and healthy work environments.
Affordable Care Act	This act protects workers from whistleblowing related to insurance fraud.

TABLE 16.7 Federal Whistleblower Laws (Sources: Kakacek, 2022; NLRB, 2023; OSHA, n.d.)

Importance of Nursing Advocacy

With over four million RNs in the United States, nursing advocacy has the potential to make changes, both large and small, throughout the healthcare landscape (Eaton, 2021). Nursing advocacy can take many forms. Individual nurses can work with their agencies, call their legislators, write letters, make phone calls, visit a legislator's office, volunteer, and even march for causes they find important. Individual nurses can also join coalitions or groups of like-minded individuals who are all advocating for the same initiatives (Association of Public Health Nurses, 2022. Organizations such as the Association of Public Health Nurses and the Alliance of Nurses for Healthy Environments offer a vehicle for many nurses to make their voices heard at one time. At a local level, nurses can work with their agencies to develop collaborative efforts to meet patient needs in conjunction with other agencies and public service sectors (Latham et al., 2020).

LINK TO LEARNING

An advocacy toolkit that offers practical suggestions and advice for public health advocacy (https://openstax.org/r/77PHadvocacy) is provided by the Association of Public Health Nurses, and it can also be used with all types of nursing advocacy.

Improve Public Health

Nursing ethics, values, and even laws all offer a focus on equal access to health care, social justice, and nondiscrimination for all patients, leading naturally to nursing advocacy for public health (Williams et al., 2018). Nurses can advocate for policies that address public health by promoting justice, health equity, and the social determinants of health (SDOHs), such as education, financial stability, and housing. The SDOHs powerfully influence overall public health. For example, when life expectancy mapping was performed over an urban area in Virginia, differences in life expectancy (average age at death) of up to nineteen years were noted between different zip codes in the same city (Lathrop, 2020). Only by addressing the root causes of poor health can the entire public's health truly be improved (Lathrop, 2020; Williams et al., 2018). Table 16.8 offers a few different ways in which nurses can engage in public health advocacy.

Area	Rationale	Evidence-Based Programs	Advocacy Opportunities
Early childhood education (ECE)	Lack of ECE is linked to poor academics in later years, depression, and attention deficits.	ECE programs Early childhood health visits Food assistance	Support universal access to ECE. Support public funding of programs for 3- to 5-year-olds.
Job security	Poor job security decreases the ability of families to make permanent choices in terms of housing and safety.	Family and Medical Leave Act Paid parental leave	Support policies that keep jobs available for those having children or experiencing major life events.
Safe working conditions	Lower paying jobs are frequently more dangerous.	Laws for workplace safety including OSHA and workers' compensation	Support labor laws that provide safety standards for work environments.
Social status	Social status is related to health outcomes.	Business training	Support development programs for women, children, and youth. Support job training programs.
Food security	Food insecurity leads to poor health outcomes, developmental impairments in children, malnutrition, and obesity.	School nutrition programs Federal nutrition programs (such as WIC and SNAP) Community gardens	Advocate for school subsidies. Support or start a local community garden.

TABLE 16.8 Advocacy Opportunities in Public Health for Nurses (Source: Williams et al., 2018.)

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Identifying Social Determinants of Health

Identifying patients who are struggling with SDOHs can easily be achieved through screening tools that allow for integrating questions about health-related social needs (HRSNs) into patient assessments. This assessment can help the nurse identify patients who need assistance beyond their immediate health concerns. It can also help nurses find areas where their agencies may be able to aid individuals or communities in their own charitable endeavors.

Questions may include items such as the following:

- What is your living situation today?
- In the last twelve months, how often did you worry that your food would run out before you had money to buy more?
- In the last twelve months, how often did you miss or worry about missing medical appointments due to lack of transportation?
- How often does anyone, including family and friends, scream or curse at you?
- If, for any reason, you need help with day-to-day activities such as bathing, preparing meals, shopping, managing finances, and so on, do you get the help you need?

Knowing the answers to such questions may help nurses advocate both for the patient in front of them, as well as for the public health of the communities their patients live in.

The full HRSN questionnaire (https://openstax.org/r/77ahcmscreening) developed by the Centers for Medicare and Medicaid Services provides additional information (CMS, n.d.; Latham et al., 2020).

The Seven Domains of Health

One strategy to explore overall clinician health and well-being is by looking at the **seven domains of health**. This holistic framework of seven life dimensions that encompass various dimensions of well-being and health can be used by nurses to explore ways to advocate for themselves (Figure 16.8) (Kerley & Toney-Butler, 2023). Nurses can then explore ways to improve their own life and conditions within this framework.

Physical functioning	• Physical health • Ability to physically perform job functions
Psychological well-being	• Positive versus negative outlook and emotions • Levels of depression, anxiety, and stress
Social functioning	• Ability to perform social roles of advocacy • Role of family and friends in support system
Pain	• Pain, usually physical, but may be stress or emotional and its impact on daily living
Cognitive functioning	• A clinician's memory, reasoning, and orientation and the clinician's perception of the same
Vitality	• Fulfillment of basic needs, such as sleep, rest, nutrition • Lack of basic needs can lead to poor concentration and performance
Overall well-being	• Large scale of individual's satisfaction with their health and contentment, based on feelings of self-worth and purpose

FIGURE 16.8 The seven domains of health include physical functioning, psychological well-being, social functioning, pain, cognitive functioning, vitality, and overall well-being. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Optimizing the Workplace Environment

One area where nurses can lend their voices in advocacy is in improving their workplaces and improving working conditions. Issues such as safe staffing levels, high-quality training and orientation, physical and mental health support for staff, and technical education and support are all areas where nurses can advocate to improve workplace environments, patient care, and their own experiences. When advocating for change, always be solution focused. Rather than simply presenting problems that need to be addressed, present problems along with one or more possible ways to address them.

While direct care nurses are often best able to name opportunities for improvement, having an open line of communication with nursing leadership is important in workplace advocacy efforts (Cole et al., 2019). When leadership is not immediately responsive, work to determine whether others on your unit or in your facility are having similar issues or concerns. A group of nurses presenting a united front, advocating for their workplace environment, and presenting clearly thought-out suggestions for improvement can often succeed where an individual may fail (Wells & Delgado, 2023).

Enhancing Healthcare Team Outcomes

Nurses are adept at enhancing healthcare team outcomes through their advocacy for patients. A large piece of advocacy in nursing is either helping patients find their voice or speaking for them when they are unable to. Because nurses spend more time with patients than any other healthcare team member, they frequently develop the

strongest therapeutic relationships and can facilitate enhanced team outcomes (Ganz, 2019). On teams, nurses can serve as mediators or liaisons between patients and their families and other healthcare professionals (Abbasinia et al., 2019; Ganz, 2019). Nurses can prepare other team members in advance of meeting a patient for cultural considerations, patient wishes, and expected healthcare literacy. They can help ensure that treatment decisions made by the team are fully understood and agreed to by the patient and that the patient is able to manage any treatments necessary on their part. Further, as the person to administer medications and perform written patient care orders, nurses can improve team outcomes by safeguarding their patients from incorrect interventions (Abbasinia et al., 2019). In primary care settings, nurses working as care coordinators develop relationships with their patients that enable them to advocate for patient needs with the team and improve their health-related outcomes (Karam et al., 2021).

Barriers to Nursing Advocacy

Despite the importance of nursing advocacy, there are also many barriers to nurses being able to advocate appropriately for their patients. Barriers for nurses can be as simple as not having the time to appropriately advocate for their patients (Blackwood et al., 2019; Nikitara et al., 2019). Alternatively, patients may need advocacy in areas in which nurses are unfamiliar, such as substance use, advanced care planning, or diabetes care. Another barrier to advocacy can be the lack of resources in terms of equipment, educational materials, space, specialists to consult with, or available information technology (Nikitara et al., 2019). Other key barriers include lack of cooperation (among patients, among nurses, or among organizations), fear of negative outcomes, and patient-related factors.

Lack of Cooperation

For nurses to engage in active and healthy advocacy, there must be some level of cooperation between people and entities. Despite the importance of advocacy to professional nursing, lack of cooperation in terms of environmental conditions and personal relationships or feelings may negatively impact nurses' ability to be effective advocates. For instance, in a high-stress clinical setting with inadequate resources, nurses may find it challenging to advocate for optimal patient care when faced with systemic barriers. Similarly, if there is a breakdown in communication or collaboration within the healthcare team, it may hinder the nurses' collective ability to advocate for the best interests of their patients. In such scenarios, the effectiveness of advocacy efforts becomes compromised, highlighting the need for a collaborative and supportive professional environment to fully realize the advocacy role in nursing.

Among Patients

Patients who have had previously negative experiences with the healthcare setting and/or nurses may not trust nurses to advocate for them and may actively work against their nursing staff (Kwame & Petrucka, 2021). Other patients are simply angry, afraid, or unable to move out of their own concerns to cooperate with nurses in both patient care and advocacy efforts. Further, patients who are uncomfortable in healthcare settings are often less able to cooperate constructively with nursing staff. For example, a patient who is too hot or cold or overwhelmed by environmental noise may be unable to focus on other needs because of their immediate discomfort (Kwame & Petrucka, 2021).

Among Healthcare Professionals

While nurses often act as patient care coordinators, are the healthcare professionals closest to the patient, and have the greatest ability to advocate for the patient, they are often left out of meetings between patients and providers. Being asked after the fact to explain issues and having to return to the provider with patient questions takes time and energy away from direct patient care. Consider the example of end-of-life care. Studies have shown that nurses are the healthcare staff most likely to identify **medical futility** (the point at which further interventions will not improve a patient's life expectancy) (Ganz, 2019). Further, they have been acting as the patient's advocate in the time leading up to end-of-life discussions, and they tend to be the healthcare professional most trusted by the patient. However, healthcare providers often do not include nurses in their end-of-life discussions with family members (Ganz, 2019). So clearly, even in environments where nurses have been able to advocate well for patients up to the final stages of their illness, they are often not invited to the table by other healthcare professionals.

Among Healthcare Organizations

In many healthcare organizations, particularly those that lack a strong shared decision-making culture between

front-line staff and leadership, nurses may find it difficult to advocate effectively for themselves and for effective policies and procedures (Newans & Siddiqui, 2021). This type of barrier leads to leadership enacting policies that front-line staff are unable or unwilling to implement fully because leadership does not work in the given practice setting. Subsequently, nurses begin implementing work-arounds to provide more effective patient care, and these work-arounds may not take into account some of the goals of the leadership. As a result, when healthcare organizations place barriers to nurses' ability to advocate for themselves and their patients in the policy development process, patient care and organizational goals may be negatively affected.

Other barriers to effective advocacy are system-level barriers. Issues such as staffing shortages, inability to spend time with patients, and nursing burnout often impact nursing staff's ability to provide care, effective communication, and advocacy (Kwame & Petrucka, 2021). Further, when agencies have a strong focus on the completion of tasks associated with patient care, advocacy and communication with patients may be changed. Both completing patient care tasks and engaging with patients are important pieces of patient advocacy, but too often, different aspects are sacrificed based on policies and procedures at the institutional level (Kwame & Petrucka, 2021).

Fear of Negative Outcomes

In healthcare environments in which nurses lack autonomy, they may be afraid to aggressively advocate for patients. Particularly in situations in which advocating for a patient's needs flows contrary to a facility's culture, nurses may be afraid of the impact their advocacy will have on their own careers (Nsiah et al., 2019). Some nurses even fear losing their jobs. Further, no nurse wants to do additional harm to a patient, and many will doubt themselves, letting their anxiety over making a mistake impact their willingness to speak up for their patients (Nsiah et al., 2019).

Patient-Related Factors

Another barrier to patient advocacy can be factors intrinsic to patients and patient populations. For example, it may be difficult for nurses to effectively communicate with patients experiencing poor health literacy or who speak a language other than the nurse's language. Many nurses have reported difficulties in accessing interpreter services, and some studies have shown that even certified medical interpreters often rephrase questions and answers inappropriately and/or leave out information (Gerchow et al., 2021). Other patient-related factors such as gender nonconformity, religious differences, and culture may impact the nurse and create unintended biases in terms of advocacy and active engagement in advocacy.

LIFE-STAGE CONTEXT

Ageism in Critical Care Settings

While advocating for patients is intrinsically linked to nursing practice, there is good evidence that nurses are less aggressive advocates for older patients. As patients age and become sicker, they often use more healthcare resources and have greater needs. Some patients become "frequent fliers," moving in and out of the hospital multiple times, and their health conditions become progressively worse. In critical care settings, where there may be resource limitations in terms of equipment and time, some nurses may make conscious (or unconscious) decisions to provide higher levels of advocacy for younger patients who they feel have a better chance of returning to their baseline and high-level quality of life. Nurses must guard against expressing ageism (prejudice, discrimination, or stereotyping based on a person's age, particularly when directed toward individuals who are older or younger than the perceived societal norm) in their patient care, and advocate for all patients equally (Moniem et al., 2019).

Summary

16.1 Value Considerations of Care

Values are the core convictions that underlie beliefs and behaviors. Values are at the center of both personal and professional lives. Values are learned from parents, religions, school, professional practice, education, and sociocultural environments. Professional nursing values include altruism, autonomy, integrity, social justice, and human dignity. These values are embedded in nursing practice, particularly in the nursing process itself.

16.2 Ethics in Nursing Practice

Ethics are essential to nursing practice; they are built into everything nurses do and the very fabric of nursing practice. Ethics play many roles in nursing practice from the underpinning that nursing values give to the profession to the Code of Ethics for Nurses with which nurses govern themselves. Ethical concepts such as a belief in autonomy, justice, and veracity should be threaded through all decisions nurses make and the care they offer their patients. Further, the Code of Ethics for Nurses supplies guidelines and guidance for nurses to follow throughout their careers and no matter what their job duties. Theories of ethics include principle- and care-based approaches to understanding ethics. Nursing ethical theories are grounded in classical theories such as deontology (actions are morally right or wrong) and utilitarianism (actions should do the most good for the greatest number and the least amount of harm for the rest). Yet, in recent years, nursing ethics has also embraced feminist ethics as it seeks to break down barriers related to institutionalized prejudices and social justice. Unfortunately, the most ethical decision is not always clear, which may cause moral distress. Nurses have many strategies available to them to assist with ethical decision-making on their own and in groups, including the MORAL model of ethical decision-making and the Four Topics Method.

16.3 Legal Dimensions of Care

Nursing is not simply about caring for patients. It is about caring for patients ethically and legally. Nurses must understand basic legal concepts, such as their state's NPAs and the related rules and regulations established by their SBONs. They must be aware of the legal regulations surrounding their educational institutions, certifications, and licenses. Nurses must also understand their exposure to various types of legal actions, both criminal and tort claims, and actively protect themselves from being found liable for providing inappropriate patient care or knowingly participating in harmful or fraudulent activities.

16.4 Advocacy in Nursing Practice

The role of nurses in advocacy for themselves, their patients, and even public health is a critical part of professional nursing practice. With over four million nurses in the United States and nurses having the most interaction with patients, nurses are uniquely placed to advocate for and impact health care on global and local levels, from Congress to a patient's room. However, there are several barriers to nursing advocacy, including lack of time, lack of cooperation from other people and agencies, fear of negative outcomes, and other patient-related factors.

Key Terms

abandonment in the context of nursing, refers to the act of a nurse leaving a patient's care without making sure another qualified nurse is ready to take over and continue providing necessary medical attention and support

administrative law policies and procedures established by governments (federal, state, and local) that detail rules and procedures for statutory laws

advocacy publicly lending one's voice and/or support to a cause, person, or policy

altruism working for the well-being of others

assault intentionally putting another individual in fear of being hurt or touched in an offensive fashion

autonomy an individual's ability to make decisions and determine courses of actions based on being well informed, giving consent, and volunteering without coercion

battery intentionally causing harm or touching an individual offensively without their consent

beneficence ethical principle that underscores the obligation to do good and promote the well-being of patients

care-based approach ethics that combines the actions of providing care for others with the value of caring for the individual, while recognizing their frailty and vulnerability

civil action lawsuit in which one individual or group sues another for violating a social or legal contract or the

rights of others

civil law law dealing with people, things, and the relationships between them

common law unwritten law based on principles of justice, reason, and common sense

confidentiality maintaining patient privacy in terms of health and personal information

conflict of interest when an individual's personal interests could compromise their judgment, decisions, or actions at work

conscience inner feeling or voice inside an individual's head that tells them whether actions, thoughts, or behaviors are right or wrong

conscientious objection to preserve integrity, refusing to perform actions that violate values, as long as the refusal is not based on personal prejudice and/or convenience

constitutional law law written into the U.S. Constitution and its amendments

credentialing a process that agencies use to ensure that their clinical staff (all healthcare professionals) meet the necessary and legal criteria to practice

crime violating a criminal law

criminal charge legal action against an individual who has allegedly perpetrated a crime by acting against a specific statute or common law principle in a way that is harmful

criminal law law that defines crimes and the punishments for people perpetrating them

defendant the party against whom a legal action is brought

deontology a theoretical perspective that assumes that ethical decisions or actions are right or wrong because they meet a moral law or principle

dilemma a choice between two or more potentially correct answers

ethical conduct behaving in a manner aligned with the Code of Ethics for Nurses, nursing values and virtues, and nursing ethical principles

ethical consideration an issue that causes a nurse to stop to think through the ethics of a situation

ethical dilemma a choice between two or more actions that must be made, both of which are equally good, both of which are equally bad, or for which the benefits of both actions are unknown

ethical principle fundamental concept that guides individuals and professionals in determining what is right or wrong in a given situation

ethics a branch of philosophy and a set of moral principles, virtues, or ideals that guide behavior and help determine what is right and wrong

ethics committee a group that works together on a regular basis to address ethical issues within the organization

expert witness an individual whose job is to describe the applicable standards and their opinion of whether a nurse in each situation would have been reasonably expected to behave/perform in a particular way

false imprisonment restraining another person or causing them to be restricted to a specific area

felony more serious criminal act for which perpetrators are generally fined more than $1,000 and/or jailed for more than one year

fidelity faithfulness and loyalty

fraud deceiving an individual or group for personal gain

Good Samaritan law law that protects healthcare professionals from civil liability in emergency situations as long as they are acting in a way that is expected, reasonable, and prudent from someone with the same background

human dignity every individual has worth on account of being human

informed consent a requirement that healthcare providers inform a patient or their surrogate of the potential benefits, risks, and alternative treatments for a procedure or treatment that is being offered

injunction prevents or requires defendants from particular actions or procedures in the future

integrity being honest and morally constant, supporting what is right even when not popular, and meeting commitments

intentional tort action that an individual knew or should have known was incorrect or inappropriate

justice treating all people equally and judging them on the same criteria

laws formal rules for conduct that governs behavior and is created and sanctioned by various agencies, such as Congress and states

lay witness individual with knowledge of a case who is called to court to speak to the facts of the case, what they saw and did not see

level of evidence an indication of how much proof is required to find a defendant liable for an event

libel negative, malicious, and/or false written remarks about another person to damage their reputation
litigation the process of resolving disputes or legal conflicts through the court system
malpractice professional negligence
mandated reporter individual required by law to report suspected or known abuse against children, older adults, people with disabilities, and between intimate partners
medical futility the point at which further interventions will not improve a patient's life expectancy
misdemeanor less egregious criminal act, for which perpetrators are generally fined less than $1,000 and/or jailed for less than one year
moral courage the willingness to stand up for what is moral and ethical even when it may negatively impact the nurse
moral distress knowing the ethically correct action but being unable to perform it or being forced to act outside one's personal and professional values
moral injury when healthcare workers become psychologically harmed from being forced to act outside of their value system for an extended period of time
motion to dismiss request to dismiss a case
negligence results from an individual or organization who has a duty to act, breaches that duty, and causes damage; results from individuals not acting in a way that would be reasonably expected of someone in the same position
nonmaleficence ethical principle that emphasizes the obligation to do no harm intentionally
Nurse Licensure Compact (NLC) an agreement among certain U.S. states to recognize and accept a single nursing license that allows nurses to practice in multiple participating states
nursing ethics a moral base from which nurses work
nursing practice act (NPA) the statutory law guiding nursing practice for a state
plaintiff the person who files a lawsuit against someone
presenteeism coming to work but not being able to perform fully and competently due to illness or job stress
principle-based approach (also, principlism) draws from deontology and assumes that ethical principles can guide all actions and decisions for nurses
risk management strategies to prevent being named in a criminal or civil liability case
self-advocacy the act of speaking up for oneself and one's needs
self-determination the ways individuals control their lives and surroundings and express their autonomy
settlement an agreement between the parties to not go to trial but rather to have a payment to the plaintiff in exchange for no admission of guilt or liability for the defendant
seven domains of health a holistic framework that encompasses various dimensions of well-being and health
slander negative, malicious, and/or false oral remarks about another person to damage their reputation
social justice a belief that all people deserve equal treatment and access to health care
standards professionally developed criteria providing the minimal level of acceptable practice for all individuals within a profession
Standards of Practice standards designed by the ANA and based on the nursing process that provides a problem-solving-focused approach to nursing practice
Standards of Professional Nursing Practice statements of functions and conduct that all nurses, in every setting, are expected to execute capably
Standards of Professional Performance professional nursing behaviors and mindsets, including advocacy, respect, communication, collaboration, leadership, research, and environmental health
statutory law law established by legislative bodies, such as Congress, state legislatures, and local governments
summons formal notice issued by a court or other authorized entity, informing an individual (defendant) that a legal action has been initiated against them
tort a type of civil law focused on the rights and duties of individuals, in which an individual can sue another for damages after suffering harm because of wrongful actions on the part of the person being sued
unintentional tort causing harm to someone without intending to do so
utilitarianism (also, consequentialism) a theoretical perspective of ethics that focuses on doing the greatest good for the most people and the least amount of harm for others
value a central, guiding principle in an individual's life
value system the sum of an individual's or group's values, such as codes of conduct

veracity truthfulness
verdict legal decision
virtue ethics theory based on principle that people make decisions and perform actions based on their character
whistleblower an individual reporting misconduct
whistleblowing the reporting of misconduct, such as fraud, abusive patient care, or unsafe conditions to outside authorities

Assessments

Review Questions

1. Where do most people encounter their first education on values?
   a. elementary school
   b. friends
   c. church
   d. parents

2. Respecting an individual's decision not to participate in a research study is an example of what value?
   a. autonomy
   b. altruism
   c. social Justice
   d. integrity

3. A nurse enters a patient's room and discovers their college nemesis, a person who made their life miserable while in school. Why might this be considered?
   a. an opportunity to show integrity
   b. a time to use a conscientious objection
   c. a conflict of interest
   d. an opportunity to be altruistic

4. A nurse is determining a patient's needs regarding end-of-life care. At which stage of the nursing process is this most likely to happen?
   a. assessment
   b. diagnosis
   c. implementation
   d. evaluation

5. The treatment team is discussing desirous outcomes and plans for a patient upon discharge. The team feels there is only one way to proceed with the plan. The nurse states the patient must be involved in their final decision. What value is the nurse representing?
   a. altruism
   b. autonomy
   c. human dignity
   d. integrity

6. A nursing student is learning the nursing Standards of Professional Practice and is trying to understand the standard and competencies about advocacy. What set of nursing standards is the student focusing on?
   a. Standards of Professional Practice
   b. Standards of Professional Performance
   c. Standards of Ethical Practice
   d. Standards of Professional Ethics

7. The provision two of the Code of Ethics for Nurses states "the nurse's primary commitment is to the patient, whether an individual, family, group, community, or population." What interpretive statement best reflects this provision?

a. Respect human dignity and all human rights no matter the nature of the illness.
b. Protect the privacy and confidentiality of patients.
c. Nurses are responsible for caring for themselves as they care for patients.
d. Address conflicts of interest to preserve patient safety first, then professional integrity.

8. What is the ethical theoretical approach that carries an underlying assumption that human beings are mutually dependent on each other and need respect, protection, and concern?
a. care-based approach
b. principlism
c. virtue ethics
d. feminist ethics

9. Lucy is working on a busy medical-surgical unit. One evening she cares for a very sick patient who needs to be transferred to the ICU; however, there are no beds available in the ICU. While the transfer center attempts to arrange for transfer to another facility with available ICU beds, Lucy must do her best to give the patient the care they need without having the resources available to do so. What condition might this situation cause Lucy?
a. moral injury
b. moral distress
c. conscientious objection
d. ethical dilemma

10. What type of law is a nursing practice act?
a. constitutional
b. statutory
c. administrative
d. common

11. A nurse witnesses a car wreck and knows that people are probably injured. As the only healthcare provider currently on the scene, the nurse attempts to give aid to the victims of the wreck. A hysterical parent is screaming for help with their child, and the nurse attempts to render aid. The child's body is very damaged, but the nurse tries to stabilize the child pending arrival of first responders. The nurse is confident that doing so is protected by which legal concept?
a. Good Samaritan laws
b. their state's NPA
c. their nursing license
d. OSHA

12. What situation constitutes battery?
a. threatening to withhold a patient's pain medication
b. using restraints to protect a patient from harming themselves or others
c. discussing a patient's name and diagnosis on an elevator with individuals who have no need to know
d. forcibly administering medication outside of an emergency situation

13. What does the newly graduated nurse accurately identify as a way nurses provide advocacy for patients?
a. protecting and educating
b. medicating and championing
c. caring and talking
d. mediating and arguing

14. A group of nurses from several different units in a hospital have been meeting together to discuss the problems they have providing the level of patient care and advocacy they feel their patients deserve. What strategy might be most effective to advocate for change in their hospital?

a. One nurse decides she needs to speak to the Director of Nursing and ask for longer working hours.
b. Individual nurses speak separately with their nurse managers about staffing issues on their respective units.
c. The group of nurses decides to speak to the Director of Nursing about short staffing issues and the impact it has on patient care and advocacy throughout the facility.
d. Two of the nurses decide to go to the Director of Nursing and say they will quit if more staff are not hired.

15. In what kinds of environments are nurses most likely to be able to advocate for themselves and their patients?
a. organizations that lack a culture of shared decision-making
b. environments in which nurses frequently have to use work-arounds to provide effective patient care
c. organizations with a strong culture of shared decision-making
d. environments with a strong focus on task completion

16. A nurse is working with a patient, attempting to determine whether there are any needs beyond immediate healthcare needs with which the patient needs assistance. What question might illicit this information?
a. How many children are currently living with you?
b. In the last twelve months, how often did you worry that your food would run out before you had money to buy more?
c. How often in the last twelve months have you and your family been able to engage in recreational activities?
d. When you are going grocery shopping or coming to doctor appointments, what kind of transportation do you use?

17. What two laws protect whistleblowers?
a. Whistleblower Protection Act; Healthcare Insurance Portability and Accountability Act
b. NPA; No FEAR Act
c. Occupational Safety and Health Act; Americans with Disabilities Act
d. No FEAR Act; Affordable Care Act

Check Your Understanding Questions

1. Explain the difference between individual values and a values system. How are values systems often clarified?

2. Describe how you might identify a patient's values?

3. Discuss the concepts of deontology and utilitarianism and how they are used in nursing ethics.

4. Explain how statutes and administrative laws, such as nursing practice acts, impact nurses and other healthcare workers.

5. Explain the difference between intentional and unintentional torts in healthcare settings and provide examples of each type.

6. Explain the difference between criminal charges and intentional torts for healthcare professionals, such as nurses. Why can both be filed against the same individual for the same situation? How are the penalties different?

7. Discuss the importance of nursing advocacy in public health, and describe how nurses can advocate at different levels for public health outcomes.

Reflection Questions

1. Consider everything you learned about the nursing process, and the discussion about nursing values. What additional values do you believe are important to the nursing profession that are not discussed here?

2. Consider the principles of nonmaleficence and beneficence. Describe the similarities and differences of these two principles, and discuss how it might be difficult to uphold them at the same time.
3. Consider the idea of being a mandated reporter. How do you feel about this? Can you imagine situations in which you may feel uncomfortable with having to report potential abuse? Why or why not?
4. Consider the various barriers to advocacy discussed and your own situation and personality. What types of barriers might you have the most difficulty overcoming and why? Can you think of any other barriers you might experience?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #3: Part 2.
   What other ethical principles (besides autonomy) are relevant to the patient's current situation?

What Should the Nurse Do?

An older patient has been brought into the emergency room early in the morning after being found unconscious in a park, presumably having been there all night. No identification is on the patient; they are now awake but confused. Their clothes are relatively clean and in good condition, but there are no clues as to the patient's identity. The patient had soiled themselves prior to admission. The emergency room staff have notified the police and social services that they have an unidentified older female, in case a missing person's report is filed.

1. Another patient asks the nurse if they think the patient was without housing. How should the nurse best respond to reflect the value of social justice?
2. A young nurse is assisting the nurse to care for this patient. She wrinkles her nose in front of the patient when they are helping the patient to undress, and the patient sees her, shrinking back from them in embarrassment. How might the nurse respond to preserve the patient's dignity?
3. Lab tests have come back showing a serious infection in the patient's system, which providers think may be contributing to her confusion. Providers want to start her on a round of antibiotics and request permission from the patient to do so. What should the nurse do to maintain her integrity and protect the patient?
4. Shara and Bob have been friends since nursing school. They work together on a medical-surgical unit. One evening, Bob was the charge nurse and Shara made a medication error that caused a patient to be transferred to the critical care unit. When completing the paperwork on the transfer, Bob realized the cause had been the medication error that Shara had not reported. When confronted, Shara asked Bob to keep that a secret between the two of them. What should Bob do, and what ethical considerations should he make?
5. A mother brings a young child into the emergency room with a broken arm saying the child fell off their bike. The mother is crying, and her tears are washing off eye makeup that appears to be covering bruises, and the nurse notices swelling on the mother's wrist as well. When looking at the patient's record, the nurse notes this is not the child's first broken bone. What should the nurse do?
6. Nurse Taylor works on a busy medical-surgical floor. Taylor has observed the unit is frequently understaffed during evening shifts, resulting in delayed responses to patient needs, longer medication administration times, and increased stress among the nursing staff. Despite attempts to communicate these concerns to the nursing manager, the issue persists, and Taylor is becoming increasingly worried about the impact on patient safety. What should the nurse do?

Competency-Based Assessments

1. Consider a nurse who is working on a busy medical-surgical unit. One evening she cares for a very sick patient who needs to be transferred to the ICU; however, there are no beds available in the ICU. While the transfer center tries to arrange for transfer to another facility with available ICU beds, the nurse must do her best to give the patient the care they need without having the resources available to do so. Eventually, the transfer center finds a facility that can provide the patient with the required level of care, but the patient dies while the ambulance is on the way to pick them up from the nurse's hospital. The family is at the bedside, angry, in shock, and devastated. Put yourself in this nurse's shoes and use this moral distress tool developed by the AACN (https://www.aacn.org/~/media/aacn-website/clincial-resources/moral-distress/recognizing-addressing-moral-distress-quick-reference-guide.pdf) to describe the experience in a brief one-page

statement.

2. Find and read your state's nursing practice act (https://ncsbn.org/policy/npa.page) using this website. Find five items in your state's NPA that surprise you or of which you were unaware. Identify each item and explain why you chose it.
3. Conduct some research and find out what the whistleblower protections are in your state. Are they primarily the federal ones, or does your state have additional protections? Describe the protections in your area in a brief paragraph.

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CHAPTER 17
Patient and Family Education

FIGURE 17.1 Nurses play a key role in patient and family education. (credit: modification of "Naval Hospital Jacksonville diabetes nurse educator 211026-N-QA097-111" by Navy Medicine/Flickr, Public Domain)

CHAPTER OUTLINE

17.1 Informed Decision Making and Self-Care
17.2 Methods and Approaches to Learning and Teaching
17.3 The Nurse's Role in Patient and Family Education
17.4 Evaluation of Teaching and Learning

INTRODUCTION As educators, nurses must be skilled at assessing patients' learning readiness and needs. Often, the interaction between a patient and nurse takes place when a patient is at a distinct disadvantage: they may be physically compromised, or troubled by pain, worry, anxiety, or confusion. There are other times when patient care is routine rather than urgent or emergent, and the nurse's focus can be placed on health promotion and disease prevention.

Health education not only addresses specific, existing symptoms or diagnoses but also focuses on proactive prevention of future health concerns. Barriers to education may be based on a patient's health history, environmental or geographic factors, and lifestyles. Although patients may have interest in taking an active role in their health and well-being, they may not know where to begin. Nurses play a vital role in empowering patients to contribute to their own care and maintenance of health. Recognizing teaching moments or creating the best possible environment for health education and patient learning are important for nurses to have and are necessary to provide quality patient care and ensure patient satisfaction.

This chapter explores health education and its impact on different aspects of wellness, self-care, decision-making, and consent. Patient and family education in professional nursing practice is guided by the American Nurses Association (ANA) Scope and Standards of Practice. Evaluation of teaching and learning is an essential step of the

education process; it can determine how well the patient and family understand what was taught and guide goal achievement.

17.1 Informed Decision Making and Self-Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the purpose of health education and informed consent
- Recognize how to promote patient health through self-care

To begin exploring the education of patients and families, two major concepts are presented: health education and **health promotion** (i.e., improving health). As active participants in their health care, patients **consent** to (agree and permit) their care, which often begins by accessing the healthcare system through an appointment with a provider. Care may subsequently be directed, to include consultations, medications, diagnostic testing, treatments, and surgeries. Nurses play a critical role in the education of patients and families as they learn and contribute to their own place in health and wellness decision-making.

Purposes of health education, including maintaining health and wellness, and contributions of self-care to health promotion, guide the specific path of exploration. Health maintenance is supported by factors such as adherence and compliance, and education can be key for patients and their families to understand important pieces of their medical care, such as applicable diagnoses and components of their plans of care. As educators, nurses must consider various aspects of their patient's lives, which can have positive or negative impacts on their participation in their care. Considerations, such as the patient's level of medical knowledge, motivation, and coping skills, are significant issues relative to education.

Purpose of Health Education

The purpose of patient education is to give patients the education and self-efficacy they need to maintain or improve health, and the ability to cope with new situations (Fereidouni et al., 2019). For patients who in a state of homeostasis, or physiologic normal balance, education may focus on health promotion and disease prevention.

Patients who are experiencing a current health challenge may be experience stress that affects their ability to learn (Cherry, 2022). Health problems may cause physical changes so dire that the body is merely trying to survive, or the physiological impact of stress itself may interfere with the ability to focus and understand new information (see Chapter 34 Stress, Adaptation, and Homeostasis). Although the purpose of education for this population shifts from promoting health and preventing disease to disease management, teaching remains critically important. For others, health education may need to center around coping with altered function due to a chronic condition. The possibilities of ongoing testing, therapies, and medications can be frightening and confusing, and there are typically numerous topics and approaches the nurse can use to educate under these circumstances.

Another component of patient education is empowering the patient to make informed decisions about their own care. In 1973, the American Hospital Association (AHA) adopted the Patient's Bill of Rights. The bill has since been updated, revised, and adapted for use throughout the world in all healthcare settings. There are different versions of the bill, but, in general, it safeguards a patient's right to accurate and complete information, fair treatment, and self-determination when making healthcare decisions. In 2018, the AHA created the Patient Care Partnership, which is an updated brochure of what a patient's rights and responsibilities are during a hospital stay.

LINK TO LEARNING

Click here to view The Patient Care Partnership (https://openstax.org/r/77PtCarePartner) document. This emphasizes the importance of a patient's right to make informed decisions about their care.

For almost all tests, procedures, and treatments, patients (or their designees) are required to provide consent before they can be completed. As the name implies, informed consent is a process that requires the education of the authorized decision-maker about the benefits, risks, and any alternatives of the procedure (Shah et al., 2023). Patients have legal and ethical rights to understand, guide, and approve of their own healthcare and treatment

decisions. This includes being given information about what a test, procedure, or treatment plan is, what it involves, how it is anticipated to aid in diagnosis and/or treatment, risks, benefits, and possible complications.

Healthcare providers such as physicians, nurse practitioners, and physician assistants are responsible for the thorough explanation of the procedure, including risks, benefits, alternatives, and any risks associated with the alternatives, and to ensure the patient or designee understands the whole process (Shah et al., 2023). Persuasion to comply with care through force, or **coercion**, is not acceptable, and the patient should have ample opportunity to clarify any information and ask questions as a participant in a collaboration of care (Strini et al., 2021).

Nurses tend to have the most interactions with patients and families, and often quickly establish relationships that foster opportunities for education. The registered nurse (RN) follows the scope, standards, and competencies of practice (ANA Scope and Standards of Practice, 2021). This includes being advocates for their patients. With regard to the informed consent process, this can involve collaborating with the prescriber and patient in various ways. This may include providing patients informational handouts and answering questions, arranging the time and space for the specific consent-related education between provider and patient, and contributing to the assessment of the patient's understanding of the circumstances (Strini et al., 2021). The nurse's role also includes witnessing the signatures of patient (or designee) and prescriber on the informed consent form. In circumstances where a patient has further questions after signing a consent form, or changes their decision, the provider is contacted by the nurse to inform them of the change in circumstance and facilitate another meeting between the parties.

LINK TO LEARNING

You may find it helpful to refer to this short, but thorough overview of patient education (https://openstax.org/r/77PatientEduc) at various times throughout the chapter, as specific topics appear.

Maintaining Health

Patient education plays an important role in establishing and meeting patient goals, decision-making, and creation of care plans (Saboktakin et al., 2021). Health maintenance involves helping patients identify their needs and participate in self-care as they learn to manage risk factors and prevent or control existing disease processes and diagnoses (Wang et al., 2022). Maintaining health also contributes to fewer complications from chronic illness or injury, shorter lengths of stay when hospitalized, and fewer readmissions after discharge (Bordonada et al., 2020).

Through patient teaching, nurses can help patients understand health and wellness as it pertains to their individual circumstances, how they can maximize participation in employment and social activities, and perform **activity of daily living (ADL)**, such as toileting, bathing, oral care, and ambulation. Another example of health and wellness maintenance is providing information about vaccinations. Although several immunizations are scheduled in early childhood, for prevention of disease, additional immunization boosters are required at various times throughout the life span for patients with certain chronic diseases. Education about various immunizations—how they work, recommended timing, the need for boosters, how they are administered, possible side and adverse effects—are all topics nurses can teach patients and families.

LINK TO LEARNING

A Vaccine Information Statement (VIS) is a document produced by the Centers for Disease Control and Prevention that informs patients, family, and caregivers about the risks and benefits of a vaccine they are receiving. VISs are required by law to be given to the vaccine recipient or caregiver prior to a vaccination dose. Click here to view the current VISs (https://openstax.org/r/77VIS) for multiple, routine, and nonroutine vaccinations.

Patient education is important in prevention of illness and injury, as well as in early identification of disease. Screenings, such as blood tests for diabetes mellitus (DM) and hyperlipidemia, and preventive diagnostic tests such as colonoscopy (a fiberoptic scope to visualize the colon) and **mammography** (radiographic examination of breasts) are important health maintenance activities that can provide early disease detection and prevention. Other preventive measures may include guidance for weight loss, smoking cessation, and mental health treatment.

Over the past decades, patients have become more interested and involved in maintaining their own health and well-being. Although some people take a more passive approach to their health and rely on their healthcare providers' advice, patients are increasingly understanding that the maintenance of their health requires active involvement. Nurses can help educate patients and family to promote health. Additionally, nurses can provide reputable resources to reinforce education and help alleviate concerns.

Promoting Adherence and Compliance

Education, whether on maintaining existing health or managing risks and challenges to health, is necessary to help patients understand their circumstances, make informed decisions, and be compliant with treatment plans. Nurses can help patients discover their own role in the plan of care through education and the value of adhering to and complying with the plan developed for them. One way to promote adherence and compliance is for the patient to play an active role in the formation of their care plan.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Quality and Safety Education for Nurses (QSEN) Competency: Patient-Centered Care (PCC)

Disclaimer: Follow agency policies and procedures for patient education and documentation.

Definition: Recognize the patient as collaborator in provision of compassionate care.

Knowledge: The nurse will incorporate patient and family preferences in provision of care planning and education.

Skill: Integrate patient and family in interdisciplinary patient care. The nurse will:

- Inquire and establish patient and family education needs and preferences.
- Share the patient and family's values and preferences with interdisciplinary team members.
- Provide respectful patient care focused on the patient.

Attitude: The nurse will consider the patient's viewpoint and awareness of their own care, with respect for needs, values, and preferences.

Adherence and compliance are supported by patient understanding. Whether the education is about a diagnosis, planned procedure, or drug therapy, the more the patient comprehends about what is required of them, the better. This may include providing education on the disease process, pain expectations, and control after a surgery, or explaining how a new medication works in terms that are easy for the patient to understand. Nurses can promote adherence and compliance by ensuring their patient education includes the following (Wang et al., 2022):

- Barriers identified to education
- Participants in education
- Preference for teaching strategy for education
- Timing of education
- Topic of education

Factors Affecting Adherence and Compliance

To adhere to and comply with healthcare plans, patients and caregivers must understand what is being asked of them. It is best if they are active participants in and agree with their plan of care. Consideration for potential hindrance to comprehension of care is important, as is recognizing positive influences. Some factors that can affect adherence and compliance include

- Cultural preferences (e.g., values and customs)
- Feelings and emotions (e.g., patients may be overwhelmed, apprehensive, worried, frightened, exhausted)
- Lack of comprehension of education (e.g., medical and nursing care plans can be complex and difficult to understand)
- Language needs (e.g., patients may speak and understand a language other than the one spoken by healthcare providers; delays for translation services)
- Patient care setting may be busy, even chaotic
- Physiological status (e.g., pain, discomfort)

- Unfamiliar terminology, medications, procedures, and laboratory studies

It is crucial for the nurse to be able to identify appropriate teaching moments, whether they be scheduled or spontaneous, and be responsive when a patient or family member asks a question. It is equally important to avoid potential barriers to adequate education in that moment and promote the effectiveness of the education given the challenges of the situation.

Health Literacy

The ability to read and write is described by the word **literacy**; those who are unable to either read or write are referred to as **illiterate**. There are many who are literate, perhaps even very well educated, but for whom the language of medicine is foreign and unintelligible. Because of the specific nature of this language, it has been labeled **health literacy**, which is described as the ability of an individual to locate, comprehend, and make use of health-related material and make healthcare decisions (Healthy People 2030, n.d.).

In anticipation of educating patients and families, it is important to assess both the level of general literacy as well as health literacy to ensure communication is effective. This is also a good time to ask and otherwise assess the audience's (e.g., patient, family, friends) preference for style and technique of the teaching session. Recipients who have limited literacy of any sort are not likely to make use of, or benefit from, written materials, so establishing their choice(s) for style is important. Different styles of learning, and associated teaching methods to best serve learners, will be further explored later in this chapter.

REAL RN STORIES

Test Before a Test: Answering a Patient's Question

Nurse: Angela, BSN
Clinical setting: Oncology office
Years in practice: 8
Facility location: Suburb of large city in eastern Missouri

I took a call from Mrs. Wong, who had seen the oncologist the day before for a 6-month follow-up. She had a rather large melanoma skin cancer removed 6 months earlier and was to have CT [computed tomography] scans every 6 months. Mrs. Wong said she was confused because her cancer was of the skin, and the physician had given her a prescription to have bloodwork done before the CT. Since I didn't have her chart handy, I didn't want to just guess and give the patient wrong information, so I asked her what tests she was to have done. She told me, "BUN and CREAT."

I asked her what the physician had told her about the scan, and she gave a good explanation of it: showing if there are any spots of concern about the skin cancer spreading to other parts of her body. Then she told me she just didn't understand what a blood test was going to do about the skin cancer. It was so helpful for her to explain just how much she understood—which was a lot—and I was able to describe to her that when she goes for the CT scan, she'll have an intravenous [IV] line put in so a "contrast" drug could be injected, because that's how any spots would show up on the scan.

She told me that made sense, so I went on to tell her that BUN [blood urea nitrogen] and creatinine are tests of kidney function, because the contrast is hard on the kidneys. By having those tests done beforehand, the physician will know if a different type of scan may be needed or another drug should be prescribed to protect the kidneys, or if drinking plenty of water after the scan should be enough. Mrs. Wong laughed a little, and told me she just could *not* figure out what BUN and CREAT meant, and why any blood needed to be tested if the CT was going to tell if the cancer spread. She told me that it made sense now, and she sure didn't want her kidneys to be damaged.

Because health literacy also involves the ability of individuals to "use information and services" (Healthy People 2030, n.d.), health insurance or other means of accessing care is a part of the concept of health-specific literacy. Navigating through confusing documents and terminology specific to insurance can be daunting, and for those with no insurance, access to other sources like free or discounted care may not be easy to find. Nurses, social workers, case managers, and other navigators are valuable guides for patients as they try to steer their way through

confusing paths within health care. Health information can be confusing because it often involves unfamiliar, complicated terminology, and perhaps medical jargon. Plain language and numbers, and considerations for culture, can help improve patients' ability to locate, understand, and use health information to make health-related decisions.

Like Healthy People 2030, the Agency for Healthcare Research and Quality is a governmental resource that offers a multitude of information about health literacy under headings such as "Health Literacy Improvement Tools," "Professional Education and Training," "Patient Education and Training," and "Research Tools, Data, and Funding" (AHRQ, 2024). Under the patient education heading, there are materials for health literacy assessments, as well as how-to directions for making healthcare information easier to understand. Healthcare providers can complete training modules about informed consent, and there are toolkits for specific topics like universal precautions and engaging patients and families specific to catheter-associated urinary tract infection prevention. For patients, there are videos with recommendations for interactions with the healthcare team, as well as ways to increase participation in one's own health and self-care. There are also other resources for various patient interactions with the healthcare system.

LINK TO LEARNING

The Agency for Healthcare Research and Quality's About Health Literacy (https://openstax.org/r/77HealthLitercy) provides information for patients and healthcare professionals. Try clicking the different items on the navigation menu to explore the information and tools available.

Motivation

Some people are driven by **intrinsic motivation**, or a drive toward achieving personal pleasure or fulfillment (Santos-Longhurst, 2019). Intrinsic motivation theory deals with basic psycho-physiologic necessities such as food, water, autonomy, and belonging as stimuli for health and wellness. Intrinsically motivated individuals are interested in their health and are open to learning about maintaining wellness and preventing illness. These are the easiest patients teach because they are already enthusiastic and ready to learn. However, for many patients, health and wellness have not been a priority or interest, so finding ways to reach and motivate them can be challenging. These people may respond to **extrinsic motivation**, or a willingness to participate in self-care activities when offered a reward, rather than meeting a psycho-physiologic need (Santos-Longhurst, 2019).

Preventive healthcare visits are an opportune time to introduce health topics, which ideally will lead to questions from the patient and allow them to demonstrate interest. The more interested a person is in a subject, the more likely they are to be motivated to learn more about it. If intrinsically motivated, patients are inclined to take pleasure in such activities as finding ways to improve their diet by finding interesting new nutritious recipes, or to improve strength and balance by exercising regularly (Santos-Longhurst, 2019). For the extrinsically motivated, goals may be based on winning an athletic event like a tennis match, or in losing a clothing size and getting a new outfit as a reward.

A motivated patient is more apt to be receptive to teaching, which is a good time to discuss risks and prevention. It is during such visits that topics like diet and exercise can be introduced as ways to decrease risks or actual development of hyperlipidemia, hypertension, or DM.

LINK TO LEARNING

The video Motivational Interviewing (MI) (https://openstax.org/r/77MotivInterviw) can be helpful in motivating patients toward behavior change. This video provides details about MI and how nurses can incorporate this into practice.

Acute episodes of injury or illness add potential barriers to patient and family education. Although such acuity may provide its own element of motivation (by providing a specific topic of interest), barriers such as pain, anxiety, and a battery of diagnostic tests can pull away the patient and family's focus. They also may be overwhelmed and unable

to come up with questions. In such circumstances, nurses typically try to triage education, for example, focusing on physiological care priorities, explaining the most important items, and identifying the main concern of the patient and their loved ones.

Coaching is a motivational technique used frequently by employers, but it can apply to patient education as well. Like athletic coaches, nurses help patients identify a particular problem or issue, set goals, and assist them with creating solutions. The patient is an active participant and gets the support of the nurse as they take the necessary steps. The relationship between the patient and their nurse "coach" tends to build as the interactions are established and enhanced over time. Some recommendations for motivational coaching include (Practice, 2023):

- Establish accountability through progress checks, reassurance, and support if and when needed.
- Help patients honestly identify and prioritize their goals.
- Offer tools including specifics for activities (e.g., exercise, diet, nutrition), schedule for exercise, and a detailed plan for follow-up.
- Present new ideas, such as ways to implement positive techniques and habits.
- Set SMART (specific, measurable, attainable, relevant, and timely) goals so patients understand all aspects of the goal and how they can be reached.

REAL RN STORIES

SMART Help with Diabetes

Nurse: Karen, MS
Clinical setting: Nursing
Years in practice: 14
Facility location: Louisiana

I had been asked to work at the diabetes station at a health fair. A couple of other nurses and I were doing fingerstick glucose checks, and I had been asked to provide education for those who had more questions. I remember a particular patient who said he just wasn't able to control his weight or blood sugars. This gave me a chance to ask a few questions and find out more about him and why he decided to ask for more information that day. Poor fellow, he almost came to tears saying how he couldn't keep up like he used to, and he was afraid he wouldn't be able to see his grandkids grow up. With a few more questions, we were able to dig deeper into some things he was quite worried about, and what he hoped to accomplish. His biggest concerns were his weight and his blood sugar.

His wife joined us, and we spent a while on the laptop exploring the American Diabetes Association (ADA) website, looking at lifestyle recommendations like exercise, nutrition, and recipes. With his goal of weight loss in mind first (and thinking if he gets that down, his glucose may stabilize, too), I helped him with goal setting. We used the SMART format and, again using the ADA website, decided to start with their recommendation of a 7% weight loss goal. That was both specific and measurable, especially because he had just had his weight checked at the fair. To help with the goal being both achievable and realistic, we looked again at recipes and picked a few that he and his wife thought sounded good. We also explored exercise options in the small town, which included a public gym with a swimming pool and a fenced field and running track at the school. Baby steps: he didn't want to spend extra money on the gym at first, so he suggested he would walk at the track in the mornings before school started.

We came up with timing to give a chance for these measures to have some effect and suggested a clinic visit in 3 months to see if he's lost weight, and measure his hemoglobin A_{1C} (a blood test that evaluates glucose control based on its relationship with hemoglobin) for long-term glucose control. Before starting the plan, because it involved implementing a new exercise program, he should make an appointment with a nurse practitioner at the clinic to have it approved or modified as needed. He took some printouts, and the notes we kept, and the phone number for the clinic to make his appointment Monday. His wife printed some recipes from the ADA website and was already planning to stop at the grocery store on the way home.

Facilitating Coping

Nurses spend considerable time with patients, often in intimate circumstances. Patients learn to trust nurses and

come to respect their input. By recognizing distress in a patient or family, nurses can assess the cause and facilitate coping through teaching, shedding light by helping the patient and/or family understand more about the circumstance, and providing options or methods to help patients manage more effectively. In many facets of life, knowledge is associated with power; health care is no exception. As patients receive diagnoses, their abilities to manage and cope with challenges and possibly bad news can be threatened. Patient teaching facilitates coping by providing the necessary knowledge to help weather the storm of reactions such as worry, anxiety, and feelings of helplessness (Bordonada et al., 2020).

Patients can be empowered to redirect maladaptive coping mechanisms and focus instead on techniques that are more productive. Nurses can facilitate coping by, for example, helping a patient concentrate on health maintenance by adhering to a new drug regimen, rather than emphasizing possible long-term effects that may or may not happen. Nurses can provide education and information about such strategies, including distraction, focused deep breathing, and various complementary therapies such as aromatherapy, pet therapy, cognitive behavioral therapy, and music therapy. Replacing activities that are stress inducing with those that are stress reducing facilitates positive coping and reduces stress (Shostak et al., 2024).

REAL RN STORIES

Helping a Quitter

Nurse: Rick, BSN
Clinical setting: Step-down unit
Years in practice: 4
Facility location: Seattle, Washington

Jerry had open-heart surgery 5 days ago and was transferred from the ICU [intensive care unit] to my step-down unit the evening before I took care of him. Most of the postoperative open-heart patients I took care of were out of the ICU on post-op day 2 or maybe 3; Jerry though, he couldn't come off the ventilator for a while. He had been a heavy smoker, and although he was only 50 years old, his lungs struggled after that surgery. So, he was off the vent on day 3, and they kept him in the ICU for one more day; he made it here late on day 4. I was working nights, and Jerry was having trouble sleeping. It so happened he was my only patient, at least until I got a new admission, so we got to talking. He told me he'd been smoking since he was 17, and he smoked one or two packs a day. He said he'd tried quitting at least a dozen times, but he just couldn't beat the cravings.

Smoking cessation is such a big focus for our inpatients, and I knew there were a lot of resources for guys like Jerry. We went through some written materials we had on the unit. Jerry wasn't particularly interested in them. He said he didn't read much. He was really worried; he said he knew the surgery was like his final warning that he needed to quit. When he'd talk about quitting though, he'd get nervous, like he could feel the cravings again, even though he had a nicotine patch on. Then he'd feel his heart beat faster, which made him worry more. He said he couldn't afford the patch when he went home. I knew there was help for him through the state's quitline program. He had no idea! Seeing he could get help with patches or gum and other supports, just knowing such a program was available to him and wasn't going to cost him helped calm him down, and he started to think about being successful. Once he got excited about the quitline, and quitting, I couldn't slow him down! He called that night and set himself up with a coach and hoped his package would be at his apartment when he was sent home.

Preparing for Positive Health Outcomes

Educating patients effectively contributes to improved participation of patients in their health care and tends to result in enhanced ability for self-care (Bagheri et al., 2022). Confusion is possible with unclear communication during a teaching session. Clear communication and effective education contribute to positive patient outcomes. Multimodal approaches like adding images, audio, and video to oral, lecture-type delivery and written supplements are generally well-received by learners (Stanford, 2019).

An approach to teaching and learning that incorporates factors such as language, culture, age, and **learning style** (i.e., one's preferred method of learning: auditory, visual, written, or kinesthetic), can improve patients' interest and their ability to comprehend and retain information provided (Table 17.1). Teaching children and adults shares some

principles, but there are differences, with considerations for attention span, vocabulary, and experience, as well as psychomotor abilities and skills.

Learning Style	Definition
Auditory	• Learn through listening and speaking, such as through discussions and lectures • May use repetition or patterns (mnemonic devices) as a study technique
Kinesthetic	• Hands-on learners; learn best through completing tasks independently
Visual	• Learn through visual aids such as graphics, images, or maps to understand and retain information
Written	• Learn through reading and writing; can understand abstract concepts and translate them into essays • May be avid note takers or readers

TABLE 17.1 Learning Styles

When anticipating patient and family education, preparation is invaluable. Taking a moment to plan provides an opportunity to identify barriers to education. Positive outcomes are improved in some cases by educating not only the patient but family or friends, or a caregiver. This can be especially apparent with infants and very young children, and those who are cognitively impaired. Reinforcement from teaching multiple people can prove helpful in achieving positive outcomes.

It is sometimes necessary to educate patients and family members under conditions that are not optimal or conducive to teaching, and misunderstandings or inadequate education may influence a patient's adherence and compliance with the plan of care. Consider, for example, a patient who is pregnant and experiencing hyperemesis gravidarum (i.e., severe nausea and vomiting during pregnancy). As the nurse is attempting to teach the patient about dehydration and hypotension (low blood pressure), the patient's concentration is impaired by waves of nausea or interrupted by vomiting. If asked later about concepts presented, in an attempt to evaluate the teaching, it is likely the patient will not be able to recall information taught, and the education will need to be repeated.

PATIENT CONVERSATIONS

Problem-Solving: Worried for Mom

Scenario: A nurse in a primary care physician's office receives a phone call from a patient's daughter. She has several concerns about her mother.

Nurse: Please tell me a little more about why you're calling today.

Patient's daughter: I'm worried about my mom. She's living in her own apartment in a community for mostly older folks. Her dementia is getting worse, and she's been falling.

Nurse: Can you tell me more about the circumstances around her falls?

Patient's daughter: She hears voices sometimes. She says they're next door, or in the hall outside, or in her apartment. Last time she fell, she said she could swear someone was knocking on her door. She fell on her way to the door.

Nurse: Does your mom use a cane or walker?

Patient's daughter: Yes, a walker.

Nurse: When she went to answer the door, did she use her walker?

Patient's daughter: I don't think so.

Nurse: Does she sometimes think she can "make it" without the walker?

Patient's daughter: Yes. Or she is napping and rushes to get up, then forgets it.

Nurse: I see your mom takes metoprolol.

Patient's daughter: Yes. She has high blood pressure. And heart failure. She takes a water pill.

Nurse: Okay. Does she drink enough water?

Patient's daughter: I try to get her to drink more. She sips but doesn't usually finish a whole glass. She says she's worried because of her early kidney failure.

Nurse: For her blood pressure and heart failure, she needs less water, but with the water pill and metoprolol, she may become dehydrated—especially because she doesn't drink much. If she's dehydrated, there's a risk of her blood pressure dropping or not adjusting when she gets up suddenly. Keeping her fluids balanced, her blood pressure just right, and her heart and kidneys working is quite a balancing act. She needs enough water, but not too much. Often, we say 8 ounces an hour through the day, but let's check with the doctor as to how much *she* should have in a day with all that's going on. Then, we'll talk about some ways to get her to drink more water, how to get up gradually, and find ways to encourage her to use her walker.

Patient's daughter: Oh, that's a good idea. That information helps me to understand Mom's particular situation. And the doctor's specific recommendation as far as amounts to drink will be helpful. I can explain it better to Mom if I understand it better. I didn't realize how delicate the balancing act is between her heart, blood pressure, and water.

Promoting Health Through Self-Care

One notable method of health promotion is helping patients realize the importance of self-care. A common misunderstanding about self-care is that it provides a rationale for overindulgences, offering justification for behaviors, such as overeating, substance use or abuse, or overspending (Bottaro, 2023). Self-care involves people placing their health and wellness as priorities, through such healthy choices as exercise, sleep, adequate fluid intake, and a balanced, nutritious diet based on whole foods (Bottaro, 2023).

Self-care and the inability to maintain such care for oneself in times of infirmity or illness are represented by Orem's self-care deficit nursing theory, originally presented more than half a century ago (Hartweg et al., 2021). Orem described self-care as individuals' activities toward health maintenance and wellness. The theory makes connections between patients and nurses, particularly when patients experience a deficit or inability to sustain self-care activities. During such times of disability, nurses collaborate with patients, and members of the multidisciplinary team, to provide care (Hartweg et al., 2021).

The International Self-Care Foundation (ISF) created a framework called the "Seven Pillars of Self-Care." These pillars sort healthy (or positive) behaviors into natural groups that are similar to topics discussed in prior sections: health promotion, illness prevention, and health literacy. The ISF noticed synergistic relationships within these groups, whereby patients' positive responses to a healthy behavior may be associated with a similarly affirmative reaction to other self-care behaviors. Table 17.2 describes the Seven Pillars (ISF, 2023).

	Pillar	Description (Example)
1	Knowledge and health literacy	Individuals' ability to find and understand health information and services for health-related decision-making
2	Mental well-being, self-awareness, and agency	Awareness of physiological status (e.g., body mass index, blood pressure, metabolic functions [via laboratory results], screenings [e.g., colonoscopy, mammography])

TABLE 17.2 The Seven Pillars of Self-Care

	Pillar	Description (Example)
3	Physical activity	Regular participation of moderate physical activity (e.g., walking, bicycling)
4	Healthy eating	Diet containing balanced and nutritious components of appropriate calorie content
5	Risk avoidance or mitigation	Limitation or avoidance of negative behaviors (e.g., ultraviolet protection, smoking cessation, moderation of alcohol, vaccinations)
6	Good hygiene	Handwashing, oral care, safe and careful food preparation and storage
7	Rational and responsible use of products and services	Understanding health care: plans, drugs, diagnostics, potential side and adverse effects

TABLE 17.2 The Seven Pillars of Self-Care

LINK TO LEARNING

This video presents information (https://openstax.org/r/77selfcare) and examples of self-care, activities, and relative benefits. Watch the video and think about self-care activities you participate in, or how to incorporate self-care into your days.

Illness Prevention

Health promotion is closely tied to illness prevention, because maintaining wellness naturally helps people avoid illness. The U.S. Department of Health and Human Services Office of the Assistant Secretary for Health established measurable health objectives for public health, with the first Healthy People initiative appearing in 1980 as Healthy People 1990 (health.gov). Since that time, Healthy People has been updated each decade, with goals identified for the upcoming 10 years. Healthy People recognizes public health issues and prioritizes them in an effort to improve health. With Healthy People 2030, there are 10 objectives identified, with associated volumes of data, and a number of tools available.

One goal of Healthy People 2030 is to "help people get recommended preventive health care services" (OASH, n.d.). This goal recognizes how critical education is to ensuring comprehension of the relevance of preventive care for patients and family members. It includes several objectives reflecting screenings, organizations that offer services focused on illness prevention, medication adherence, and access to care. When possible, it is ideal to prevent occurrence of disease.

Education can influence a patient's overall compliance with the plan of care and encourage illness prevention (Bagheri et al., 2022). For example, a patient newly diagnosed with hypertension may be educated on the importance of a heart-healthy diet, medication adherence, and the importance of exercise. These practices will help control hypertension and prevent heart disease.

Factors Affecting Self-Care

As patients are informed about self-care and its influence on their health, wellness, and prevention of illness and injury, there are factors that nurses planning educational interventions must consider. Common factors affecting self-care include the knowledge, skills, and attitudes of the patient, readiness to learn, ability to learn, and learning environment.

Knowledge, Skills, and Attitudes

A deficit in knowledge, lack of skills, or unhealthy attitude can all have a negative effect on self-care and compromise the patient's ability to care for themselves effectively. These can have multiple causes, but most commonly occur because of:

- conflicting information from multiple sources
- cultural or spiritual beliefs
- lack of ability to perform tasks
- lack of engagement or motivation
- lack of time
- severe anxiety or stress

It is important to assess a patient's current knowledge, attitude, and ability to perform skills in order to address barriers and develop a successful self-care plan. This may include treatment modifications to comply with cultural beliefs, ADL aids to assist with self-care, creation of schedules to allow for adequate time, and positive reinforcement.

Learning Readiness

Optimal learning takes place when the recipient is ready to learn. This can include openness to new ideas and information and good physical condition without pain, anxiety, or worry. If a patient is not ready to learn, they won't be able to absorb any of the self-care information being taught.

Ideally, nurses can identify teaching moments when patients express an eagerness, or at least interest, in learning. This may be apparent by questions from the patient or family member. If such a moment does not present itself, communication with the audience during the planning stage may help. Patients tend to respond well when they know what is happening, so letting them know an approximate time assists with readiness to learn. Also, if pain management is ongoing, analgesia administration before teaching promotes learning.

PATIENT CONVERSATIONS

Preparing a Patient to Go Home

Scenario: Mr. Reggie Washington had abdominal surgery and is scheduled for discharge to home the following day. There are several self-care items the nurse will teach him about before discharge. To prevent overwhelming him, the nurse decides to teach one subject at a time and plans to educate him about changing the abdominal dressing with its next scheduled change.

Nurse: Mr. Washington, the surgeon is expecting you to go home tomorrow.

Patient: I can't wait! I don't get good sleep here.

Nurse: I'd like to start teaching you and your wife about changing the bandage on your surgical wound, so you'll have a couple times to get used to it before you leave the hospital.

Patient: My wife will be here in about an hour.

Nurse: Let me get you your next dose of pain medicine now. That way, you can take it and have a little nap before she gets here. When she arrives, I'll get things together and we'll go through the first dressing change. The pain medicine will still be in your system at that time, which will help you tolerate the dressing change.

Patient: That sounds like a plan.

Nurse: I'll show you where you can watch a video about bandage changes, too. You and your wife can watch it as many times as you want, and I'll show you how you can even look at it from home if you need a refresher.

Ability to Learn

Literacy or cognitive function deficits can influence a person's ability to perform self-care, and they create a challenge when trying to educate the patient about the importance of self-care. For example, a patient may not be able to learn healthy relaxation techniques to reduce stress, if they are unable to comprehend the information being given to them. Additionally, patients with cognitive function deficits may lack the problem-solving capacity to recognize their own signs and symptoms of agitation or stress and perform appropriate self-care interventions.

Physical deficits can also have a negative effect on a patient's ability to learn. Patients with visual, auditory, movement, or mobility deficits may benefit from the incorporation of assistive devices when learning self-care skills.

Neurological function, including gross and fine motor movements, are especially important if the education involves intricate skill acquisition and demonstration, such as for wound dressing changes.

Learning Environment

It is difficult to learn in an environment filled with distractions. There are times when such a setting is unavoidable, but whenever possible, arranging for patient and family education to be held in a comfortable environment fosters learning. Patient education frequently happens in a patient's room, with the patient in bed or a chair. If there is time for planning and there are different options for locations, considerations for ideal teaching and learning should include the following (Kuipers et al., 2021; Timme, 2022):

- Appropriate resources (e.g., audio-visual equipment)
- Comfortable seating
- Comfortable temperature and ventilation
- Minimal distractions (e.g., noise, activity)
- Privacy
- Sufficient lighting
- Visibility of the educator and any visual or task aids

Nurses, patients, and family create relationships and a collaborative environment for care, including teaching and learning. Positive relationships and interactions cultivate constructive discussion within the teaching session (Kuipers et al., 2021). This includes bidirectional active listening: the audience pays attention to the educator during presentation of information or demonstration of actions, and there is the opportunity for patients and their family members to ask questions, with the nurse actively listening and then answering the questions or clarifying any confusion.

UNFOLDING CASE STUDY

Unfolding Case Study 3: Part 3

Refer to Chapter 16 Legal and Ethical Considerations for Unfolding Case Study Parts 1–2 to review the patient data. The nurse is caring for a 58-year-old female with metastatic lung cancer who is a patient on the oncology unit of the hospital. The patient's health has been deteriorating for the past few months and she has expressed an interest in discussing palliative care options. Initially, the patient requested her family not be notified about her interest in palliative care; however, she has since changed her mind and her three children are present at the bedside waiting for the palliative care team to make their rounds to discuss her options.

Past Medical History	Patient has been receiving chemotherapy intermittently over the past 2 years. She reports one brief period of remission 6 months ago; however, the cancer returned shortly after. **Medical history:** COPD [chronic obstructive pulmonary disease], 1 pack/day smoker for more than 30 years, GERD [gastroesophageal reflux disease]. **Social history:** Three adult children, no known medical conditions. Husband of 35 years passed away 5 years ago in a car accident. **Family history:** Both parents deceased from natural causes. **No current medications and no known allergies. Last chemotherapy round ended 2 months ago.**
Nursing Notes	**1400: Assessment** Palliative care team arrived at 1230 to discuss options with patient and family. Patient's two daughters were visibly distraught during the conversation and made several comments indicating they would prefer their mother to undergo more chemotherapy in place of palliative care. Patient's son was agreeable to palliative care and stated his support for his mother to make her own healthcare decisions. Patient visibly upset about the situation and stated, "See, this is exactly why I didn't want to get my kids involved!" Patient has requested time to talk with her children and that the palliative care team come by again tomorrow for more discussion.

1. Recognize cues: What cues indicate the patient and her family have inadequate learning readiness regarding palliative care options?
2. Analyze cues: Is there anything the nurse could consider doing to make the environment more conducive to learning when the palliative team comes back the next day?

17.2 Methods and Approaches to Learning and Teaching

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the different methods of learning
- Understand the different approaches to teaching
- Recall the methods used for effective teaching

Teaching and learning are dynamic processes of interaction between the educator and learner(s). Three methods or domains of learning have been identified: cognitive, affective, and psychomotor. Although each method is unique, they do not function in isolation; they work in concert with one another. Teaching is approached by focusing on one person at a time or a group of people together. Education also has multiple methodologies, with delivery of content through different means. In nursing, this includes lecture, demonstration, handouts, and simulation. Like the methods of learning, teaching techniques frequently overlap and combine for multimodal delivery and to maximize delivery and retention of content and concepts. This section will move from the "whys" of patient and family education and the "hows" of health promotion through self-care, to methods and approaches to teaching and learning.

Learning Objectives

There are multiple objectives of learning recognized by psychologists, educators, and nurses, and each focuses on a different component (or domain) of learning. In the process of learning and moving from little or no experience to levels of more understanding, awareness or ability is the expectation of progress and achievement in the academic setting. The three components of learning are: cognitive, affective, and psychomotor.

As a clinical, practice-oriented profession, it is important to understand and use these three domains of learning when developing patient education. is also affected, and as higher levels of cognition (the process of knowing, thinking, perceiving, or understanding) are reached, different feelings and emotions are recognized.

Cognitive Learning

The process of knowing, thinking, perceiving, or understanding is called **cognition**. Learning based on the process of understanding, or cognition, is called **cognitive learning**. Understanding includes, but is not only, basic knowledge; it encompasses remembering through analysis and evaluation and, ultimately, generation or creation of new information (data, ideas, groupings, and evidence of learning) (Iowa State University Center for Teaching and Learning [hereafter, Iowa State University], n.d.). Within education, the widely accepted categorization of levels of cognitive learning is Bloom's Taxonomy, which was revised in 2001 (Figure 17.2) (Armstrong, 2023). Notably, the original taxonomy included the term "synthesize" in the familiar pyramid diagram as one step higher in cognition than "analyze." The revised version retains the original concepts but changed "synthesis" to "create," and moved it to the pinnacle of the pyramid.

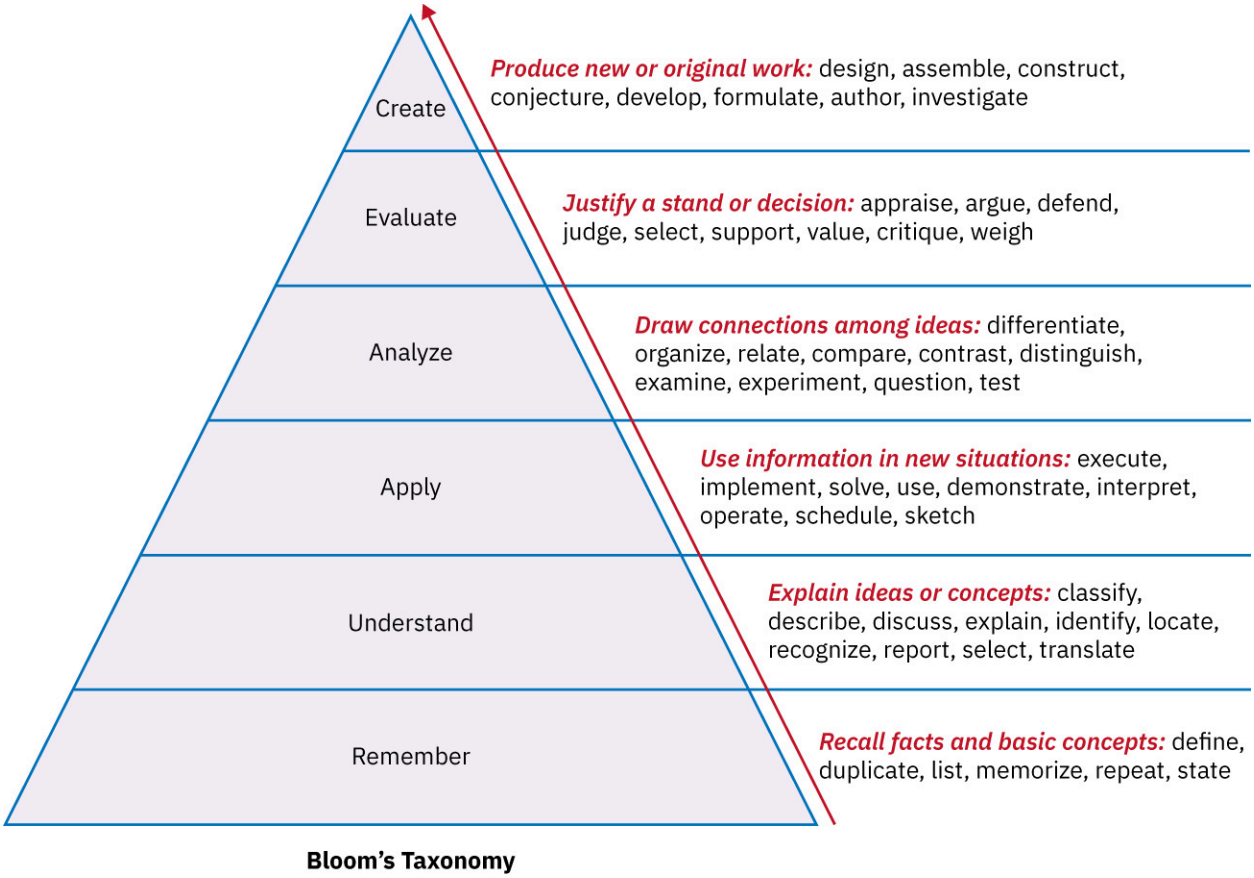

FIGURE 17.2 Bloom's Taxonomy (original and revised) is commonly illustrated as a pyramid, with levels of thought moving from basic remembering or recall, through creation of new ways of thinking or new conceptual insights. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

At the lower levels of Bloom's Revised Taxonomy, learners recognize and remember vocabulary and concepts, then move to understanding those concepts and then having an ability to make connections (Iowa State University, n.d.). At the next levels of application and analysis, the learner is first able to perform or employ a new task or idea, then to scrutinize it in more detail, with potential to reorganize findings in new ways and with novel considerations. The highest levels of Bloom's Revised Taxonomy involve evaluation and creation, whereby learners are first able to assess and critique thoughts and, ultimately, to develop hypotheses, propose new ideas, and present their own knowledge. These high levels are sometimes referred to as **metacognition**, which is colloquially known as, "thinking about thinking." A more comprehensive definition is that metacognition is an elevated level of thinking that allows comprehension, examination, and command of thoughts and the thinking process.

Cognitive learning is certainly a common focus on which patient education is based, with teaching presented through verbal instruction, essentially using a lecture format. Nurses explain parts of the care plan at various times while providing patient care. This may include describing how a medication works, possible side effects, and concerning adverse effects to be aware of, prior to administering the drug. Or they may include step-by-step

instructions delivered verbally about a dressing change before demonstrating it by changing the dressing. These can be supported by written and visual aids. The supplemental written or visual tools give patients something to refer to after the teaching session, to recall what was taught, and reinforce what is remembered. Educating patients and families may also incorporate the use of affective and psychomotor learning methods as an accompaniment to cognitive learning. More information on these items and concepts appears later in this section, and evaluation of teaching and learning is discussed later in the chapter.

Affective Learning

Centered on feelings, including attitudes, interests, and values, **affective learning** fosters the ability to recognize and address a person's own emotions and morals, and one's aptitude and comfort when facing ethical dilemmas and necessary decisions (Iowa State University, n.d.). Affective learning is associated with feelings typically internalized and not necessarily shared externally. The affective learning domain includes the following subdomains (Peak Performance Center, 2024):

- Receiving: passive awareness of ideas or incidents; open to situations
- Responding: active involvement in learning; aware of and responsive to stimulus
- Valuing: seeing value in something and being able to express its worth; motivation and commitment
- Organizing: an ability to sort and accumulate ideas, values, and materials; makes associations with existing beliefs; invests in prioritized beliefs and values
- Characterizing: actions represent the established, internalized values; able to analyze and describe behaviors and values

These subdomains can be visualized similarly to Bloom's Revised Taxonomy using a pyramid, representing the process of increasing complexity as a person's affect internalizes and influences behavior—from the general awareness of receiving, through the total devotion and internal motivation of characterizing (Figure 17.3) (Peak Performance Center, 2024).

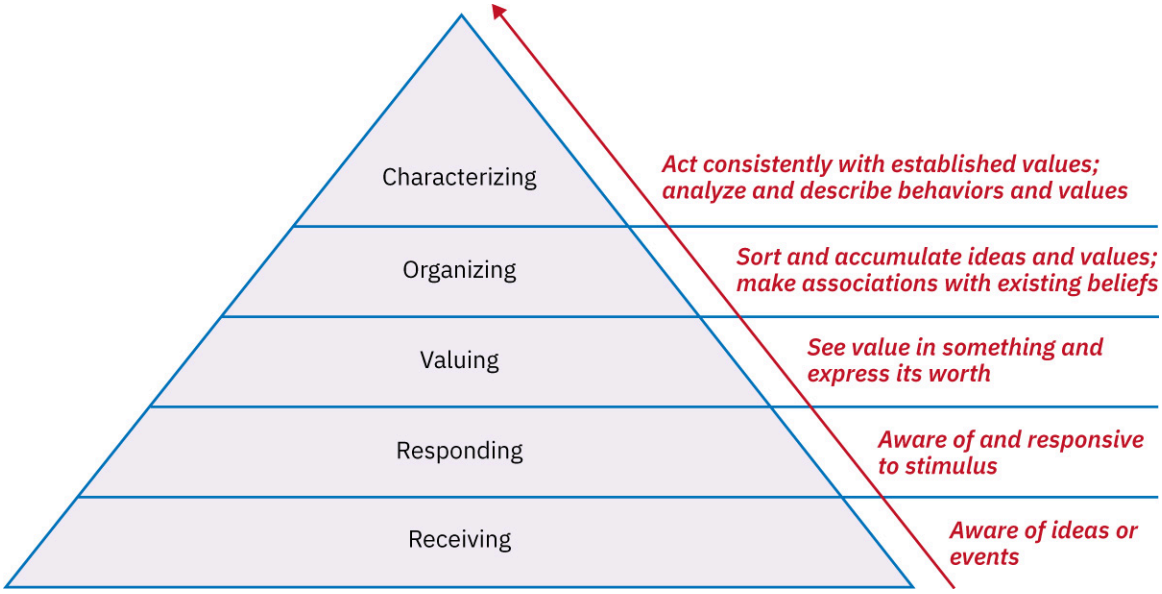

FIGURE 17.3 The affective domain of learning, as represented in a hierarchical pyramid, with higher levels of affective learning processes as the pinnacle is reached. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

In nursing, affective traits tend to be visible through caring practices seen in interpersonal interactions, particularly with patients and families. Helping patients and families identify and cope with new feelings about changes in health status, limitations to mobility, and pain, are examples of teaching and learning within the affective method of learning. Some techniques used to heighten patients' affective learning and identify changing, growing affective elements within themselves include journaling, simulation, group discussions, and participation in role-play activities (Iowa State University, n.d.).

Psychomotor Learning

The development of organized patterns of muscular activities guided by signals from the environment is called

psychomotor learning. Coordination is a combination of neurological control and musculoskeletal movement, with development over time, and through learning and doing. In patient education, some tasks are taught through all three learning methods, and psychomotor learning may be the best example of combining them for success (Alqahtani, 2022).

Often, patients are introduced to a diagnosis first through cognitive learning, at which time affective learning is also influenced because something new (perhaps involving an emotional reaction) is confronted. Adjustments to the patient's prior norm can result in new tasks, techniques, and skills for the patient and/or family members.

An example is a patient newly diagnosed with type I DM who must now learn how to use a glucometer, analyze its results, and self-inject insulin. Or, if the patient is a young child, family will need to learn how to perform the tasks. There is important information to be delivered by the nurse through cognitive teaching and learning methods to build an adequate level of understanding of the pathophysiology, current physiological status, and medications. Through psychomotor learning methods, the appropriate people will be taught and demonstrate acquisition of the following skills: glucometer use, read and respond to the appropriate insulin order, and inject the appropriate dose. Details on specific psychomotor teaching methods and evaluation of learning are discussed later in this section and chapter.

PATIENT CONVERSATIONS

Teaching about Insulin Administration

Scenario: The provider has prescribed regular insulin before meals for the patient, Mrs. Lovato, and has provided verbal and written directions about when and when not to inject insulin and how much insulin to inject. The provider has now asked the nurse to teach Mrs. Lovato how to check her glucose and use an inulin pen.

Nurse: Mrs. Lovato, I'm Melinda. I've been asked to teach you about checking your blood sugars and how to inject insulin.

Patient: Nice to meet you, Melinda. Yes, I need to learn. The doctor was telling me about how I just became diabetic after that infection I had. It's scary how that happened. But now I need to learn how to take care of myself.

Nurse: What a great attitude you have. I see you already have your glucometer, or glucose machine.

Patient: Yes, I do. I read the manual and think I know how to do this, but I'm glad you'll show me.

Nurse: First, I'm going to explain the steps. First, wash your hands, then put one of the strips from the little bottle into the glucometer. Then, take one of the devices with the sharp lancet and prick the tip of your finger. Touch the drop of blood to the test strip so it takes the blood and starts analyzing it. As you wait for the result, you can hold a cotton ball or tissue on your fingertip to stop any bleeding. When the meter finishes its analysis, it will show you your blood glucose level. Now you can take the used test strip out and throw it away. The lancet should go in a container for sharps, like for used needles. With the number from the glucometer, you can look at the directions the doctor gave you about insulin, and determine how much to give yourself. Don't worry, I have this all in a pamphlet for you, so you don't have to memorize the steps.

Patient: Oh good. I was so glad the doctor gave me the list of what to do when.

Nurse: Let's check your glucose now. This time, I will tell you the steps, and you can concentrate on trying to do them. I'll be right here to help if you need some help at any point.

Scenario follow-up: The patient successfully completes the process of checking her glucose, with just a little help getting the lancet to open. Her blood glucose is 172 mg/dL. The nurse now teaches her about her insulin pen.

Nurse: Your insulin pen is loaded with the type of insulin the doctor wants you to take. This is a pretty easy device to use: you look at the amount of insulin you need from the note. For 172 mg/dL, you need 3 units, so you dial that in with this, then you take the pen, hold it to the spot you are going to inject, and push this button. These are subcutaneous injections, and you should rotate the sites: you can use your upper arms, thighs, buttocks, and abdomen. Don't use the same place every time; rotate the spots to avoid lumps or deposits of fat.

Patient: It sounds easy enough. Let's try this.

Nurse: Absolutely!

Scenario follow-up: Like the glucometer, the patient demonstrates understanding of the insulin pen by injecting a dose of 3 units as prescribed.

Approaches to Teaching

Patient-centered care and patient engagement are important inclusions of patient and family teaching. Nurses need to incorporate topics of education that are important to the healthcare team, as well as the patient's (and caregiver's) interests, preferences, and priorities for information, by collaboration and mutual goal setting (Kuipers et al., 2021). Although some teaching moments are captured spontaneously by questions being asked, many times nurses can plan education sessions.

Assessing the audience's capability for learning, learning style, and health literacy is a valuable step for preparation of a teaching session. The patient's physiological condition and availability of family or other members of their support team are also important considerations. Once the nurse knows who will compose the audience—one or more people and who those people are, the nurse is able to better consider other details about approaches to teaching.

Individual Teaching

One-to-one teaching sessions may be preferred by either the patient or nurse for a variety of reasons (Figure 17.4). When the topic of education is particularly sensitive, for example, teaching only the affected person is often favored. Another example is urgency, when the patient is alone and something must be taught without delay. Sometimes, there is discord between family members and the patient, and patients may request to be the sole recipient of education.

FIGURE 17.4 Education can take place in many settings, and nurses use different resources to support the content being taught. (credit: modification of "U.S. Army Photo" by Jason W. Edwards/Health.mil, Public Domain)

Additionally, people are likely to have different goals, even when the same diagnosis or procedure is the topic of teaching and learning. Consider multiple patients anticipating knee replacement: different postoperative pain-control drugs and delivery devices may be ordered, so use and understanding of them will vary. Expectations for pain control are similarly variable, and personalized teaching for reasonable goal setting is ideal. One patient may expect, and desire, return to normal function at home, promptly; another anticipates transfer to a rehabilitation

facility to improve strength prior to discharge home.

Teaching one individual allows the nurse to take advantage of the relationship established with the patient. When there is a positive foundation in place, the patient is typically more receptive to education. This is particularly valuable if difficult content, or undesired behavioral change, must be discussed. Individual teaching is probably preferred, for example, for a patient diagnosed with breast cancer. Because the patient is to be taught about caring for an incision and multiple drains as part of the upcoming surgical plan, both the nurse and the patient are apt to prefer a private discussion and the ability to very specifically address concerns of one, rather than several, patients. Personalized instruction also supports ongoing relationships as the patient is more able to participate in the conversation, including freedom to ask questions, and be part of individualized goal setting. There are times when teaching, of necessity or by design, must be implemented in a group setting.

LINK TO LEARNING

The nurse in this video provides a patient with teaching (https://openstax.org/r/77PainEducation) about pain. Watch how the nurse is able to gather information and provide education.

Group Teaching

In certain situations, such as a patient who is unable to make their own healthcare decisions, teaching should include the family or caregivers. Nurses will have to rely on family and/or friends to assist with reinforcing and reminding the patient of new behaviors or forgotten instructions. It is necessary to include these people in teaching whenever possible. Even for people who are independent in decision-making, having another person present for education can be helpful. Individuals understand things differently and may have questions to ask and concepts that need clarification.

LINK TO LEARNING

Watch this video and notice how the nurse provides care and education after the patient has ambulated (https://openstax.org/r/77AmbulatnCare) and the responses of the patient and her husband.

Establishing relationships with patients was mentioned as a positive aspect of individual teaching, but connections can also be created between nurses and groups, and the group itself may enhance the dynamic of the education environment. Group teaching may involve a patient and spouse or significant other, or it may be several people with the same diagnosis. Some groups are formal support or interest groups, like members of Alcoholics Anonymous (AA), or a particular cancer survivors' support group. Nurses may need to be more intentional in creating smaller groups within a larger population, but if desired, more intimate groups can be fostered for patients and/or their family members.

Depending on the goals of teaching and learning, group settings may be favored. Cognitive learning, for example, fits well with either individual or group environments, but the final selection may be based on whether several questions are anticipated or there is a psychomotor aspect to be demonstrated and exemplified. Such activities can require extra time, and the physical setting requires visibility of the action to be taught.

Affective learning can be nurtured through group interactions because some of the techniques used to establish and foster emotions, attitudes, and interests include storytelling, role-playing and simulation, and shared discussions. Sharing with others, receiving feedback, and inspiring discussion often results in patients learning and realizing more about their own feelings, and, essentially, how they feel about those emotions and responses. Group therapy relies on the nature of this dynamic for the beneficial outcomes of sharing, interacting, and supporting.

Psychomotor learning lends itself to either setting, depending on the complexity and sensitivity of the skills. Ostomy care, for example, is probably not ideal for a group setting, unless it is being taught initially on manikins. However, patients in a preoperative hip replacement surgery class could be taught as a group about postoperative positioning and use of walkers and other assistive devices. The facilitator's time could be well spent in such a setting, with

demonstration and return demonstration being evaluated during one session.

Methods of Teaching

Instruction methods can be distinguished as direct or indirect. Both methods are considered effective strategies in education (Lakha, 2023; Renard, 2023). Learning that involves active engagement of the educator and learners is called **direct instruction** (Austin Peay State University, n.d.). The teacher leads the teaching and learning through examples such as lecture, discussions about assigned readings, a question-answer session, or sharing a video. On the other hand, indirect instruction involves learners using learned tools to fulfill an assignment, with limited involvement from the educator (Austin Peay State University, n.d.). Examples of assignments within indirect instruction include reading an assigned article or chapter, submitting an assignment (e.g., presentation or paper), or viewing a recorded lecture.

Educating patients may involve using a combination of indirect and direct instruction, and may make use of multiple learning methods. Patient and family education can be delivered in different ways, including lecture, demonstration, handouts, or simulation. Understanding a patient's learning preferences enables the nurse to have the right delivery method prepared. Preparation provides the best potential for achieving patient care goals.

Lecture

Lecture is a familiar teaching method and is often seen as an ideal way to deliver high volumes of information. Teachers and learners tend to be familiar with the lecture format, and it brings an inherent feeling of comfort (Baylor University Academy for Teaching and Learning [hereafter, Baylor University], n.d.). Although it is efficient at delivery, it is less efficient at the receiving end, because much of the information is unlikely to be retained (Baylor University, n.d.; Berkeley Center for Teaching and Learning [hereafter, Berkeley], n.d.; Bosnich & Lee, 2022). Verbal instructions may also be misunderstood or quickly forgotten.

One recommendation to make the content more easily understood and retained is to make the lecture more interactive (Baylor University, n.d.; Berkeley, n.d.). Strategies for supplementing a lecture include ensuring the presenter has expertise in the topic being presented, is well prepared for the lecture, and is using an active method of delivery (Figure 17.5). Lectures may also be supported by other teaching methods (Stanford et al., 2019), including diagrams, handouts, videos, moments for discussion and/or question-answer periods, demonstration, or time to work through a case study.

FIGURE 17.5 When lecturing to a small audience, interact closely with learners, accompanying the verbal lecture with nonverbal gestures and visuals when appropriate. (credit: "U.S. Navy Lt. Cmdr. Suzanne Maldarelli, right, a medical officer, conducts a subject matter expert exchange on advanced cardiac life support with Lissette Recinos, a public health nurse, at a hospital in Toledo 140627-N-XQ474-030" by MC3 Andrew Schneider/Wikimedia Commons, Public Domain)

When nurses are educating patients, there are added components that may influence the retention of information that is presented. Both literacy and health literacy are concerns, because patients may have deficits in reading and general writing abilities. Additionally, those with high levels of literacy may not understand health-specific information. Ensuring that medical terms and concepts are fully defined in plain language prior to delivery of a large amount of information is an important step. Continuing with a simple-to-complex format can be helpful because it allows the nurse to continue to provide a foundation before moving on with more intricate details. In the healthcare setting, enhancing the lecture format with other methods, such as activities and practical applications, can be even more valuable for maintaining patient interest and comprehension.

Demonstration

Teaching of patients and families often is focused on psychomotor learning. The teacher typically begins by explaining the topic of education (the lecture [cognitive learning] component). At that time, the nurse may supplement with written information (e.g., handouts [cognitive learning]), and demonstration provides a complete illustration of the procedure. Imagine a nurse working with a patient who has a new ostomy and needs to learn how to assess the surgical stoma, as well as perform ongoing care like emptying the bag and replacing appliances, as needed. The nurse first explains the stoma, normal and abnormal findings, appliances, and what is involved in each step of care. At that time, the nurse demonstrates the assessment and procedures, offers a chance for questions if they were not asked during the demonstration, and provides the learner(s) with written and/or video information for review and ongoing reference (Figure 17.6). The patient and/or family member is expected not only to demonstrate the task back to the nurse but reiterate steps and entertain questions while performing the skill.

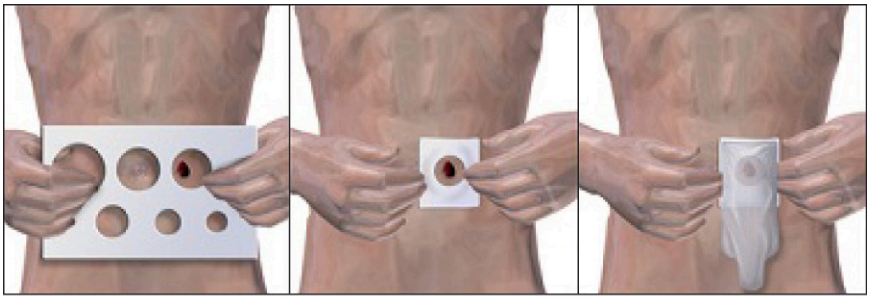

FIGURE 17.6 There are multiple steps to ostomy care. This image can be used to aid in teaching a patient how to change the ostomy wafer and bag. (credit: modification of work "Figure 10.17 Application of ostomy appliance" by Pressbooks/https://pressbooks.bccampus.ca/, CC BY 4.0)

Either at a scheduled time or when assessment indicates it is time to repeat the procedure, the nurse again welcomes questions and asks the patient (or the individual who will be completing the actions) to provide a return demonstration by explaining and performing the process. Upon completion by the learner, the nurse may ask for clarification and understanding of any part of the return demonstration or critique the process. Questions and reflection by the patient and family at this stage may offer insight into their emotional state (affective learning) and adjustments being made internally relative to feelings and attitudes about the tasks, and their implications. The nurse may need to repeat part or all of the demonstration. As with any new technique, the level of skill should improve with repeated attempts.

Handouts

Informational handouts are useful for patient and family education (Bosnich & Lee, 2022; Kostie, 2019). Some benefits to handouts are that they can be referred to after the educational session ends and reviewed for clarification. Often, the amount of information being taught quickly is overwhelming to the learner. Even if defined clearly, medical and technical terminology can be confusing. Additionally, printed handouts may include illustrations and diagrams that help support verbal explanations from the lecture style of teaching (Figure 17.7). Visual learners find these features especially helpful. Handouts can also include links for electronic resources, websites for further information, and audio links to hear unusual sounds, informational podcasts, and videos for animations, narrative information, and context.

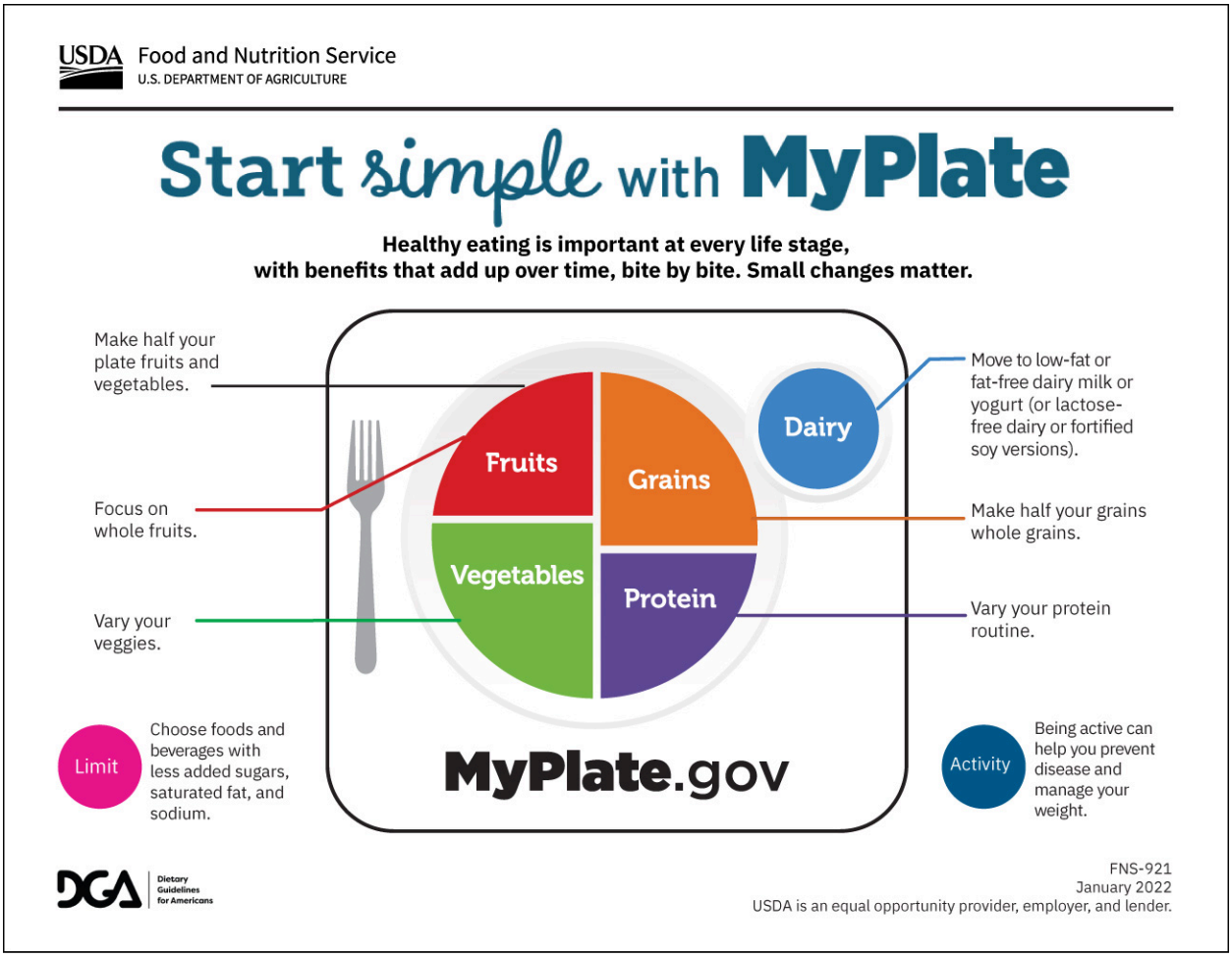

FIGURE 17.7 The plate is a nutrition and dietary tool to assist patients with healthy portion size and dietary choices. This tool can be provided to patients as a resource to use when creating balanced meals. (credit: "Start Simple with MyPlate" by U.S. Department of Agriculture, Public Domain)

Written information is not well received by all, especially patients whose reading abilities are extremely limited (Stanford et al., 2019). Therefore, including multiple, complementary ways of teaching for patient and family education is more effective than using one method exclusively (Bosnich & Lee, 2022).

LINK TO LEARNING

The nurse in this video instructs a patient and family (https://openstax.org/r/77WalkerUse) on use of a walker. Notice how the nurse incorporates lecture, demonstration, and handouts.

Interactive Simulation

Simulation can be a valuable teaching method or method to enhance information provided either verbally through lecture or on written handouts. Simulation can be very simple, such as working through a straightforward case study or having a group role-play activity. Case studies can also increase in complexity. In specific laboratory settings for simulation, it may also involve technically advanced, high-fidelity manikins, hospital-like sets, scripts, and/or standardized actors in particular roles and scenarios. No matter the level of fidelity, the educator is involved in facilitating the scenario and ensuring important concepts are identified and resolved or explained.

LINK TO LEARNING

This simulation (https://openstax.org/r/77DMEducation) demonstrates a nurse educating a patient and his mother about DM. Watch for the nurse's teaching style, what is included in the education, how it is presented, and the inclusion of psychomotor skills, as well as cognitive, informative teaching and learning.

Simulation can incorporate lecture-type verbal teaching with demonstration, through the addition of a realistic scenario that includes the desired educational objectives for the patient and/or family. This allows the learner(s) to see information presented through a varied teaching methodology and practice or demonstrate competence by actions.

UNFOLDING CASE STUDY

Unfolding Case Study 3: Part 4

Refer to Unfolding Case Study 3: Part 3 for a review on the patient data.

Nursing Notes	**1000: Assessment** Patient reports her children are agreeable to her decision to pursue palliative care. She expresses interest in receiving care in her own home and that her daughters would like to learn how they can help care for her as well. These requests were passed on to palliative care team who will be back to speak to the patient and family members later this afternoon.

3. Prioritize hypotheses: Which type of learning (cognitive, affective, or psychomotor) do you think is going to be most important during the conversation with the palliative care team and why?
4. Generate solutions: What teaching strategies might the palliative care team use to teach the patient's daughters how to care for their mother at home?

17.3 The Nurse's Role in Patient and Family Education

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine how providing patient education meets nursing standards
- Determine the different roles of the nurse for providing patient education
- Recognize essential skills needed to provide effective teaching

Health care is an interdisciplinary effort, with members of the team representing a variety of professions. Each member, from physicians to nurses, varied therapists, counselors, and spiritual representatives, contributes their specific and specialty care. Registered nurses, as care planners and those who spend a great deal of their time in directly caring for patients, are in a natural position to educate patients and their families. It is more than the interaction that places nurses in a position for patient teaching; the nursing standards of practice (ANA, 2021) specify the RN's roles and competencies relative to health teaching, promotion, and prevention of illness.

Patients and families encounter nurses in a multitude of settings, with nurses taking different positions and roles. Each role may involve nurses providing education on different topics, in different ways, and with different goals. Nurses must be able to evaluate teaching and learning to determine its effectiveness and assess a patient's goal achievement.

Nurses need a variety of skills to be effective educators. Behaviors such as approachability, dependability, and flexibility are necessary to establish trust and develop quality relationships with patients and families. Knowledge of the topic to be taught is also essential, enabling the nurse to present information and manage discussion and questions, which may not be possible to anticipate. Perhaps the most important skill for patient and family education is communication. Proficiency in the other teaching skills may be manifested through excellence and clarity in communication.

In this section, how nursing standards are met by patient education will be detailed. Some of the roles played by nurses in the provision of patient education will also be discussed. Finally, the required skills for effective teaching will be explained.

ANA Scope and Standards of Practice

The ANA Scope and Standards of Practice offers decision-making and practice guidance for professional RN practice. The nursing profession involves a practice scope for RNs, which is expressed as "the who, what, where, when, and why" of nursing roles and professional practice (ANA, 2021, p. 3). Additionally, RNs practicing in any nursing role are expected to adhere to authoritative standards of practice. The standards are broken down into "Standards of Practice," and "Standards of Professional Performance" (ANA, 2021, p. 4). The distinction is that practice standards relate to competency in nursing practice, whereas professional performance standards reflect professional role competency.

Competence is a key feature of professional nursing practice, and the ANA document defines competencies for each standard. Competencies are listed for RNs, as well as nurses with advanced practice licensure. Professional performance competence is displayed through involvement in leadership activities at the level of the nurse's education, role, and expertise.

The ANA (2021) recognizes that professional nursing practice is anything but static and, therefore, is subject to change. Clinical and environmental circumstances may also influence how nursing standards apply to a particular situation. Although each standard offers several exemplars, the ANA also recognizes that additional competencies may be realized in certain situations. Health teaching and promotion are specifically addressed in Standard 5B as "the registered nurse employs strategies to teach and promote health and wellness" (ANA, 2021, p. 85).

Health Teaching and Health Promotion

A holistic, individualized approach to patient and family education is within the RN's scope of practice and is expected to include health promotion and disease prevention strategies.

Educating patients and their families about their medical and healthcare concerns is both a natural and developed expectation of nursing practice. Health teaching and promotion, Standard 5B, include seven competencies for the RN, as listed in the ANA Scope and Standards of Practice (2021, pp. 85–86): In the areas of coping, adaptability, and resiliency, the RN

- Engages consumer alliance and advocacy groups in health teaching and health promotion activities for health-care consumers.

In the area of healthy lifestyles, the RN

- Provides anticipatory guidance to healthcare consumers to promote health and prevent or reduce risk.
- Provides healthcare consumers with information and education about intended effects and potential adverse effects of the plan of care.
- Provides opportunities for the healthcare consumer to identify needed health promotion, disease prevention, and self-management topics such as self-care and risk management.
- Uses feedback from the healthcare consumer and other assessments to determine the effectiveness of the strategies uses.
- Uses health promotion and health teaching methods in collaboration with the healthcare consumer's values, beliefs, health practices, developmental level, learning needs, readiness and ability to learn, language preference, spirituality, culture, and socioeconomic status.
- Uses technologies to communicate health promotion and disease prevention information to the healthcare consumer.

These competencies are clear in that health promotion and disease prevention are both critical topics of health education, and various aspects of patients' lives may be relevant and incorporated into the teaching. As discussed previously regarding health literacy, nurses as educators also assist patients and families to access and comprehend information to make their own healthcare decisions (Healthy People 2030, n.d.).

Advocacy

In professional nursing practice, advocacy is a process involving support and recommendations for a cause or action

plan (ANA Scope and Standards of Practice, 2021). Standard 8 of the ANA Scope and Standards of Practice (2021) is dedicated to advocacy and states, "the registered nurse demonstrates advocacy in all roles and settings" (p. 91). Following the standard statement, there are 15 advocacy-related competencies, with more listed for graduate-prepared and advance practice nurses. Some examples of these competencies are in the following list (ANA Scope and Standards of Practice, 2021, pp. 91–92):

- Addresses the urgent need for a diverse and inclusive workforce as a strategy to improve outcomes related to the social determinants of health and inequities in the healthcare system.
- Champions the voice of the healthcare consumer.
- Considers societal, political, economic, and cultural factors to address social determinants of health.
- Develops policies that improve care delivery and access for underserved and at-risk populations.
- Embraces diversity, equity, inclusivity, health promotion, and health care for individuals of diverse geographic, cultural, racial, gender, and spiritual backgrounds across the life span.
- Empowers all members of the healthcare team to include the healthcare consumer in care decisions, including limitation of treatment and end of life.
- Promotes self-care, safe work environments, and sufficient resources.
- Recommends appropriate levels of care, timely and appropriate transitions, and allocation of resources to optimize outcomes.

Elements of advocacy apply to professional nursing in provision of patient care in a variety of ways, including

- Assistance with access to care
- Community programs
- Direct patient care and skills
- Ethics committees
- Patient and family education
- Policymaking

Professional nursing education programs include elements of advocacy in courses such as those focused on leadership, management, professional role development, policy, and global perspectives (Regis University, 2023-2024; University of Phoenix, 2023). Exposure to elements of advocacy while in nursing school, at a minimum, introduces these elements and more, so students are at least familiar with the concept of advocacy. Ideally, students begin to make connections during classroom and clinical experiences, realizing some of the places where advocacy is apparent or perhaps where it is lacking. For some, exposure to the concept of advocacy, and realizing at least some of the ways it can be used by nurses, is merely the first taste. Such students are intrigued by and become active participants in advocacy through the National Student Nurses Association and other organizations. This active appreciation for advocacy may continue through a nurse's professional career.

The healthcare system is often confusing for patients and their families. Education is an important way to assist healthcare consumers as they navigate this large and complicated system. As with diagnoses and direct care, patients and their families tend to function better when they understand their circumstances. Teaching patients about the resources available for any aspect of the system represents advocacy and could include, for example, a Medicaid application or information on how to find safe housing. Referring a family member to appropriate people, departments, or agencies while their loved one is physically incapacitated is another example. As advocates of healthcare consumers, nurses may bring status changes and patient questions to the attention of the physician or advanced practitioner. Or the advocacy role can be reversed, when the nurse advocates to the patient through education, acting as an intermediary between the interdisciplinary team and the patient. Health promotion and disease-prevention-education ideas, plans, and programs can also be considered advocacy, because patients are assisted toward better health and wellness.

Roles of the Nurse

Nursing is a multifaceted profession, with varied roles in different practice areas and specialties. Regardless of the setting, the importance of education cannot be understated. Nurses, as the healthcare members who spend significant amounts of time with patients, play key roles not only as direct care provider but as teacher, counselor, and evaluator. These three roles are elaborated upon in the next sections.

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize Hypotheses: Discharge Teaching and Pain Control

Mr. Isaacson is being discharged to home after outpatient laparoscopic cholecystectomy. Until this surgery, Mr. Isaacson had no hospitalizations or surgeries, and his medical history includes only hypertension, which controlled with hydrochlorothiazide. Mr. Isaacson has required four 50-µg doses of fentanyl since surgery to maintain pain at ≤3 on a 1–10 scale. Mr. Isaacson is concerned he will become addicted to pain medicine, so he is hesitant to have his wife fill his prescription for home.

The nurse considers Mr. Isaacson's needs for discharge education and prioritizes pain control as top priority, because surgical pain is usually most severe in the first day or two. Because Mr. Isaacson is concerned about the potential for addiction, the nurse first addresses that concern. Then, the patient and his wife are taught about pain, how the pain medicine he has a prescription for works to control pain, and proper use of the medication.

Nurse as a Teacher

The role of teacher is often a natural one for nurses, and its value cannot be overstated. Patients who are educated about their health, well-being, and illness or injury prevention express increased satisfaction in their healthcare interactions (Bordonada et al., 2020). These patients also tend to participate more in self-care, health promotion, and illness or injury prevention activities.

As providers of direct care and members of the healthcare team who spend much time with patients, nurses can establish relationships with patients and have many opportunities for interaction throughout a shift. Teaching moments present themselves during different activities nurses do with patients. For example, the opportunity may arise while a dressing is being changed and a patient asks questions, or the nurse simply teaches as the task is accomplished by describing the steps and explaining normal versus abnormal findings. Another example would be when the nurse and aide have a patient dangle their legs from a sitting position in bed in anticipation of standing and walking. This is the perfect opportunity to explain why these careful steps must be taken for the patient's well-being. The nurse can then teach the safety features of a gait belt, while putting it on for transfer or ambulation.

Patients and family members tend to be more comfortable when providers clearly communicate with them, and when they understand roles they have in the plan of care. Comprehension of the diagnosis, diagnostic tests, procedures, and recovery all help reduce worry, facilitate adequate pain control, and prevent complications. A patient who is concerned about an upcoming surgery will benefit when nurses can offer repeated preoperative teaching. This can be especially valuable when a patient is in hospital and day and night shift staff nurses can both reiterate teaching topics and ensure the patient and family have all their questions answered.

REAL RN STORIES

Successful Coaching

Nurse: Margaret, BSN, RN
Clinical setting: ICU
Years in practice: 5
Facility location: Aurora, CO

A colleague (Sara) and I found ourselves working together for our shifts: she worked on days and I worked on nights. In report, she told me our mutual patient, Mr. Hernandez (Mr. H), was scheduled for coronary artery bypass graft surgery the next morning. He was anxious about the surgery and had shared he had a history of general anxiety. Sara began his preoperative (preop) education that day and suggested we "tag team" him with frequent teaching sessions so he would understand as much as possible about the surgery, what to expect postoperatively (postop), and how best to proceed through all the steps involved. We reassured Mr. H that we would be taking care of him for at least the 24 hours after his surgery, so he would have familiar faces and voices when he woke up.

I spent a lot of time in his room, doing his preop preparation, but more importantly just being there, which gave him

the opportunity to ask questions and talk. He wanted to do everything required to do well post-op. Sara and I agreed it was important for him to realize he would remain intubated on the ventilator and his wrists would be restrained throughout the night, which was expected to be somewhat uncomfortable and maybe a little frightening. On the plus side, however, as long as he was hemodynamically stable, the ventilator would allow better pain control.

Through the shifts, we reviewed with Mr. H that the more cooperative he could be, the more quickly things were likely to progress, with extubation anticipated about 6 a.m. When I returned for my second shift, his surgery had gone well: he was back in his room, sedated on propofol, and receiving morphine for pain. Sara reported that when his sedation was lightened for neurologic assessments, he awakened "a bit rough." With both of us at the bedside before she went home, we woke him up. "Mr. H, you're in the ICU. Surgery's over, you're doing great. Sara and I are both here now." His eyes popped open, and bounced around, his arms reached up, pulling at the restraints. We could tell when he saw us, though, and remembered what he had been taught. His eyes focused and held, he let his arms drop. He nodded, and as we coaxed him to slow his breaths, he did, and his mouth relaxed around the tube. This was the pattern whenever I wakened him through the night. It was so awesome to see him recall the coaching and will himself to overcome the anxiety. His recovery proceeded exactly as we all hoped: he was extubated by the time Sara returned and up in the chair in time for an ice-chip breakfast.

Nurse as a Counselor

Although nursing degrees do not license RNs specifically as counselors, an element of counseling is often associated with the role of a nurse. Patients facing new limitations, diagnoses, and treatment recommendations are coping with challenges and the need for emotional and physical support, as well as education (Figure 17.8).

FIGURE 17.8 Nursing care is a combination of art and science that places nurses in a position to provide counseling and education that address the needs of patients and families with compassion and nursing knowledge. (credit: "Nurse administers chemotherapy" by Rhoda Baer/Wikimedia Commons, Public Domain)

Nurses play an important role in counseling patients and families in primary care with chronic health diagnoses. By addressing concerns such has health literacy, knowledge deficits, acute and chronic illness, and emotional and educational needs, nurses counsel patients in multiple ways. Nurses assess, and assessments of learning needs and preferences, literacy and health literacy, and physical limitations are all well within nursing practice. The relationships established between nurses and their patients and families provides a natural venue for this aspect of nursing care. Counseling, including coaching, advising, and teaching, as well as guiding patients toward techniques for self-care, follows intuitively within professional nursing practice.

Nurse as an Evaluator

The nursing process includes assessment, analysis or diagnosis, planning, implementation, and evaluation. When presented in this way, the process looks linear, with the evaluation step as the final place on the line. Evaluating the process at completion is based on the assessment findings that led to the diagnosis, the creation of the care plan (e.g., goal setting, planning interventions), and implementation of the interventions. Evaluation is used to determine if goals were met or an identified problem resolved.

However, the nursing process is not linear. It is often represented more accurately as a cycle in which evaluation leads to a continuation of the process, and assessment, once again, starts a new iteration of priorities and actions (Figure 17.9).

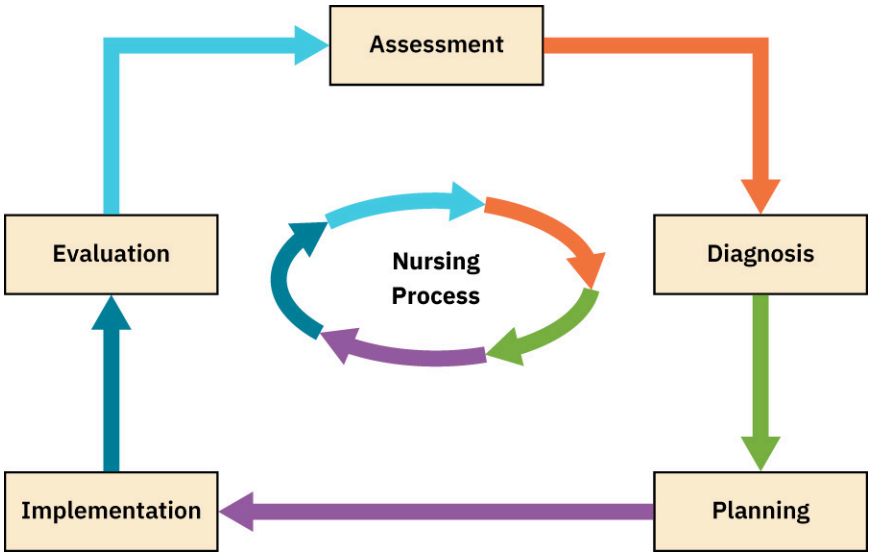

FIGURE 17.9 The nursing process includes the five steps of assessment, diagnosis, planning, implementation, and evaluation in this image in an ongoing cyclical manner. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

In spring 2019, a newsletter from the National Council for State Boards of Nursing (NCSBN) introduced the Clinical Judgment Measurement Model (CJMM). This model provides a more comprehensive approach to the clinical judgment of nursing. Within the model, the evaluation process occurs in the second and third layers and includes both action-taking and outcome evaluation steps (see Nursing Process and 43.1 Clinical Judgment Measure Model). Whichever model is used, evaluation plays an integral role in determining the accomplishment of goals and outcomes, and guides a return to either assessment or recognition of cues from the component of hypothesis-formation component of the CJMM.

LINK TO LEARNING

For more of the NCSBN's description (https://openstax.org/r/77CJMMDescr) of the CJMM, read the first three pages of the spring 2019 newsletter, followed by the action model.

Skills Needed for Effective Teaching

As previously introduced, the purposes of patient education include promoting health, preventing disease, restoring function, and facilitating coping and adjustment to the new normal when necessary. To accomplish goals related to patient education, the nurse should understand teaching theories and use them suitably to maximize the effectiveness of the teaching for an individual patient and/or family.

In addition to teaching and learning theories, styles, and strategies, there are skills based on behaviors and the ability for human interactions. These include the ability to effectively communicate and be approachable, knowledgeable, flexible, and dependable. These skills can be found throughout the history of nursing, nursing practice, and nursing education. Florence Nightingale, for example, was knowledgeable, as evidenced by her hands-on approach to nursing care, nursing (and pharmacy) education, and statistical prowess (Lewis, 2020). Watson's

Caring Science and Theory of Human Caring, and implications noted by Gandhi and Mukherji (2023) can also be found within skills for effective teaching. The following sections explore these skills in more depth.

Effective Communication

The ability to communicate effectively has been a recurring theme in this chapter. Assessment of patients' and families' needs and goals, literacy and health literacy, cultural background, learning preferences, surroundings, comfort, tools needed for the session, and physical status are all considerations for the nurse when planning and implementing education. Preparation for teaching fosters the nurse's ability to effectively communicate by allowing them the time to review any lapse in knowledge, which they can use to optimize the delivery of information. This also permits time for skill review, if the nurse has not recently performed a particular task.

CULTURAL CONTEXT

Cultural Considerations

Culture influences many facets of a patient's life, including spiritual and religious behaviors and practices, diet and nutrition, communication and displays of respect, and ADLs. If and when time allows, it can be helpful for the nurse to become familiar with cultural practices that are important to each patient and family. Generalizations may cause unnecessary expenditure of time, effort, and education, with teaching focused on a practice not followed by a particular patient. An example is the nurse making an assumption about a patient who belongs to a group noted for having many members who are vegetarians. The nurse plans potential goals and dietary education based on a meatless diet, only to discover that the patient eats fish and chicken.

Even when nurses are familiar with a particular culture, they need to be wary of inherent assumptions based on broad conceptual strokes, which can lead to misunderstandings. When setting educational goals and priorities with patients and their families, perhaps the best method for clarifying cultural practices and preferences is to ask straightforward questions. There may be surprises, and the inquiry can become a pathway to building a positive relationship. The act of asking illustrates an interest and respect for the individual, and actively listening to the replies indicates the specific interests, practices, preferences, and behaviors are important to the nurse.

Another element of effective communication is the ability to discuss necessary information, including medical terminology, procedures, and medications, in lay terms. This can be time-consuming and is similar to translating between different languages. But if patients and families do not have the necessary vocabulary, understanding more complicated concepts will be difficult or impossible, and will ultimately take longer time. Effective communication avoids confusion and establishes and fosters trust between nurses and their patients (Wright, 2021).

Communication should be clear, the volume of speech or audio-visual materials should be adequate, visual enhancement (e.g., closed captioning) should be provided for any audience member with hearing impairment, and communication should be at a level of understanding for the patient and family. Visual impairment should also be considered and accommodated with assistive resources. For example, large print can be used on teaching material. Information should be delivered through varied methods, such as written or video formats. Multiple methods support behavioral, linguistic, and community preferences. All materials should be culturally appropriate. Post-session evaluation of teaching effectiveness should be incorporated through opportunities including questions and answers, teach-back, and demonstration.

Approachability

Being easy to talk to or interact with is known as **approachability**. Some consider friendliness as akin to approachability. There is a common tendency among those who choose nursing as their career to be caring and compassionate individuals who have a desire to help people and alleviate suffering. These traits commonly associated with nurses and nursing practice have led to nurses being considered approachable by patients even—and perhaps especially—at the most difficult times (Petronio-Coia & Schwartz-Barcott, 2020; Thakur & Sharma, 2021).

Research has explored the influence of smiling on the patients' healing process and revealed that patients felt nurses who smiled were more approachable and caring, which tends to support the synonymous nature of the term friendliness with approachability (Thakur & Sharma, 2021). These welcoming traits help nurses cultivate

relationships and settings that foster effective teaching. This can include teaching moments, spontaneous and scheduled, as well as a safe and comfortable environment for learners to ask questions, make mistakes and learn from them, establish competence with new skills, and demonstrate acquisition of new knowledge and abilities.

LINK TO LEARNING

Explore Dr. Watson's 10 Caritas Processes (https://openstax.org/r/7710Caritas) and consider the characteristics and behaviors of effective teaching and the roles of the nurse. Compare the processes. Where do you think caring intersects with nursing?

Knowledgeable

Nursing relies on conceptual and procedural knowledge. Courses in nursing curricula include focus on both aspects. However, because nursing is a practice discipline, theoretical and didactic classes are not the only approach. Clinical courses are required, offering experiential teaching and learning. Clinicals set in outpatient clinics, mental health and community facilities, and acute care facilities offer students experiences with direct patient care. This provides interactions with patients and their families and friends, opportunities for therapeutic communication, skills practice, and an introduction to patient teaching.

Patients and their families rely upon and trust nurses for personification and practice of both the art and science of nursing. To teach effectively, nurses should have knowledge not only of the specific patient situation, diagnosis, pathophysiology, treatment plan, medications, and procedures, but also some understanding of teaching and learning theories and principles. The patient learning-needs assessment, in addition to frank discussion with the patient and family about literacy, health literacy, and how much they already know and understand, all provide guidance for the nurse on the patient's needs.

To best meet those needs and achieve goals, knowing at least some basics of the different learning theories, including how learning is received and processed, techniques, and implications for the learner(s), allows for individualizing educational interventions. There are five major learning theories: behaviorism, cognitivism, constructivism, connectivism, and humanism, with implications for applying learning theories to both the traditional classroom-and-student scenario and patients (Table 17.3) (Ghandi & Mukherji, 2023).

Learning Theory	Description	Teacher Implications	Learner Implications
Behaviorism	• Stimulus + response = learning • Reward and punishment reinforce knowledge. • Behavior modification from reinforcement of positive behaviors	• Teacher centered • Possess adequate knowledge and provide environment necessary for accurate learner reaction(s) • Provide reinforcement to learner responses.	• Evaluation: measurement of outcome(s) by demonstration of new behavior • Fits with clinical tasks • Feedback and practice develop correct actions and step-by-step skills.
Cognitivism	• Internal information processing • Information reframed with existing knowledge	• Provide organized focus of content. • Experiential reflection • Metacognition	• Learner centered • Fits with didactic course(s) • Acquire and cognitively reorganize new material into one's own knowledge
Constructivism	• Existing knowledge and experiences provide foundation. • New information and ideas + prior experience(s) = learning.	• Facilitate learning. • Provide guidance.	• Learner centered • Fits with didactic and clinical combination course(s) • New learning viewed through prior experiences • Subjective ideas, associations, and conclusions

TABLE 17.3 Major Learning Theories and their Implications

Learning Theory	Description	Teacher Implications	Learner Implications
Connectivism	• Connections between life (roles, interests, activities) + cognitivism principles + constructivism = network of learning. • Knowledge from individual and locating/ reorganization of external information	• Use life experience(s) and networks to identify materials. • Provide guidance to external foci of learning and knowledge for individual incorporation.	• Learner centered • Learning combines internal and external application aspects of a group. • Fits with didactic and clinical combination course(s) and digital learning
Humanism	• Similar to constructivism and theory of adult learning • Freedom and autonomy • Self-actualization as objective	• Little structure • Guide and inspire toward autonomy	• Learner centered • Innate desire for learning • Survival/physical fulfillment of needs results in self-actualization.

TABLE 17.3 Major Learning Theories and their Implications

Flexibility

The nature of nursing requires flexibility: the ability to modify (or change) or be modified. Patient care is very dynamic; physical status can change unexpectedly and quickly, and nurses must act promptly in response. Anticipation of potential alterations to plans and proactive maneuvers are often even more effective than reactive responses. Even when a patient is stable and remains so, other patients can influence the nurse's priorities. Wait times may lengthen, surgery or other procedures may be rescheduled, and personnel may be called to other care areas when more urgent or emergent situations arise.

From the onset of nursing school, students learn to become flexible. Some situational examples that would require the nurse's flexibility are:

- COVID-19 resulted in canceled in-person classes and clinicals.
- Patient assignments can change as patients are transferred to other areas or discharged.
- Patient death
- Patient isolation requirements may prohibit students from direct interaction (e.g. tuberculosis).
- Student or faculty illness and absence

Upon licensing, nursing responsibilities increase from those of students. The ability to leave work on a regular schedule at the end of every shift can change because nurses are considered essential personnel. Nurses have obligations to be relieved by another nurse, and one may have to wait for relief to arrive. Natural disasters and weather conditions may require flexibility; for example, a blizzard may halt traffic in an affected area, and essential personnel may be expected to stay within a designated region for availability.

Other situations requiring flexibility include equipment malfunctions and availability of certain rooms or supplies. As part of a larger multidisciplinary team, nurses and other partners do not always have complementary schedules, so waiting is sometimes necessary for treatments, therapies, or tasks to be completed. Education may be one of the items postponed or rescheduled, or it may need to be modified such that it can be delivered under different circumstances than those originally planned. Discharge teaching, for example, may be delayed while something else of higher priority must be handled first, or it may be provided by another nurse.

If a patient's status has deteriorated and immediate transfer to higher level of care is needed, the focus of teaching changes from detailed to limited, and the importance of follow-up should be highlighted. An example is telling a family member, "Your wife is being transferred to intensive care. I need to call report to the nurse there and get her moved. One of my colleagues will show you to the ICU waiting room, and I'll come talk to you after she's settled into the room there." By providing at least that explanation, family members do not feel forgotten and have some idea of what to expect next.

Dependability

Being reliable, or trusted, describes **dependability**. Through clear and effective communication, an approachable attitude, a strong knowledge base, reliability, flexibility, and consistency, nurses demonstrate and personify dependability. Effective teaching is strengthened by nurses who are dependable, follow through with expectations, and establish themselves through the combination of actions and words. Patients, families, and interdisciplinary team members rely on dependable nurses, as do other partners in health care. Trust in nurses as dependable professionals fosters strong relationships among healthcare providers, with open communication and collaboration contributing to enhanced patient outcomes.

17.4 Evaluation of Teaching and Learning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe different evaluation methods for teaching and learning
- Understand the importance of analyzing and interpreting evaluation methods

The evaluation step of the nursing process allows nurses to determine whether goals were met using the interventions created. Similar to the nursing process, the education of patients and families must also be evaluated for its efficacy. Without this essential step, there is no way to determine that the teaching session was successful.

It is also important for the nurse to analyze results and interpret how they influence the next steps for the patient. If goals have been achieved, the education on a topic or topics may be concluded. If goals are unmet, however, the process continues with reassessment. Subsequent findings from the patient's updated needs assessment will indicate the need for further education, typically with revisions to the goals, the teaching methods, or both.

Evaluation Methods

Teaching may take place separate from learning; an educator can present information and concepts, yet learning may not be effective and established goals may not be achieved. Patients and family members may respond to teaching with head nods or smiles, but those reactions could be attempts at being polite rather than a demonstration of actual understanding. Nonverbal responses like nodding or shaking the head may contribute to the evaluation of learning, but specific and objective measures, such as direct observation of actions, demonstration of an acquired skill, verbalization of comprehension, and use of a checklist, offer more reliable corroboration of learning.

Direct Observation of Actions

Observing the learner in normal setting for actions and behaviors illustrating learning acquisition is referred to as **direct observation of actions**. There are similarities of this evaluation method with return demonstration and verbalization of understanding, because the nurse is engaged in visual and/or auditory observation of a skill or body of information. Direct observation is different from the other listed methods because the observation is done surreptitiously, or not in such an overt manner as the other evaluation methods.

REAL RN STORIES

Deep Breathe and Cough

Nurse: Brian
Clinical setting: Neurological-trauma unit
Years in practice: 3
Facility location: Baltimore, MD

I'd been taking care of a 77-year-old who had fallen down the stairs outside her home; she had a couple of rib fractures and fractures to the right clavicle and wrist. She was pretty bruised up, and she didn't want to take deep breaths because it hurt. We talked about using her incentive spirometer (IS) hourly and how important it was for preventing pneumonia, but she really didn't want to use it. At about 1:30 in the afternoon, her grandson came to visit; he was about 5 years old. I went in the room to take out her lunch tray, and the boy was playing with the IS in his lap. I stood for a minute outside the door and heard him ask her what it was. "Oh that," she said, "it's to keep me from getting sicker. They don't want me to get pneumonia." The boy asked how that would help her not get sick. I listened to her as she described that pneumonia might happen if she didn't take nice, deep breaths, so she was supposed to use the little machine to take deep breaths, 10 times an hour if she was awake. He asked something I couldn't hear, but her answer was that the deep breaths would probably make her cough, and both those things together would keep her lungs working right. Funny: for all her resistance, she really had been listening, and she actually gave her grandson a good explanation of pneumonia and the IS. And she showed him just how deep a breath she was able to take, then she coughed. Her grandson cheered her on for nine repetitions. I dropped off her tray and sat down to document evaluation of her IS teaching by direct observation.

Direct observation is frequently combined with checklists as a way to minimize subjectivity and maximize objectivity in observational evaluation (Nayyeri et al., 2021). Checklists provide clear descriptions of criteria for the actions under evaluation. Some direct observations are formalized through a process called **direct observation of procedural skills**, which are particularly helpful for evaluation of step-by-step psychomotor tasks. For patient education, this could be exemplified by a nurse watching a family member changing the patient's wound dressing and listening to the description of the appearance of the wound, incision, and how much drainage is noted in the dressing during the procedure.

It can be helpful to observe that patients are following suggestions they were taught, even when they don't realize they're being watched (Fix et al., 2022). Examples of direct observation include surveying a patient's actions while they are eating a meal and drinking a beverage. This often does not include a formal tool like a checklist, but it is during such activities that the nurse can monitor whether a patient who has been taught careful mastication and swallowing techniques is using those techniques for safety and aspiration prevention. Another example of informal evaluation is watching a patient ambulating with a family member, observing for correct application and use of a gait belt or assistive device such as a cane or walker.

Direct observation of actions may be a valuable method for evaluating literacy or health literacy skills. An example might be a nurse who hears a patient describe their medical diagnosis and related testing that is scheduled, or a parent explaining to a child why there is no breakfast tray on the morning of their surgery. In the next section, return demonstration of skills is explored, which has some overlap with direct observation.

Return Demonstration of Skills

A patient or family member's ability to demonstrate a psychomotor skill (or multiple skills) after having it is presented by the nurse is referred to as a **return demonstration**, which has the patient showcase the ability to complete the task by performing it back to the educator. This evaluation method involves the nurse educating the patient and/or family with a combination of verbal explanation and showing the process of a particular skill. The description and task may be exemplified separately, or the nurse may illustrate the steps of the procedure and simultaneously narrates. After the primary demonstration, the learner is offered an opportunity to ask questions and practice before evaluation of return demonstration.

Mastery varies depending on the complexity of the skill, abilities of the learners, and expectations as to how many teaching and learning sessions required. It is also expected that learners approach a new skill in a linear, stepwise fashion. At different stages, acquisition of a skill may take longer. While putting the pieces together, most learners are not able to multitask by speaking while doing. Asking for a description of the procedure before requesting a demonstration is a common way to approach a task that involves multiple, coordinated actions.

When a patient or family member can demonstrate a newly acquired skill with precision, this is known as **skill acquisition**. The learner can not only correctly perform the skill but do so more rapidly while maintaining accuracy. At this stage, proficiency is being developed. The ability of the learner to not only accomplish the skill properly but do so promptly and to converse at the same time, illustrates full understanding of the task. All three of the learning methods discussed earlier are incorporated into this demonstration. The patient shows an understanding of both

the cognitive and psychomotor processes, the fluency involved in multitasking, and comfort in holding a conversation at the same time—all of which supports the affective component of learning.

Verbalization of Understanding

Another method for evaluation of teaching and learning is for the learner to verbalize understanding. Asking open-ended questions that require more than one-word answers can illustrate acquisition of learning. Giving patients and family members an opportunity to describe what they comprehend at various intervals provides the nurse with insight about how much they know and understand. Allowing time for questions offers the nurse a chance to determine understanding or confusion about topics that have been taught. Verbalization of understanding may be used as an independent evaluation method or in combination with another method, such as discussion with a patient after a return demonstration.

PATIENT CONVERSATIONS

Education: A Lot to Swallow

Nurse: Mr. Alvarez, I saw you eat breakfast while I was setting things up for your shower. I noticed that since the speech therapist gave you some tips, your swallowing has improved. I didn't see you hesitate between chewing and swallowing, as was happening before. How do you feel about eating and swallowing today?

Patient: So much was going on in my brain! Remembering what the therapist said and trying to chew more than I used to. And not to swallow too soon! I was really nervous!

Nurse: I know it can be a lot. You have many therapies to think about since your stroke, but you're working very hard to recover! I want you to know, you felt nervous, but you did all the steps the speech therapist told you, and I didn't notice you were nervous.

Patient: Thank you. I'm going to try just as hard with walking when I see the physical therapist later.

Nurse: Excellent, Mr. Alvarez. I'll plan to watch you walk later and see how you do.

The teach-back method is a commonly used technique in health care whereby the patient or family member is asked to repeat, in their own words, the information they received through education. As mentioned earlier, when patients are first presented with new information, they may understand and retain only a portion of it. By asking the patient to recall information and explain it in their own words, the nurse can get a better understanding of what information was retained and what information needs to be retaught or clarified.

LINK TO LEARNING

The teach-back method is an evidence-based intervention used to improve patient–healthcare provider communication and health outcomes. Explore the Teach-back Toolkit (https://openstax.org/r/77teachback) and how you can incorporate it any time important information is being shared.

The use of teach-back in discharge education reduced rates of hospital readmissions and improved patient satisfaction (Yen & Leasure, 2019). Patients also have a higher ability for self-care, greater understanding of their diagnosis, and compliance with their medication and treatment regimen (Yen & Leasure, 2019). Teach-back may also be used in conjunction with return demonstration after the teaching of a psychomotor skill.

UNFOLDING CASE STUDY

Unfolding Case Study 3: Part 5

Refer to Unfolding Case Study 3: Part 4 for a review on the patient data.

Nursing Notes	**1630: Assessment** The palliative care team has met with the patient and family and addressed all concerns. They all agreed for the patient to be discharged immediately and receive care at home. The patient's daughters were taught how to safely reposition their mother in bed and how to administer her medications.

5. Take action: What evaluation methods might the nurse use to determine whether the teaching provided to the patient's daughters was successful?
6. Evaluate outcomes: What findings would indicate the teaching provided to the patient's daughters was adequate?

Checklist

Checklists can serve as an independent evaluation or provide documentation of evaluation, such as direct observation of actions, return demonstration of skills, and verbalization of understanding. Checklists can be simple or complex, depending on what is being evaluated. More complicated psychomotor skills, such as those that require multiple steps, a combination of evaluation methods, or illustration of acquisition of a skill in more than one learning domain, require a checklist that reflects the patient's various achievements.

A checklist also helps objectify the evaluation process, which can be valuable for complex skills or processes, which have different levels of achievement and acquisition. Checklists permit the educator-evaluator to make notations for listed skills, as well as levels of performance. Spaces can also be included for initials and/or signatures of both the teacher(s) and learner(s). Space may be allotted for comments, which is helpful when there is the possibility of a note being vague or inconclusive without explanation (Figure 17.10).

Discharge Education		
Patient Name: _____ **Physician Name:** _____ **Physician Phone Number:** _____ **Pharmacy:** _____ **Pharmacy Phone Number:** _____		**Initials** Patient or Rep/RN
Plan of Care	**Plan of care reviewed for:** ☐ Home ☐ Skilled nursing facility ☐ Rehabilitation facility ☐ Other	
Medications	**Medications reviewed:** Drug name: _____ ☐ Purpose ☐ Dose ☐ Frequency (how often) ☐ Route (how to take) ☐ Side effects (expected, common, rare) ☐ Adverse effects (worrisome/common, rare)	
Self-Care	**Health promotion & illness/Injury prevention:** **Actions to prevent worsening of problems** Symptoms to be alert for: _____ What to do if symptoms occur: ☐ Call PCP office ☐ Urgent care ☐ Emergency department ☐ 911/ambulance	
Follow-Up	**Follow-up appointment:** Needs to be scheduled/When: _____ **Outpatient services:** ☐ Physical therapy ☐ Occupational therapy ☐ Speech therapy ☐ Behavioral/Psychiatric therapy ☐ Other **Support systems:** ☐ Family ☐ Friend ☐ Other **Transportation:** ☐ Family ☐ Friend ☐ Service ☐ Other Contact Case Manager _____ at (phone number) _____ if a problem arises after discharge.	

FIGURE 17.10 A discharge planning and education checklist can be a helpful way for the patient and nurse to document education conversations, understanding, observations, and return demonstration of skills. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Analyzing and Interpreting Teaching and Learning

Evaluation also involves analyzing the teaching and learning process to determine whether the teaching was effective and successful. Teaching efficacy is reflected by whether the patient learned what was taught and if the learner's goals were achieved. If evaluation of the data indicates one or more goals set prior to the educational intervention were not met, the care plan may be modified to meet the goals for the patient. This involves reassessing the patient's educational needs, revising patient goals, and revising teaching methods.

Reassessment of Patient's Educational Needs

Reassessment is key to identifying changing learning interests and priorities, as well as causes for why teaching was successful or unsuccessful. If the educational session was successful, the patient acquired the correct knowledge or skill, and the goals were achieved. When an education session is unsuccessful, reassessment of the patient's educational needs can determine what interventions need to be adjusted to meet education goals. For example, a patient who is unable to complete a return demonstration on how to inject insulin may need another interactive demonstration by the nurse. They may also have a fine motor function deficit that makes it difficult for them to draw insulin into a syringe and so be a better candidate for an insulin pen instead. During reassessment, a nurse can discover unmet needs and adjust the education being given to meet those needs.

Revision of Patient Goals

There are many reasons why patients' healthcare goals change. Considering the patient's physical and emotional status, the nurse assesses, intervenes, and evaluates continuously while providing patient care. Awareness of changes allows the nurse to understand factors that influence learning. For example, if a patient is anxious or in pain or physiologically compromised, then their mental state is not optimal for taking in new information.

Patient goals can also change based on external factors, such as ambient temperature or environmental distractions. Creating an environment free of distraction to facilitate learning can help set the patient and family up for success with learning. It is important for the nurse to recognize and accommodate changes in the patient's goals and work with the patient to produce goals that meet the needs of the patient, family, and care team. Learning goals and techniques may be affected by a teaching technique that was expected to be successful but was ultimately ineffective for the patient.

Revision of Teaching Methods

If the patient's goals have not changed but a teaching session was determined to be unsuccessful, it may be worth exploring a revision of the teaching method. Perhaps during assessment of the patient's needs, the patient shared a preference for verbal delivery of information "because I learn best by listening." However, in asking the patient for verbalization of understanding after an explanation of a new medication, it was discovered that much of the information was misunderstood, including the drug's classification, the dose prescribed, and what time of day it should be taken. Through further reassessment, and with additional input from the patient's adult child, the nurse may determine that a combination of verbal information with written information would be more effective. The nurse may revise the teaching method and use a whiteboard and markers, writing the name of the drug, what type of drug it is, the dose, and a drawing of a clock face with the time to take it to offer the patient multiple ways to learn the information.

Summary

17.1 Informed Decision Making and Self-Care

Informed decision-making and self-care have been the focus of this section exploring aspects of patient and family education. The four purposes of health education were identified as health promotion, disease prevention, function restoration, and facilitation of coping and adjustments to health challenges and changes (the "new normal"). Health maintenance and promotion include considerations for an overall more actively involved population of healthcare consumers who have more interest in health promotion and illness prevention. Nurses play a role in promoting adherence to and compliance with health promotion and illness prevention even for patients who are not as invested in their healthcare decisions and actions.

Factors such as health literacy, feelings, and anxiety, and physical influences like pain or limitations influence patients' adherence to and compliance with treatment and nursing care plans. For those patients whose lives are chronically, drastically, or permanently altered due to illness, injury, or health changes, education by nurses focuses on fostering the best possible outcomes and supporting patients and their families as they learn to cope with changes. Another consideration is motivation, which affects participation in healthcare decisions and potentially all aspects of health care and self-care, including commitment and enthusiasm for learning.

Preventing injuries and illness is another aspect of self-care and health maintenance, and can be influenced by knowledge, skills, and attitudes, as well as other factors, including readiness for learning, learning capabilities, and the environment for learning. These issues all take on a different tone in the specific and often overwhelming world of health care. Nurses engaged in patient teaching should consider these factors and plan teaching accordingly, based on relevance to individual learners.

17.2 Methods and Approaches to Learning and Teaching

Methods of learning and teaching are critical considerations when planning and implementing patient and family education. There are three learning methods: (1) cognitive, or learning associated with thinking and understanding; (2) affective learning, or that which is associated with feelings and emotions; and (3) psychomotor learning, which involves the neuromuscular coordination of skills and tasks.

Educators are most effective when different methods of learning and other factors are included. Some of these additional factors include dynamics of the teaching session, such as whether the audience is an individual or a group of learners. It is also helpful for the teacher to be aware, in advance, of setting, materials, and resources like audio-visual equipment. The nurse can be better prepared by knowing as much as possible in advance. Such preparation also allows the educator to individualize the teaching method for the particular audience.

Nurses use a variety of teaching methods, depending on factors like volume and type of information to be delivered, whether the topic includes skill practice and acquisition, setting, and patient preferences. Lecture remains a good method for sharing a lot of information but is more effective when combined with handouts for reference. Demonstration and simulation tend to be better remembered after practice, because they incorporate multiple learning methods.

17.3 The Nurse's Role in Patient and Family Education

Education of patients, families, and communities has a natural role within nursing and is based on the relationships nurses establish with patients and others involved in their care. The relationship between the provision of education and nursing standards is exemplified by Standard 5B, Health Teaching and Health Promotion. Additionally, nurses play an integral role in advocacy, which has been explored in this chapter.

Nurses are trusted professionals, and they fulfill many roles in addition to that of caregiver. Nursing's Scope and Standards of Practice (ANA, 2021) describes all aspects of nursing practice ("who, what, where, when, and how"), as well as Standards of Professional Practice, which is focused on competency in the practice of the professional nurse. Such practice includes that of the RN and advance practice roles. Additionally, the Standards of Professional Performance center on competency in professional roles, particularly leadership.

Nurses take on the roles of teachers, counselors, and evaluators. How nurses fulfill the obligations of the varied roles of the profession has been explored and exemplified. A variety of skills enables nurses to effectively educate

patients and their families in a multitude of settings. Such skills include being approachable, knowledgeable, flexible, dependable, and effective communicators.

17.4 Evaluation of Teaching and Learning

Evaluation, analysis, and interpretation of educational interactions are necessary steps after a teaching session. These processes allow the educator to determine whether learning has occurred, whether the educational interventions were successful, and whether goals have been met.

Evaluation methods, including direct observation, return demonstration, verbalization of understanding, and the checklist, have been described in this final section of the chapter. These methods allow for the objective, structured evaluation of teaching and learning, as well as ways to document the accomplishment or lapse.

Following the evaluation process, analysis and interpretation of the evaluation data are indicated. The findings may prompt reassessment of the patient's educational needs. Depending on assessment findings, revising either the patient's goals or the method used for teaching may be indicated. It can also be possible that both the patient's goals and teaching method need revising. These varied processes and possibilities have been explored and examples provided throughout this chapter.

Key Terms

activities of daily living (ADLs) skills required to perform essential and routine tasks independently for oneself (e.g., bathing, toileting) without assistance
affective learning the learning process centered on feelings, including attitudes, interests, and values
approachability easy to talk to or interact with
coercion persuasion through intimidation
cognition the process of knowing, perceiving, thinking, or understanding
cognitive learning learning based on the process of understanding
consent to agree to and permit (something)
dependability reliable or trusted
direct instruction active engagement of the educator and learners
direct observation of actions evaluation method of observing the learner in the normal setting for actions and behaviors illustrating learning acquisition
direct observation of procedural skills evaluation of step-by-step psychomotor tasks
extrinsic motivation a willingness to participate in self-care activities when offered a reward
health literacy the ability of an individual to locate, comprehend, and use health-related material and make healthcare decisions
health promotion improving health
illiterate an inability to either read or write
intrinsic motivation a drive toward achieving personal pleasure or fulfillment
learning style preferred method of learning: auditory, visual, written, or kinesthetic
literacy the ability to read and write
mammography radiographic examination of breasts
metacognition an elevated level of thinking that allows comprehension and examination; higher-order thinking that enables understanding, analysis, and command of thoughts and the thinking process
psychomotor learning the development of organized patterns of muscular activities guided by signals from the environment
return demonstration evaluation method whereby the patient showcases the ability to complete the task by performing it back to the evaluator
skill acquisition acquiring a new skill with precision

Assessments

Review Questions

1. A patient is scheduled for surgery, and informed consent is to be obtained. The student nurse is aware of what action as a potential responsibility of the RN?

a. Describe the procedure in detail.
b. Review the risks of the procedure.
c. Witness the patient's signature.
d. Explain alternatives to the surgery.

2. The concept of health literacy is represented by what description?
a. find, understand, and use medical information
b. an ability to understand a teaching pamphlet
c. superior skill accessing internet websites
d. advanced university education and degrees

3. What is not associated with a patient's readiness to learn?
a. post-therapy fatigue
b. education level
c. extreme pain
d. increasing anxiety

4. A patient is scheduled for surgery to start in 30 minutes. After the surgeon met with the patient, obtained informed consent, and left for the operating room, the patient tells the nurse, "I don't think I want to have this surgery. It's so risky, and I still have many questions." How should the nurse respond?
a. "It's too late now, you've signed the consent form."
b. "It will be fine; the doctor has done many of these."
c. "Let me call the doctor to address your concerns."
d. "I'll call the operating room to cancel the surgery."

5. A patient has scheduled to talk to the nurse practitioner about increasing inability to plan and prepare meals. The nurse distinguishes this as a component of which of the Seven Pillars of Self-Care?
a. physical activity
b. good hygiene
c. healthy eating
d. risk avoidance or mitigation

6. In anticipation of teaching a large group of learners, a nurse prepares by analyzing journal articles about higher stages of thoughts and thinking. What term distinguishes this concept?
a. cognitive
b. affective
c. metacognitive
d. psychomotor

7. A nurse has taught a patient's family how to perform tracheostomy suction and daily care. After several practice sessions, the nurse provides a critique. What level of Bloom's Revised Taxonomy does this represent?
a. creation
b. analysis
c. evaluation
d. application

8. A patient who has had heart failure for a year tells the nurse he tires quickly, and he asks for ways to improve his heart function so he can do more. The nurse establishes what behavior as representing which affective subdomain?
a. receiving
b. responding
c. valuing

d. characterizing

9. A nurse is teaching a patient who rides a motorcycle about the benefits of wearing a helmet when riding. Such education represents which directive of professional nursing practice?
   a. ANA's Social Policy Statement
   b. NCSBN's NCLEX-RN exam
   c. ANA's Scope and Standards of Practice
   d. the state's Nurse Practice Act

10. A nurse is guiding a patient's spouse to assistance available for access to food. This illustrates what nursing role?
   a. counselor
   b. teacher
   c. evaluator
   d. observer

11. A nurse who smiles during interactions with patients and families demonstrates what skill that aids effective teaching?
   a. knowledgeable
   b. dependable
   c. flexible
   d. approachable

12. A nurse notifies the hospitalist about a patient's treatment wishes. What ANA Standard of Professional Practice does this exemplify?
   a. Standard 1: Assessment
   b. Standard 5B: Health Teaching and Health Promotion
   c. Standard 8: Advocacy
   d. Standard 9: Respectful and Equitable Practice

13. A patient has been taught how to use an automated blood pressure cuff and to keep a daily diary. Later in the day, the nurse observes the patient showing a grandchild how to use the device. This is an example of what evaluation method?
   a. verbalization of understanding
   b. return demonstration of skill
   c. direct observation of action
   d. completion of checklist

14. A patient has been taught about the pathophysiology related to a new diagnosis. What method will be most effective to determine effectiveness of the teaching?
   a. checklist
   b. direct observation
   c. verbalization
   d. return demonstration

15. A nurse determines a patient does not understand the use of a glucometer after teaching. To determine next steps, what action should the nurse take?
   a. Reevaluate the patient's glucometer use.
   b. Ask the patient to describe the use of the glucometer.
   c. Make changes to the checklist so it is shorter.
   d. Reassess the patient's learning needs.

16. After teaching a patient how to use an insulin pen, the nurse asks the patient to show the steps and describe

what is being done. What evaluation method is the nurse using?

a. verbalization of understanding
b. direct observation of actions
c. return demonstration of skills
d. checklist

17. The nurse determines that a patient did not understand teaching about a new medication. What action should the nurse take?

a. Work with the patient to define new goals.
b. Consider a different teaching method.
c. Ask if the patient has questions about the medication.
d. Document that education was provided.

18. Evaluation of education provides the nurse educator with what piece of important information?

a. whether the identified problem has been resolved
b. information about the patient's learning preference
c. critical planning information based on diagnosis
d. necessary background about teaching methodology

Check Your Understanding Questions

1. Describe three ways self-care can affect health promotion and/or illness prevention.

2. Explain at least two benefits of teaching a group of learners.

3. Describe the difference between direct and indirect teaching methods. Include at least two examples of each.

4. Describe the relationship between patient and family education and professional nursing practice.

5. Explain how a checklist can be used as an independent evaluation method.

Reflection Questions

1. Think about a patient who is struggling with a newly prescribed low-fat, low-salt diet. How can you present the information using different learning styles to improve adherence and compliance?

2. Reflect on affective development you have undergone as you have prepared for and begun nursing school. List at least three methods you plan to use to inspire affective growth and learning in your patients.

3. Reflect on topics and concepts you have learned about during prenursing courses and current courses. Compare with methods of evaluation in this chapter. Which methods have been used to evaluate your learning?

4. Reflect on and compare the evaluation process in providing patient care and in patient and family education.

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study 3: Part 3.
What factors may affect the patient's compliance with and adherence to the treatment plan at home?

2. Refer to Unfolding Case Study 3: Part 4.
Do you think group teaching is appropriate for this family? Why or why not?

3. Refer to Unfolding Case Study 3: Part 5.
How could the nurse use a checklist to help the daughters learn to care for their mother?

What Should the Nurse Do?

A patient's type 2 DM has advanced to require insulin injections.

1. What teaching method should the nurse use to meet the patient's initial cognitive learning needs?
2. The patient has never held a syringe. What cognitive domain should the nurse address to teach the patient to

give an injection?

3. The nurse brings the patient lunch, and the patient asks, "Why do I need to have my blood sugar checked again? My sugars were improving." What should the nurse do to foster effective learning?

Competency-Based Assessments

1. A nurse with the Indian Health Service has noticed several community members who were diagnosed with hypertension have not been making or keeping follow-up appointments. The nurse decides to reach out to this patient population with a series of educational videos. Use of which method in the videos is likely to improve self-care and treatment compliance?
    a. Use standard hypertension handouts written at 10th grade level.
    b. Include popular celebrity actors in the video.
    c. Integrate local tribal language(s) into the video's narration.
    d. Introduce medical jargon as colloquialisms in the video.

2. The nurse preceptor notices the new graduate does not make eye contact and mumbles while explaining drug side effects to a patient. The nurse will discuss a lapse in which effective teaching skill with the new graduate?
    a. dependability
    b. knowledgeability
    c. approachability
    d. communication

3. A patient has had toenail removed in an outpatient surgery setting. There was local anesthetic, and the gauze dressing is clean, dry, and intact. Choose items from the following checklist to include in a teaching plan for the patient.
    - sedation
    - when to make routine appointment
    - incision care
    - go to the emergency department for:
    - type of surgical procedure
    - pain control
    - type of anesthesia used
    - upcoming procedures
    - reasons to call the surgeon
    - new prescriptions
    - length of inpatient stay

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CHAPTER 18
Leadership and Management in Nursing

FIGURE 18.1 Nurse leaders and managers play an influential role in achieving positive patient care outcomes. (credit: "Army Reserve surgical nurse answers call to assist in Philadelphia" by Spc. Joshua Cowden/Army Reserve, Public Domain)

CHAPTER OUTLINE

18.1 Concepts of Leadership in Nursing
18.2 Concepts of Management in Nursing
18.3 Implementing Leadership and Management into Nursing Practice
18.4 Certifications for Nurse Leaders and Managers

INTRODUCTION Imagine stepping into a role where decisions impact not only patient outcomes but also the growth and morale of your team. Leadership and management in nursing go beyond clinical expertise; they encompass inspiring your team through challenges, innovating care practices, and navigating the complexities of modern health care. This chapter delves into the essence of nursing leadership and management, preparing you to lead with confidence and compassion.

Nurse leaders and managers play a pivotal role in shaping healthcare environments that thrive on teamwork, diversity, and effective communication. It is important to discover strategies to foster a culture of collaboration, in which every team member feels valued and empowered to contribute their best. Through this journey, we aim to equip you with the knowledge and skills needed to transform healthcare settings, enhance patient care, and lead with purpose and integrity.

18.1 Concepts of Leadership in Nursing

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the attributes of effective leadership in nursing
- Recognize different leadership styles in nursing
- Describe the goals of nurse leaders

Leadership is a concept that transcends a simple definition, as it embodies a range of behaviors, styles, and qualities that vary greatly across different contexts. At its core, **leadership** involves guiding, influencing, and motivating followers, whether individuals or groups, toward achieving a common goal. It is not merely about holding a position of authority or power; rather, it is about the ability to inspire and drive positive change. Leadership is characterized by vision, decision-making, empathy, and the capacity to foster an environment of growth and innovation. Importantly, effective leadership is not about commanding or controlling but rather empowering and enabling others. Good leadership is vital in any field as it sets the tone and direction of the organization or team, shapes organizational culture and values, and facilitates the achievement of overarching objectives (American Association of Colleges of Nursing, 2024).

In health care, and nursing in particular, leadership takes on a nuanced and critical role. In this setting, leadership is not only about managing resources and coordinating tasks; it is deeply intertwined with the welfare and outcomes of patients. Leadership in health care is about advocating for patient safety, quality care, and ethical practices. It involves navigating the complexities of healthcare systems, policies, and technologies while ensuring that compassionate and competent care remains at the forefront. In nursing, leadership extends beyond the administrative roles to include clinical leadership at the bedside. Nurse leaders play a crucial role in mentoring and supporting other nurses, contributing to professional development, and leading by example in delivering patient-centered care. The impact of leadership in nursing is profound, as it directly influences patient experiences, team dynamics, and the overall effectiveness of healthcare services. Nurse leaders are therefore tasked with a significant responsibility: to uphold the standards of their profession and to continuously strive for excellence in all facets of patient care and team management.

Leadership Attributes

The American Nursing Association (ANA) identifies eighteen standards of nursing practice; leadership is standard 12 (ANA, 2021). Nurse leaders embody a wide range of attributes and utilize many different competencies to guide, influence, and inspire. The ANA organizes these competencies into three distinct abilities: leading oneself, leading others, and leading the organization (Table 18.1) (ANA, 2018).

Leading Oneself	Leading Others	Leading the Organization
Adaptability	Communication	Business acumen
Image	Conflict	Change
Initiative	Diversity	Decision-making
Integrity	Employee development	Influence
Learning capacity	Relationships	Problem-solving
Self-awareness	Trust	Systems thinking
Responsibility	Respect	Vision and strategy
Accountability	Mentorship	Project management

TABLE 18.1 Competencies for Nurse Leaders

LINK TO LEARNING

More about the ANA's competency model for leadership (https://openstax.org/r/77ANACcomp) is presented at the ANA website.

Commitment to Excellence

In nursing, a commitment to excellence is the relentless pursuit of the highest standards in patient care and professional practice. Nurse leaders with this attribute are unafraid of change and embrace it to improve the quality of care, seeking to implement best practices and refusing to be satisfied with the status quo. They lead by example, demonstrating a strong work ethic and a dedication to continuous learning and improvement, and they inspire the same dedication in their colleagues. A nurse leader might initiate and lead quality improvement projects, advocate for evidence-based practices, or mentor others to enhance their skills and knowledge. This commitment is crucial not just in direct patient care where it translates into better patient outcomes but also in organizational contexts where it fosters a culture of excellence among colleagues and sets high standards for the entire healthcare team.

Commitment to Profession

Commitment to the profession in nursing goes beyond performing the duties of the job; it is about a deep-rooted dedication to the nursing field and its advancement. Nurse leaders with a strong commitment to their profession are actively involved in professional organizations, stay abreast of current trends and research in health care, and advocate for the rights and interests of nurses and patients. Leaders think systemically, which means thinking not only about how decisions may affect their own career or their own patients' health, but also the well-being of their organization or even the broader healthcare industry. Leaders may be involved in policy-making, participate in professional conferences, or contribute to nursing education. Their influence often extends to community outreach and public health initiatives, where they represent the nursing profession's values and contribute to broader health and wellness objectives.

Problem-Solving Skills

Effective problem-solving skills are vital for nurse leaders, as they often face complex challenges that require innovative and practical solutions. This involves critical thinking and the ability to analyze situations from multiple perspectives and make informed decisions. A nurse leader with strong problem-solving skills can more efficiently address staffing challenges, resolve conflicts among team members, or develop strategies to improve patient care processes. For example, in response to high patient readmission rates, a nurse leader might analyze the contributing factors and implement targeted interventions to address these issues, demonstrating a proactive and solution-oriented approach.

REAL RN STORIES

Overcoming Staffing Challenges: A Nurse Leader's Approach

Nurse: Aisha, RN, Charge Nurse
Clinical setting: Emergency department
Years in practice: 12
Facility location: Atlanta, Georgia

One evening in our busy emergency department, we faced an unexpected staffing shortage. Two nurses had called in sick, significantly reducing our capacity to manage the usual patient influx. As the nurse manager on duty, I knew immediate problem-solving was essential to maintain patient care standards.

First, I assessed our current resources and patient load. I reassigned roles based on skill set and urgency, ensuring that critical areas were adequately staffed. I also facilitated a quick team meeting, communicating the situation and encouraging a team-based approach to manage the shift effectively.

Realizing the importance of maintaining morale and efficiency, I stepped into a more hands-on role to assist where needed most, setting an example and keeping the team motivated. I also coordinated with other departments to

manage patient flow, facilitating smooth transitions for patients who needed to be admitted.

Despite the initial challenges, our team managed to provide quality care throughout the shift. This experience reinforced the importance of quick thinking, flexibility, and effective communication in managing unexpected situations. It was a testament to the team's resilience and commitment, and it underscored the critical role of nurse leaders in navigating the complexities of healthcare environments.

Trustworthiness and Integrity

Trustworthiness and integrity are foundational attributes for nurse leaders. These qualities mean adhering to ethical principles, being honest, and maintaining a strong moral compass. Nurse leaders with these attributes earn the respect and trust of their colleagues, patients, and the broader community. They set a standard for ethical practice and create a culture of honesty within their teams. For example, a nurse leader might face a situation where an error has occurred in patient care. Demonstrating integrity, they would ensure the mistake is acknowledged, reported, and addressed transparently, prioritizing patient safety and learning from the incident. This approach not only fosters trust among team members but also strengthens patient trust in the healthcare system.

Accessibility

Accessibility refers to nurse leaders who are approachable and available to colleagues, patients, and other stakeholders. Accessible leaders create environments in which team members feel comfortable seeking guidance, sharing ideas, or voicing concerns. This quality is crucial for collaborative teamwork and effective communication. For instance, a nurse leader could establish regular open-door hours for staff to discuss professional challenges or patient care issues. By making themselves accessible, nurse leaders can better support their teams, facilitate problem-solving, resolve conflicts, and ensure that patient care needs are met efficiently and compassionately.

Creativity

Creativity in nursing leadership involves the ability to think outside the box and develop innovative solutions to complex healthcare challenges. Nurse leaders who exhibit creativity are adept at adapting to changing circumstances, finding new ways to improve patient care, and leading their teams through uncertain or difficult situations. For example, in response to resource limitations, a creative nurse leader might develop a novel approach to patient care that maximizes existing resources while maintaining high care standards. Similarly, they might lead the implementation of new technologies or approaches to care that enhance patient outcomes and operational efficiency. By fostering a culture of innovation, nurse leaders encourage continuous learning and improvement within their teams while supporting shared governance.

Leadership Styles

Leadership styles in nursing play a crucial role in shaping the dynamics of healthcare teams and the quality of patient care. Each style comes with its unique approach to decision-making, team interaction, and problem-solving. The choice of a leadership style can significantly affect the work environment, staff morale, and overall effectiveness of care delivery. While some leaders may naturally gravitate toward a particular style, effective nurse leaders often adapt their approach based on the situation, team needs, and specific goals. Understanding and utilizing various leadership styles allows nurse leaders to effectively guide their teams through the diverse and complex situations encountered in healthcare settings (Table 18.2) (ANA, 2024).

Style	Pros	Cons	Effectiveness
Autocratic	• Quick decision-making • Clear chain of command • Clear direction	• Can stifle creativity and innovation • Can negatively affect morale • Promotes dependency on leader	• Can be efficient and effective in a crisis or when needs are urgent • Less effective for collaborative, creative projects
Democratic	• Staff engagement • Encourages diverse input	• Time consuming • Conflicts and disagreement can arise	• Works well when consensus is the goal • Can be used for projects that would benefit from multiple perspectives • Less likely to be effective or practical in emergencies or with inexperienced teams
Laissez-faire	• Autonomy for highly skilled and self-motivated teams	• Can lack a sense of direction • Can lack accountability	• Can work well in creative environments with minimal supervision needs • Less likely to work in teams that need oversight or guidance
Transformational	• Inspiring • Promotes teamwork • Builds a sense of shared vision	• Can be too optimistic • Goals can be “too big” or unrealistic/unachievable	• Can be helpful for organizations ready for change • Less likely to benefit crisis situations or inexperienced teams
Transactional	• Clear rewards and consequences • Efficient	• Can dampen initiative • Does not encourage long-term growth	• Can work well for short-term needs with clear goals or strict compliance requirements • Less likely to help when creativity, innovation, and problem-solving are required

TABLE 18.2 Leadership Styles

Style	Pros	Cons	Effectiveness
Servant	• Fostering a culture of care, empathy, and community • Can lead to high levels of team satisfaction and patient trust	• It requires a strong sense of selflessness and a commitment to others from the leader	• Can work well for less-structured environments where teams innovate together • Less likely to work well where strict protocols, timeliness, and accuracy are required
Quantum	• Focused more on the individual and value-based decisions • Fosters growth and adaptability	• Can be too theoretical • Hard to measure effectiveness	• Can help when change needs to be made and there is a lot of uncertainty, especially when ethical standards are high • Less likely to work in situations that need a clear structure or process

TABLE 18.2 Leadership Styles

Autocratic Leadership

Also known as authoritarian leadership, **autocratic leadership** is characterized by individual control over decisions with little input from team members. In nursing, this style can be effective in critical situations where quick and decisive action is needed, such as during a medical emergency in an intensive care unit. For example, an autocratic nurse leader might make rapid decisions about patient care during a code blue situation, directing team members clearly and authoritatively to ensure immediate and coordinated action. However, this leadership style can be less effective in noncrisis situations, as it may limit team input and reduce morale. It is important for nurse leaders employing this style to be aware of these limitations and balance authority with team engagement in everyday situations.

Democratic Leadership

In contrast to authoritative leadership, **democratic leadership** (or participative leadership), involves a more collaborative approach. This style values the input of team members and stakeholders in the decision-making process. In a nursing context, a democratic leader might facilitate team meetings to discuss patient care plans, encouraging input from all members of the healthcare team, including nurses, doctors, and support staff. For instance, when implementing a new patient care protocol on a unit, a democratic nurse leader might gather feedback from the nursing staff, discuss potential challenges, and collaboratively develop an implementation strategy. This approach can lead to higher job satisfaction and a sense of ownership among team members, but it may also require more time to reach decisions compared to more directive styles.

Laissez-Faire Leadership

Often referred to as a "hands-off" style, **laissez-faire leadership** is characterized by a high level of autonomy granted to team members. In this approach, the leader provides minimal direction and allows staff to make decisions, solve problems, and manage their work independently. (The French phrase *laissez-faire* translates to "allow to do.") In a nursing context, a laissez-faire leader might empower experienced nurses to lead their own patient care initiatives or research projects within the healthcare setting. For example, in a situation where a nursing team is tasked with developing a new patient education program, a laissez-faire nurse leader might provide the initial goal and necessary resources but leave the planning, design, and implementation to the team. This leadership style can be highly effective in fostering innovation and professional growth, particularly with experienced and self-

motivated team members. However, it may lead to a lack of direction or oversight in less-experienced teams, potentially impacting patient care and team cohesion.

Servant Leadership

In nursing, **servant leadership** is an approach where the leader prioritizes the needs and wishes of team members above their own. This style focuses on empowering and uplifting others, fostering a culture of care, empathy, and community. A servant leader in nursing actively works to identify and meet the needs of their team members, supporting them in delivering the best possible patient care. For instance, a nurse leader practicing servant leadership might focus on staff development by providing opportunities for further education, mentorship, and career advancement. They likely also advocate for patient rights, ensuring that patient needs and preferences are at the forefront of care decisions. An example of servant leadership could be a nurse manager who collaborates with the staff to redesign shift schedules to better balance workload and reduce burnout, thereby enhancing team well-being and patient care. Servant leadership can lead to high levels of team satisfaction and patient trust, but it requires a strong sense of selflessness and a commitment to the growth and well-being of others.

Quantum Leadership

A contemporary approach, **quantum leadership** views organizations and their environments as interconnected and constantly evolving. This style is characterized by adaptability, flexibility, and a focus on fostering innovation in response to rapidly changing healthcare landscapes. Quantum leaders in nursing are known for their ability to anticipate changes in health care, such as technological advancements or shifts in patient care models, and adapt their strategies accordingly. For example, a quantum nurse leader might lead the integration of telehealth technologies into traditional care practices, embracing new methods to enhance patient access to healthcare services. This leadership style requires a high degree of vision and the ability to thrive in uncertain or complex situations. It is particularly effective in environments where change is constant, and innovation is necessary for progress (Harrington, 2023). However, since it is a more adaptable process that can change, it may not be helpful in situations that would benefit from a clear, consistent structure or process.

Transactional Leadership

In nursing, **transactional leadership** is based on a system of rewards and penalties and is focused on maintaining the routine flow of operations. This leadership style is characterized by clear structures and rules, where performance is closely monitored, and feedback is provided in the form of rewards for meeting objectives or corrective actions for failing to meet them. For instance, a transactional nurse leader might implement a reward system for staff who consistently adhere to hand hygiene protocols, thereby promoting patient safety standards. While this approach can be effective in achieving specific short-term goals or in maintaining established protocols, it may not be as effective in environments that require ongoing innovation or high levels of staff motivation and morale; more-experienced staff may chafe and interpret the strictures as a lack of trust in their abilities.

Transformational Leadership

A style that inspires and motivates team members to exceed their own expectations and capabilities is known as **transformational leadership** and often leads to profound changes in both individual performance and organizational outcomes. In nursing, transformational leaders empower their teams, encourage professional development, and foster a shared vision for exceptional patient care. For example, a transformational nurse leader might inspire the team to adopt a more patient-centric approach to care, leading to improved patient satisfaction and outcomes. They achieve this by modeling the desired behaviors, challenging traditional approaches, and encouraging creative thinking. If successfully implemented, this leadership style is effective in driving significant changes, fostering team development, and creating a strong sense of purpose and commitment within the team. This leadership style places significant reliance on the leader, increasing the risk of burnout, especially if there is a strong resistance toward change from staff members.

Goals of Nurse Leaders

The overarching goals of nurse leaders extend beyond the management of day-to-day operations. They involve shaping the future of nursing practice and healthcare delivery through strategic planning, team development, and quality improvement. Nurse leaders aim to create a positive impact on patient outcomes, staff well-being, and organizational efficiency. Their objectives are multifaceted and include fostering a supportive work culture, ensuring high standards of patient care, and leading initiatives that adapt to the evolving healthcare landscape. Often, the

nurse leader must be a role model, exemplifying the behavior they want to normalize. These goals require a blend of strategic vision and empathy and a commitment to excellence in both clinical and administrative aspects of nursing (Morganelli, 2021).

Culture Development

One of the primary goals of nurse leaders is the development of a positive and productive workplace culture. Culture in a healthcare setting encompasses the values, beliefs, and behaviors that characterize how work is done and how staff members interact with each other and with patients. A positive culture is crucial for effective teamwork, staff retention, and high-quality patient care. Nurse leaders play a key role in shaping this culture through their actions, communication, and policies. For example, they might promote a culture of open communication, where staff members feel comfortable sharing ideas and concerns, or they might emphasize a patient-centered approach in all aspects of care. By actively working to create and maintain a healthy workplace culture, nurse leaders can improve job satisfaction, reduce burnout, and enhance the overall performance of their teams.

Employee Satisfaction

Developing a positive workplace culture directly supports the overall goal of achieving and maintaining high levels of employee satisfaction. Satisfied employees are more engaged, motivated, and committed to providing quality patient care (Goula et al., 2022). Nurse leaders contribute to employee satisfaction by recognizing and addressing the needs and concerns of their staff. This can include offering opportunities for professional development, ensuring fair and adequate staffing levels, and providing support for work-life balance. For example, a nurse leader might implement regular staff meetings or employee satisfaction surveys to address concerns and gather feedback, or they might advocate for resources that support staff well-being, such as access to mental health services. By prioritizing employee satisfaction, nurse leaders not only enhance the morale and retention of their staff but also indirectly impact the quality of care provided to patients.

Create and Develop New Leaders

A critical goal for nurse leaders is to identify and nurture potential leadership within their teams. The development of new leaders ensures the sustainability and growth of nursing as a profession and fosters a culture of continuous improvement and innovation in healthcare settings. Nurse leaders can achieve this by mentoring and coaching staff, providing opportunities for professional growth, and encouraging the pursuit of advanced education and leadership roles. For instance, a nurse leader might establish a mentorship program within their department, pairing experienced nurses with those showing leadership potential, providing guidance on career development, and offering support in skill enhancement. By investing in the development of new leaders, nurse leaders contribute not only to the individual growth of their staff but also to the advancement and resilience of the nursing profession as a whole.

REAL RN STORIES

Mentoring Tomorrow's Leaders Today

Nurse: Sandra, MSN, RN
Clinical setting: Acute care hospital
Years in practice: 15
Facility location: Portland, Oregon

Throughout my career, I've been passionate about nurturing the growth of future nurse leaders. I believe that part of being a successful nurse leader is the ability to recognize and cultivate leadership potential in others. One of my most rewarding experiences was with a young nurse, Emilio, who joined our team as a new graduate.

Emilio demonstrated a natural inclination for leadership early on. He was proactive, keen to learn, and always willing to go the extra mile for patients and colleagues. Recognizing his potential, I took him under my wing, offering mentorship and opportunities for professional development. We worked on enhancing his communication skills, understanding the nuances of team management, and developing strategies for effective problem-solving.

I encouraged Emilio to lead a project aimed at improving patient education on medication management, a task that involved coordinating with different departments and presenting the project outcomes to hospital leadership.

Through this experience, he honed his leadership skills, gaining confidence and visibility within the organization.

Today, Emilio is a charge nurse and a rising leader in our hospital. He's actively involved in various committees and is a mentor to other young nurses. Seeing his growth and the positive impact he has on the team reaffirms my belief in the power of mentorship and the importance of investing in future leaders. As nurse leaders, we have the privilege and responsibility to guide the next generation, ensuring the continued excellence and evolution of our profession.

Align Behaviors with Facility Values

Aligning staff behaviors with the values of the healthcare facility is another key goal of nurse leaders. This alignment ensures that the team's actions and decisions are consistent with the broader mission and ethical standards of the organization. Nurse leaders can foster this alignment through clearly communicating expectations, role modeling the desired behaviors, and implementing policies and practices that reflect these values. For example, if a facility prioritizes patient-centered care, a nurse leader might implement training sessions that focus on empathy and effective communication skills, ensuring that all team members are equipped to engage with patients in a manner that aligns with this core value. Aligning behaviors with facility values not only enhances team cohesion and efficiency but also contributes to a consistent and high-quality patient experience.

Communication Liaison

A critical goal for nurse leaders is to serve as an effective communication liaison between various stakeholders in the healthcare environment. This role involves facilitating clear and consistent communication among the healthcare team, patients, and their families, as well as between the nursing staff and higher-level administration. As communication liaisons, nurse leaders ensure that information is accurately conveyed and understood by all parties, which is crucial for coordinated care and decision-making.

For instance, in situations where new policies or procedures are introduced in a healthcare facility, nurse leaders play a key role in explaining these changes to the nursing staff and ensuring their understanding and compliance. They also gather feedback and concerns from the staff and communicate these effectively to the administration, advocating on behalf of both the nursing team and the patients. Nurse leaders also act as intermediaries for patients, ensuring that members of the care team answer the patient's and family's questions, address their concerns, and keep them informed of care plans and progress. This communication is vital for patient satisfaction and for building trust between the patient and the healthcare team.

18.2 Concepts of Management in Nursing

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the attributes needed for nursing management
- Describe different management structures
- Identify how to implement and manage change as a nurse manager
- Explain management functions in nursing

In nursing, the concepts of leadership and management are both pivotal yet distinct elements that drive the success and efficiency of healthcare delivery. Leadership, as explored in the previous module, is the practice of guiding, influencing, and motivating individuals or groups toward achieving a common goal. It is about setting a vision, inspiring nurses to strive for excellence, and fostering an environment where each team member can thrive and contribute to patient care and organizational objectives. Leadership focuses on the "why" and "what" of work, emphasizing direction, inspiration, and the broader picture of healthcare outcomes.

Contrastingly, **management** in nursing takes a more structured approach to achieving healthcare goals. It involves the practice of determining what tasks need to be completed to accomplish a particular goal and ensuring all team members complete those tasks effectively and efficiently. Management is concerned with the "how" of work, focusing on planning, organizing, coordinating, directing, and controlling (Greenhalgh, 2023). It ensures that the resources are appropriately allocated, the nursing staff is adequately supported, and the operational aspects of patient care are conducted within established guidelines and standards. While leadership seeks to motivate and engage—often in the service of transformational change—management aims to establish order and consistency through predictable processes and systems (Gavin, 2019).

Understanding the distinction between leadership and management is crucial for nursing professionals. While a nurse leader might inspire their team to adopt new patient care innovations, a nurse manager ensures that the day-to-day operations support these innovations. Both roles are essential in a healthcare setting and require a keen understanding of how to get the best out of a team. Often, effective nurse managers embody qualities of both leaders and managers, blending inspiration with organization to meet the complex demands of modern health care.

Management Attributes

In nursing management, certain attributes stand out as essential for ensuring that a healthcare team operates smoothly and effectively (Table 18.3). These attributes not only facilitate the accomplishment of tasks and goals but also contribute to a positive and productive work environment. Effective nurse managers possess a blend of skills that enable them to address the multifaceted challenges of healthcare management. Among these, conflict resolution and employee engagement skills are particularly vital, impacting everything from team cohesion to patient care quality.

Skill	Key Points
Conflict resolution skills	• Identifying root causes of conflict • Facilitating open communication • Negotiating mutually agreeable solutions • Mediating a dispute over patient care priorities
Employee engagement skills	• Providing clear communication • Recognizing and valuing contributions • Offering professional development opportunities • Creating an inclusive environment • Implementing feedback sessions, celebrating team wins, involving staff in decision-making
Mentoring skills	• Guiding and supporting less-experienced nurses • Identifying strengths and growth areas • Offering personalized advice and feedback • Facilitating shadowing, workshops, and coaching
Decision-making skills	• Analyzing information • Weighing risks and benefits • Making choices in support of patient care, staff, and the organization • Reallocating staff or resources during a patient influx
Technical skills	• Proving proficiency with healthcare technology (electronic health records, medical devices) • Demonstrating clinical assessment skills • Possessing time management, organizational, and communication skills • Troubleshooting technology, guiding staff in new procedures, managing schedules, and facilitating clear communication

TABLE 18.3 Nursing Management Attributes

Conflict Resolution Skills

Conflict resolution skills are crucial in nursing management due to the high-stress, fast-paced nature of healthcare settings. Conflicts may arise from a variety of sources, including interpersonal disagreements, workload disparities, or differing opinions on patient care. Effective conflict resolution involves identifying the root cause of a dispute, facilitating open communication between the parties involved, and negotiating a solution that is acceptable to all.

For example, if two nurses disagree over patient care priorities, a nurse manager with strong conflict resolution skills might arrange a meeting to discuss each nurse's perspective and mediate a consensus that aligns with the patient's best interest and team capabilities. This not only resolves the immediate issue but also models constructive communication and problem-solving techniques for the team, fostering a culture of collaboration and mutual respect.

REAL RN STORIES

Harmony in Diversity: A Story of Conflict Resolution

Nurse: Priya, BSN, RN, Nurse Manager
Clinical setting: Multicultural community health center
Years in practice: 8
Facility location: Minneapolis, Minnesota

Working in a multicultural clinic in Minneapolis has taught me the invaluable lesson of navigating differences in approach with grace and understanding. A memorable instance of this was when two of my team members, Amina and Lekan, found themselves at odds over patient education methods. Amina, with her straightforward communication style, clashed with Lekan, who preferred using storytelling as a tool for educating patients. This difference in approach led to a palpable tension within the team, affecting their collaboration and, ultimately, patient care.

As the nurse manager, I knew it was crucial to address this conflict promptly. I decided to bring Amina and Lekan together for a discussion. I started by acknowledging the problem but framing it in a positive way: "I understand that both of you are passionate about patient education, but we need to find a way to combine your strengths."

During our meeting, I encouraged both nurses to express their viewpoints and listened carefully to understand the reasons and assumptions underlying each approach. It became clear that both methods had merit, and the challenge was to find a way to integrate them effectively.

Leveraging my conflict resolution skills, I proposed a solution where Amina and Lekan could lead a patient education session together, combining direct advice with storytelling. This approach not only resolved the conflict but also enhanced our patient education sessions, making them more engaging and effective.

Reflecting on this experience, I realized the power of empathy, listening, and creativity in overcoming misunderstandings. It reinforced my belief in the importance of fostering an inclusive environment where diverse perspectives are seen as an asset rather than a problem. This incident was a pivotal moment in my career as a nurse manager, teaching me that leadership is as much about resolving conflicts as it is about guiding and mentoring.

Employee Engagement Skills

Employee engagement skills are equally critical for nurse managers, as engaged employees are more likely to be committed, motivated, and satisfied with their work. Engagement in nursing can influence job satisfaction, retention rates, and ultimately the quality of patient care (Wei et al., 2023). Nurse managers can foster engagement by providing clear communication, recognizing and valuing employees' contributions, offering professional development opportunities, and creating an inclusive work environment that respects diversity and individuality. For instance, a nurse manager might implement regular feedback sessions to understand and address nurses' concerns, celebrate team achievements, and involve staff in decision-making processes related to patient care protocols or department policies. By engaging employees, nurse managers not only enhance team morale but also drive improvements in care delivery and operational efficiency.

Mentoring Skills

Mentoring skills in nursing management involve guiding and supporting less-experienced nurses to develop their professional competencies, confidence, and career paths. Effective mentorship is crucial for fostering a learning culture within the healthcare environment, enhancing staff retention, and ensuring high-quality patient care. A nurse manager with strong mentoring skills can identify individual strengths and areas for growth among their team members, offering personalized advice, setting achievable goals, and providing constructive feedback. For example,

a nurse manager might pair a newly graduated nurse with a more-experienced nurse for shadowing opportunities, facilitating hands-on learning and professional development. Additionally, by organizing regular career development workshops and one-on-one coaching sessions, nurse managers can inspire their staff to pursue further education and specialty certifications, thereby strengthening the overall skill set of the nursing team.

Decision-Making Skills

Decision-making skills are indispensable for nurse managers, allowing them to navigate the complexities of healthcare delivery and administrative responsibilities effectively. This involves analyzing information, weighing the benefits and risks of different courses of action, and making choices that best support patient care, staff well-being, and organizational goals. In the context of nursing, decision-making can range from clinical judgments about patient care to operational decisions regarding staff scheduling or resource allocation. For instance, a nurse manager faced with a sudden influx of patients must quickly decide how to redistribute tasks and resources to maintain patient care standards without overburdening the staff. This might involve reallocating nurses from less critical areas or approving overtime work. Effective decision-making ensures that nurse managers can respond swiftly and appropriately to changing conditions, optimizing both patient outcomes and team performance.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Patient Acuity Change

Definition: Reduce the risk of harm to patients through effective, efficient, and competent performance.

Knowledge: The nurse manager will create a culture of safety with the nursing staff, allowing them to recognize elevated acuity and care limitations of the unit.

Skill: Demonstrate effective communication to the healthcare team to deliver adequate patient care. The nurse manager will do the following:

- Assist nursing staff in notifying the provider for a change in patient acuity.
- Monitor the patient along with nursing staff until the provider arrives.
- Advocate for patient safety with the provider, to facilitate transfer to an upgraded level of care.
- Explain to the patient and family/caregivers what is happening and allow the patient to express any concerns. Provide reassurance to the patient.
- Facilitate transfer to an appropriate unit.
- Assist with the patient transfer, if necessary, or monitor the nurse's other patients while they travel with the patient.

Attitude: The nurse manager will value the vigilance and prompt communication of the nursing staff in recognizing a change in patient acuity and advocating for safe and appropriate patient care.

Technical Skills

Technical skills in nursing management encompass both hard skills (technical, measurable abilities acquired through education, training, or job experience) related to healthcare technologies and clinical assessment and soft skills such as time management, organization, and communication. In today's healthcare environment, nurse managers must be proficient in using electronic health record systems, understand the latest medical devices, and stay informed about advancements in patient care techniques. For example, a nurse manager should be able to troubleshoot a malfunctioning patient monitoring system or guide staff in implementing a new telehealth service. Equally important are soft skills (interpersonal and behavioral traits that facilitate effective interactions, collaboration, and adaptability at work), which enable nurse managers to efficiently plan schedules, manage patient information, and facilitate clear and effective communication among staff and with patients. For example, a nurse manager might use project management software to organize team assignments or implement communication protocols to ensure that critical information is shared promptly and accurately. Together, these technical skills are vital for managing the operational aspects of nursing care, leading to innovations in patient services, and enhancing team collaboration.

Management Structures

Management structure in an organization delineates how decision-making authority is distributed across various levels. In the realm of nursing and health care, understanding the nuances of different management structures is crucial for effective administration and leadership. Two primary management structures are centralized and decentralized (Figure 18.2). Each of these structures has its implications on how decisions are made, how information flows within the organization, and how responsive the organization can be to changes in the healthcare environment. While **centralized management** features a top-down approach, where higher-ranking managers hold the decision-making authority, **decentralized management** adopts a more diffuse approach, spreading authority across various individuals and teams, regardless of their rank within the organization (Mishra, 2021).

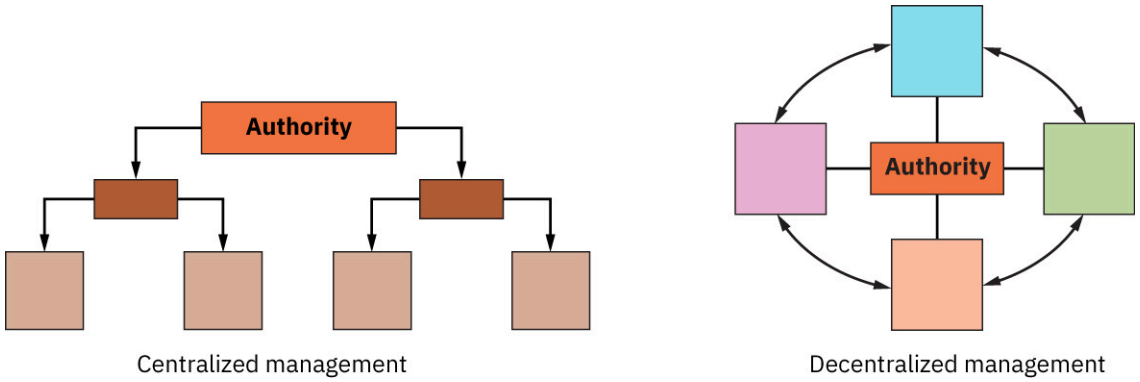

FIGURE 18.2 In a centralized structure, authority moves from higher-ranking to lower-ranking employees. In a decentralized structure, authority is spread across diverse individuals and teams. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Centralized Management

In centralized management structures, decision-making authority is concentrated at the top levels of the organization. This structure is characterized by a clear hierarchy where directives flow from higher-ranking managers down to the frontline staff. In the context of nursing, a nurse manager operating within a centralized structure might receive specific protocols and policies from the hospital administrators regarding patient care standards, staffing ratios, or budget allocations. For example, the implementation of a new electronic health record system would be decided by senior management, with nurse managers then responsible for ensuring their teams are trained and compliant with this system. While centralized management can ensure uniformity and consistency across a large healthcare organization, it may limit the flexibility of nurse managers to make swift decisions based on immediate patient care needs or to innovate based on frontline experiences.

Decentralized Management

Decentralized management structures distribute authority more evenly across different levels of the organization, empowering a wider range of individuals and teams to make decisions. In nursing, this means that nurse managers and even frontline nursing staff may have more autonomy to develop and implement practices that best meet the needs of their patients and work environment. For instance, in a decentralized management structure, a nurse manager may have the authority to adjust staffing levels or to pilot a new patient care initiative without needing approval from higher up the hierarchy. This approach can lead to increased responsiveness to patient needs, greater job satisfaction among nursing staff due to a sense of empowerment, and more innovative problem-solving. However, it also requires strong communication and coordination to ensure that decentralized decisions align with the organization's overall goals and standards. Furthermore, decentralized structures still require leaders to set the organization’s core values and direction and hold teams accountable for their decisions. Table 18.4 lists advantages and disadvantages of each type of structure.

Management Structure	Advantages	Disadvantages	Best Suited for . . .
Centralized	• Ensures consistency and uniformity across the organization • Simplifies decision-making • Streamlines policy implementation	• Can slow down decision-making due to hierarchical bottlenecks • May limit innovation and flexibility at lower levels	Large healthcare organizations where uniform standards and policies are critical for cohesive operation
Decentralized	• Empowers frontline staff • Increases job satisfaction • Encourages innovation and flexibility • Enhances responsiveness to patient needs	• Can lead to inconsistencies in care and policy implementation • Requires strong communication and coordination to align with overall goals	Smaller clinics or units within a hospital where rapid adaptation and innovation are necessary

TABLE 18.4 Advantages and Disadvantages of Management Structures

Implementing and Managing Change

In the dynamic field of health care, change is both inevitable and essential. For nurse managers, being prepared to implement and manage change is not just a skill but a necessity. The healthcare environment is continually evolving due to advancements in medical technology, changes in patient care standards, regulatory updates, and shifts in patient demographics. Each of these changes has the potential to significantly impact nursing teams, requiring adjustments in workflows, roles, practices, and even in the organizational culture itself.

Effective management of change is crucial for maintaining high standards of patient care while ensuring that the nursing team remains resilient, motivated, and cohesive. Nurse managers play a pivotal role in guiding their teams through periods of transition, whether it is adopting new electronic health record systems, shifting to patient-centered care models, or implementing new health policies. Their leadership can make the difference between a team that struggles with change and one that thrives, adapting successfully to new challenges.

Change Theory

There are numerous theories and models regarding change management that can help nurse managers navigate these transitions (Forbes Councils, 2022). These theories offer insights into the processes of change, strategies for effective implementation, and methods for overcoming resistance. By understanding and applying these theories, nurse managers can respond more effectively to change and also leverage it to improve team performance, enhance patient outcomes, and drive innovation within their organizations. Embracing change as an opportunity rather than a hurdle allows nurse managers to lead their teams with confidence and vision, positioning themselves and their staff for success in a rapidly changing healthcare landscape.

One of the foundational theories is **Lewin's model for change management**, developed by the psychologist Kurt Lewin in the early 1950s (Figure 18.3). Lewin posited that effective change occurs through three intentional steps: unfreezing, changing, and refreezing (Barrow et al., 2022).

1. The unfreezing step involves preparing the organization for change, which may include recognizing the need for change and reducing resistance from team members by communicating the limitations of current practices and the benefits of the intended change.
2. Unfreezing sets the stage for moving, when the actual transition occurs. During this step, change occurs as new processes, behaviors, and attitudes are introduced and adopted by the team.

3. The final step, refreezing, involves solidifying the new state as the standard practice. This ensures that the changes are integrated into the organization's culture and operations, thereby preventing a regression to old habits.

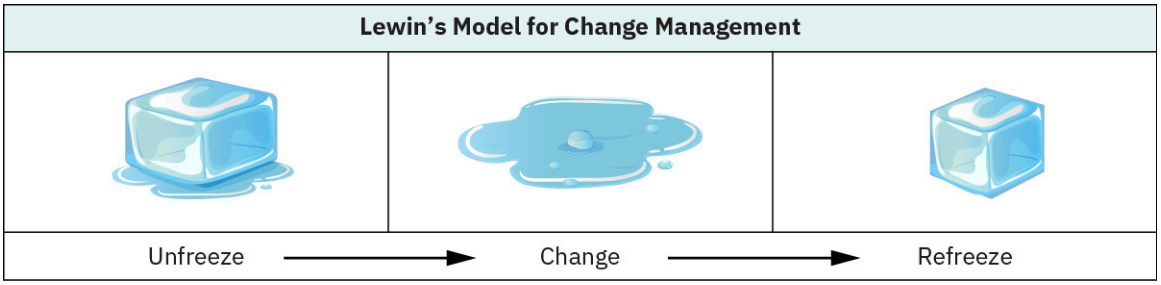

FIGURE 18.3 Lewin's model for change management consists of three stages: unfreezing, changing, and refreezing. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Whereas Lewin's theory focuses on the process of solving a problem, a more recent theory, **appreciative inquiry**, builds from a foundation of what is already working within an organization (Naca-Abell, 2020). Appreciative inquiry engages team members to envision what their organization could be, based on its successes and peak experiences, rather than dwell on what is lacking. This process is structured around four stages: discover, dream, design, and destiny.

1. In the discover phase, nurse managers and their teams identify the best of what is currently happening within the organization.
2. During dream, the team envisions what the organization might become.
3. During design, the team plans and prioritizes actions for turning their dreams into reality.
4. Finally, in the destiny phase, the team implements the proposed design, with an eye toward sustaining the changes and celebrating the successes.

Planned Change

Both Lewin's model and appreciative inquiry are examples of **planned change**, a deliberate, systematic process for introducing transformation into an organization or system. In essence, planned change includes any theory that approaches change proactively, in an intentional, systematic way, rather than reactively. As you have seen, there are many different approaches to planned change, from problem-focused theories such as Lewin's to success-oriented theories such as appreciative inquiry. However, most approaches include the following basic steps:

1. First, the organization must recognize the need for change.
2. Next, someone must be appointed to lead the change effort, and a team must be assembled.
3. Working together, the team must then make several decisions that will drive the change process:
   a. What are the goals?
   b. What is the current climate within the organization, and how receptive will people likely be to these goals?
   c. What approach will likely be most effective at achieving these goals in light of this climate?
4. Once these questions are answered, the team is ready to develop and implement a plan for change.
5. Finally, the team should evaluate the results of the plan to determine whether the goals were met, whether the reception to change has been positive, and how best to proceed based on these results.

Resistance to Change

Resistance to change is a natural human response, particularly in high-stress environments like health care, where routines and established practices provide a sense of security and predictability. In nursing, resistance might manifest when introducing new technology, shifting staffing models, or altering patient care protocols. For instance, a nurse manager implementing an electronic health records system might encounter resistance from staff who are accustomed to paper records and wary of the learning curve associated with new software. Such resistance can stem from fear of the unknown, perceived threats to job security, or concerns about increased workload. Understanding the root causes of resistance is crucial for nurse managers to address concerns empathetically and effectively, ensuring a smoother transition to new practices.

Overcoming Resistance to Change

Overcoming resistance to change involves a combination of communication, education, and support. Clear,

transparent communication about the reasons for the change, its benefits, and its impact on staff can help alleviate fears and build trust. For example, in the case of transitioning to electronic health records, a nurse manager might organize demonstrations to showcase the system's efficiency benefits and patient safety improvements. Education and training are also vital, providing staff with the skills and confidence needed to adapt to new systems or procedures. Furthermore, creating a supportive environment where staff can express concerns, ask questions, and provide feedback on the change process encourages participation and ownership of the change. To foster a positive attitude toward change, nurse managers can recognize and celebrate milestones and successes, reinforcing the value of new practices. By employing these strategies, nurse managers can transform resistance into engagement, leading their teams through change with resilience and optimism.

Goals of Nurse Managers

Nurse managers play a critical role in healthcare settings, bridging the gap between the administrative and clinical sides of nursing. Their goals encompass a wide range of responsibilities aimed at ensuring the delivery of high-quality patient care, fostering a positive work environment, and maintaining operational efficiency. To achieve these objectives, nurse managers engage in planning, staffing, organizing, directing, and regulating. These foundational management activities enable nurse managers to effectively lead their teams, optimize resources, and navigate the complexities of the healthcare landscape. By setting clear goals in these areas, nurse managers contribute to the overall success and sustainability of healthcare organizations, ensuring high-quality patient care.

Planning

Planning is the first critical step in achieving the goals of nurse managers. It involves setting objectives for the nursing team and developing strategies to reach these goals within the constraints of available resources. Effective planning requires a deep understanding of the healthcare facility's needs, patient care standards, and capabilities of the nursing staff. For example, a nurse manager might plan to implement a new patient triage system in the emergency department to reduce wait times and improve patient outcomes. This would involve assessing current processes, forecasting future patient flow, and determining the staffing and training needs to support the new system. By carefully planning, nurse managers ensure that initiatives are well-designed, achievable, and aligned with broader organizational goals.

REAL RN STORIES

The Keystone of Management: My Journey in Mastering Planning

Nurse: Aarav, MSN, RN, Nurse Manager
Clinical setting: General medical unit
Years in practice: 10
Facility location: Houston, Texas

As a new nurse manager in a bustling general medical unit, I quickly learned that effective planning is the foundation on which all other management goals rest. Coming into the role, I was eager to make improvements and enhance our unit's patient care quality. However, I soon realized that without a solid plan, even the best intentions could lead to confusion and missed opportunities.

One of my first initiatives involved redesigning the patient discharge process to reduce wait times and enhance patient satisfaction. Initially, the process was haphazard, often causing delays in patient discharge and, consequently, in admitting new patients. Recognizing the need for a systematic approach, I began by mapping out the current discharge process, identifying bottlenecks and areas for improvement. Engaging the team in brainstorming sessions, we developed a streamlined discharge checklist that included predischarge education, medication reconciliation, and follow-up appointment scheduling to be initiated on admission rather than at discharge.

Implementing this plan required detailed organization, from training staff on the new procedures to coordinating with the pharmacy and outpatient services. The results were significant—not only did our patient satisfaction scores improve, but we also saw a decrease in readmission rates, a testament to the effectiveness of thorough discharge planning.

This experience taught me the undeniable value of planning in achieving management goals. It showed me that by taking the time to plan carefully, we could anticipate challenges, allocate resources efficiently, and ultimately provide better care for our patients. Planning has become my keystone for management, guiding my approach to subsequent projects and initiatives within the unit.

Staffing

Appropriate staffing is another essential goal for nurse managers, who must ensure their team includes the right number of staff with the appropriate skills to meet patient care needs at all times. Effective staffing involves not only recruiting and hiring but also scheduling, developing, and retaining nursing staff. For instance, a nurse manager in a pediatric unit might identify a need for more nurses trained in pediatric oncology due to an increase in patient admissions. Addressing this need could involve hiring new staff with specialized skills or providing existing staff with targeted training opportunities. Additionally, the nurse manager would need to consider the optimal scheduling patterns to cover all shifts adequately while allowing for rest, thereby reducing the risk of burnout. Proper staffing ensures that the nursing team can provide high-quality, continuous care to all patients, reflecting the nurse manager's commitment to excellence in patient care and staff well-being.

Organizing

For nurse managers, organizing involves the arrangement of resources, staff, and processes to ensure efficient operation and high-quality patient care. Effective organization requires a clear understanding of the department's goals, the roles and responsibilities of each team member, and the resources available. In the context of nursing, organizing might include developing a streamlined process for patient admissions and discharges to minimize delays and improve patient flow. For example, a nurse manager might reorganize the shift patterns to ensure that staff with specific skills are available when most needed, such as having more experienced trauma nurses during peak emergency room hours. Additionally, organizing can involve setting up interdisciplinary teams for complex patient care, ensuring that all necessary specialists are coordinated to provide comprehensive treatment plans. By effectively organizing, nurse managers create a structured and supportive environment that enables staff to focus on delivering the best possible care to patients.

Directing

Directing involves leading and motivating staff to achieve the healthcare facility's goals. This goal is crucial for nurse managers, as it encompasses guiding the nursing team through daily tasks, addressing challenges, and ensuring that everyone remains focused on providing exceptional patient care. Effective directing requires strong leadership, clear communication, and the ability to inspire and engage team members. For instance, a nurse manager might direct the team through a significant change, such as the adoption of a new policy or procedure, by clearly explaining the benefits, providing training, and offering support throughout the transition. Another aspect of directing is offering regular feedback and recognition, which are key to motivating staff and promoting a positive work culture. Through directing, nurse managers ensure that the nursing team is aligned with the organization's vision and values and that all team members are working cohesively toward common objectives.

Regulating

Regulating encompasses establishing and enforcing standards and policies to ensure the nursing team's activities align with clinical quality, financial accountability, and regulatory compliance. This goal is vital for maintaining the integrity of healthcare services and ensuring patient safety. Nurse managers play a crucial role in regulating by implementing evaluation systems that monitor performance in areas such as patient care, staff efficiency, and resource utilization. For example, a nurse manager might introduce a quality improvement program that regularly assesses patient outcomes and identifies areas for enhancement, such as reducing hospital-acquired infection rates. Additionally, regulating involves ensuring financial accountability by managing budgets effectively, optimizing resource use, and justifying the need for additional resources or staff when necessary. Through careful regulation, nurse managers ensure that their departments not only meet but exceed the standards set by healthcare authorities and accreditation bodies, thereby upholding the organization's reputation and commitment to excellence in patient care.

18.3 Implementing Leadership and Management into Nursing Practice

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine the nurse manager's and leader's role in patient care coordination
- Recognize how nurse leaders and managers delegate patient care
- Identify how nurse managers and leaders can provide support for professional development

In the multifaceted world of health care, the roles of nurse managers and leaders extend far beyond administrative duties, deeply influencing patient care and the professional growth of their teams. This module delves into several critical areas where nurse managers and leaders make a tangible impact: the coordination and delegation of patient care and the support of nursing staff as they pursue professional development. Understanding these areas is essential for ensuring that patient care is seamless, holistic, and of the highest quality.

Patient Care Coordination

Organizing a patient's healthcare needs across providers, settings, and time is called **patient care coordination** and is a cornerstone of effective healthcare delivery. Care coordination ensures that patients receive comprehensive and cohesive care tailored to their individual needs. For nurse managers and leaders, this involves a proactive approach to organizing and overseeing all aspects of a patient's care journey, from admission to discharge and beyond. It includes the strategic use of interdisciplinary referrals and the meticulous management of cases, especially for patients with complex health conditions. Effective care coordination leads to improved patient outcomes, enhanced patient satisfaction, and a reduction in unnecessary hospital readmissions (NEJM Catalyst, 2018). It demands clear communication, collaboration among healthcare professionals, and a deep understanding of each patient's unique healthcare needs.

LIFE-STAGE CONTEXT

Care Coordination: Older Adults

While care coordination is important for patients of all ages, it's particularly important for older adults. It's not uncommon for older patients to have multiple chronic health conditions, be prescribed one or more medications, and have more than one provider managing their care.

When acute medical needs are added to their chronic needs, such as in the case of an injurious fall or serious infection, the coordination of care can have a significant effect on outcomes. In some cases, it may even be a matter of life or death.

Older adults may also have physical and cognitive limitations that must be factored into their care planning, such as the need for transportation or caregiver assistance. For these patients, coordination of care is not just among providers but also includes allied healthcare professionals, community resources, and family members. Recent research suggests that older adults who experience better care coordination were also more satisfied with the healthcare services that they receive (Eastman et al., 2022).

Interdisciplinary Referrals

A critical component of patient care coordination, **interdisciplinary referral**s allow for a holistic approach to health care. When a primary care provider identifies a need beyond their expertise or resources, best practice is to refer the patient to a specialist to address specific health issues (Morris et al., 2021). For nurse managers and leaders, facilitating an interdisciplinary referral involves ensuring that it is appropriate, that the specialist has all the necessary information to provide targeted care, and that there is a seamless communication loop between all parties involved, including the patient. For example, a patient with heart failure may require a referral to a cardiologist at an advanced heart failure center. Many healthcare facilities utilize an electronic medical record (EMR) system, enabling practitioners to electronically submit interdisciplinary referrals. The nurse manager plays a role in facilitating this process for the primary care provider. This involves ensuring that the patient's EMR is transmitted to the cardiologist, scheduling appointments as necessary, and educating the patient about the significance of the appointment with the specialist.

Case Management Duties

The role of a **case manager**, often fulfilled by a nurse, is integral to patient care coordination, particularly for patients with chronic illnesses or long-term conditions. Case managers assess patients' needs, develop personalized care plans, and coordinate the various services and resources required to implement these plans. They act as advocates for the patient, navigating the healthcare system to ensure timely access to necessary treatments and interventions. Moreover, they monitor the patient's progress and adjust care plans as needed, in consultation with other healthcare professionals and the patient themselves (Western Governors University, n.d.). For instance, a case manager working with a patient with congestive heart failure would coordinate care among cardiologists, dietitians, physical therapists, and home health services, ensuring that all aspects of the patient's care are addressed in a cohesive and integrated manner. Nurse managers and leaders support case managers by providing the necessary resources, guidance, and leadership to ensure that comprehensive, patient-centered care is delivered efficiently and effectively.

Delegating Patient Care

As discussed in 15.4 Nursing Standards of Delegation, **delegation** is the act of requesting staff members to perform tasks or procedures that are outside of their normal job but within the limits of their job description (ANA, 2013). Per the National Guidelines for Nursing Delegation, staff members who can accept delegated tasks are unlicensed assistive personnel (UAP), which includes nursing assistants, patient care technicians, and other assistive personnel. Depending on the nurse's role and position, they may also delegate or transfer patient care to other RNs (ANA-NCSBN, 2019). The delegating nurse always retains accountability, or responsibility, for the delegated task and therefore is functionally a manager of the delegatee, regardless of their actual title. So it is especially important for nurse managers and leaders to know exactly how delegation does and does not work.

Knowledge of Scope of Practice

Recall the five "rights" of delegation (Table 18.5), which were also discussed in 15.4 Nursing Standards of Delegation. To ensure all these rights are upheld, nurse leaders and managers must know the scope of practice of all potential delegates and ensure all staff also understand the scope of practice of their coworkers. As discussed in 1.3 Nursing as a Profession, **scope of practice** refers to the defined limits and parameters within which a professional within a particular field is authorized to work, make decisions, and provide services (ANA, 2021). Nurse leaders and managers also have the task of promoting teamwork and building a supportive environment where nurses are empowered and confident in delegating appropriate tasks, and UAP are receptive to receiving tasks (Campbell et al., 2020).

Right	What the Right Entails
Right task	The task must be appropriate for delegation.
Right circumstance	The circumstances must be appropriate for delegation.
Right person	The individual must be able to perform the task.
Right communication	The instructions regarding the task must be clear.
Right supervision	The individual performing the task must be properly supervised.

TABLE 18.5 **Rights of Nursing Delegation**

Determination of Clinical Ability

The determination of clinical ability is a critical aspect of delegating patient care, requiring nurse managers to assess the skills and competencies of their team members accurately. This involves not just a general understanding of each team member's qualifications and experience but also an ongoing evaluation of their performance and professional development. When determining clinical ability, nurse managers must consider the following:

- The complexity of the care needs of the patient and whether the staff member has demonstrated proficiency in similar tasks.

- The staff member's current workload and the potential impact of additional responsibilities on their ability to deliver safe, quality care.
- The need for, and availability of, additional training or support to equip the staff member with the skills needed to perform the delegated task successfully.

For example, before delegating a task such as wound care for a patient with diabetes, a nurse manager would need to assess whether the UAP has the requisite knowledge of diabetes management and wound care principles and the ability to recognize and report signs of infection or other complications. This might involve reviewing the assistant's training records, observing their performance in related tasks, or arranging for a more-experienced nurse to provide mentorship and oversight initially. By carefully assessing clinical competency, nurse managers ensure that delegation enhances patient care without compromising safety or quality.

Supporting Professional Development

Supporting professional development is a key responsibility of nurse managers and leaders, essential for nurturing the growth of nursing staff and ensuring high standards of patient care. Through professional development, nurses can enhance their knowledge, skills, and competencies, adapting to the evolving demands of health care. Effective strategies for supporting professional development include mentorship, preceptorship, engagement with professional organizations, and continuing education (CE). By investing in the professional growth of their team, nurse managers not only improve individual nurse performance but also contribute to the advancement of the nursing profession as a whole.

LIFE-STAGE CONTEXT

Age-Related Considerations for Nurse Leadership

Age-related considerations are important in nursing leadership and management, as "generation gaps" can influence how leaders at different life stages interact with their teams, address the needs of patients across different age groups, and navigate generational differences in the workplace. Here are some key age-related considerations for nursing leadership and management, both for nurses and staff as well as patients:

- Generational diversity: Nursing leaders and managers should recognize and appreciate generational diversity within their teams. They should understand the characteristics, values, and communication styles of different generations, such as baby boomers, Generation X, millennials, and Generation Z, and be flexible in their leadership approaches.
- Mentorship and succession planning: Nursing leaders play a crucial role in mentoring and developing the next generation of nurse leaders. They should provide opportunities for younger nurses to gain leadership experience and offer guidance and support as they progress in their careers. Additionally, nursing leaders should engage in succession planning to ensure continuity of leadership and knowledge transfer as experienced nurses retire or transition out of leadership roles.
- Age-friendly care: Nursing leaders should promote age-friendly care practices that address the unique needs and preferences of patients across the life span. They should ensure that staff are trained in age-specific care protocols, such as pediatric care, adult care, and geriatric care, and that care environments are designed to accommodate the physical, cognitive, and psychosocial needs of patients of all ages.
- Work-life balance: Nursing leaders should be mindful of the work-life balance needs of nurses at different stages of their careers and life. They should facilitate flexible scheduling options, support policies for parental leave and caregiver responsibilities, and promote wellness initiatives that address the physical and emotional well-being of staff members across different age groups.
- Technology adoption and digital literacy: Nursing leaders should recognize variations in willingness to adopt technology and overall digital literacy among nurses of different ages. They should provide training and support to help older nurses adapt to new technologies and digital healthcare platforms, while also leveraging the technological skills of younger nurses to enhance workflow efficiency and patient care delivery.
- Continuing education and professional development: Nursing leaders should support lifelong learning and professional development opportunities for nurses of all ages. They should encourage staff to pursue continuing education, certification programs, and advanced degrees to stay abreast of current practices and

advance their careers.
- Retirement planning and transition support: Nursing leaders should provide resources and support to nurses nearing retirement age to help them plan for the transition out of the workforce. This may include access to financial planning services, retirement seminars, and opportunities for phased retirement or mentorship roles.

By considering these age-related factors, nursing leaders and managers can create inclusive, supportive work environments that foster collaboration, innovation, and high-quality patient care across all age groups.

Mentorship

Mentorship plays a vital role in the professional development of nurses, offering guidance, support, and knowledge-sharing that can significantly impact a nurse's career trajectory. A **mentor** is an experienced practitioner who serves as a role model, adviser, and advocate for a student or less-experienced colleague, facilitating their professional and personal growth. This relationship can help the mentee navigate the complexities of the healthcare environment, develop critical thinking and decision-making skills, and set and achieve career goals. For instance, a mentor might help a new nurse develop confidence in patient interactions, provide feedback on clinical skills, or offer advice on balancing work and continuing education. Effective mentorship creates a supportive learning environment that encourages curiosity, innovation, and excellence, enhancing the overall quality of care provided to patients (ANA, n.d.-b).

Preceptorship

Preceptorship is another key component of professional development, focusing on the practical application of nursing skills and knowledge in clinical settings. A **preceptor** is a licensed professional who coaches and supervises students or new nurses during their clinical rotations, providing hands-on learning opportunities, real-time feedback, and evaluation. This one-on-one relationship allows the preceptee to gain valuable clinical experience under the guidance of an experienced nurse, bridging the gap between theoretical knowledge and practice. For example, a preceptor working in a critical care unit might guide a nursing student through the process of monitoring a patient's vital signs, interpreting data from medical equipment, and responding to emergent situations. Through preceptorship, novice nurses learn to apply their knowledge confidently and competently, preparing them for independent practice and contributing to their professional competence and growth (Baylor University, n.d.).

In nursing, preceptors differ from other guidance roles such as mentors, coaches, and supervisors. A mentor is a trusted individual who provides long-term guidance on the nurse's career and professional development. Coaches help nurses work on specific performance improvements by asking questions that promote reflection and problem-solving. Supervisors oversee the nurse's day-to-day work activities by ensuring adherence to policies, evaluating performance, and encouraging staff accountability.

Professional Organizations

As discussed in 1.2 Nursing Education Programs, professional nursing organizations are collective bodies formed by nurses to represent and advocate for the interests of the nursing profession. These organizations play a crucial role in supporting the development of nurse leaders and managers and provide numerous resources and opportunities for professional growth and networking.

Professional nursing organizations offer educational programs, conferences, and workshops designed for nurse leaders and managers. These events typically cover topics such as leadership development, healthcare administration, policy and advocacy, as well as the latest trends and best practices in nursing management. Nurse leaders and managers can enhance their knowledge, skills, and competencies by attending these events, particularly if they want to learn how to more effectively lead and manage their teams, drive innovation, and navigate the challenges of the healthcare industry. Examples of the benefits of being part of and active in a professional nursing network include the following:

- Networking opportunities: Nurse leaders and managers gain access to a broad network of peers and mentors through professional associations. Networking events (virtual and in person) facilitate the exchange of ideas, sharing of best practices, and collaborations between professionals that can influence policy and practice on a much larger scale.
- Continuing education and professional development: Many nursing organizations offer workshops, seminars, and conferences throughout the year that are designed to enhance nursing leadership skills. These

educational opportunities help nurses stay current regarding the latest trends, innovations, and regulations in health care, and give them the knowledge they need to remain competent and competitive in their field. Many professional nursing organizations also provide specialized certifications and credentialing programs for nurse leaders and managers. Examples of these certifications are discussed in previous sections (e.g., NE-BC, NEA-BC, CNML, CENP).

- Advocacy and influence: Nurse leaders who are part of professional organizations are well positioned to become advocates for changes in healthcare policy, nursing practice, and patient care standards. Professional bodies often have the resources and political influence necessary to successfully lobby for legislative changes that can significantly affect the nursing profession and healthcare delivery systems.
- Research and resources: Access to cutting-edge research and a wealth of academic resources, including case studies, white papers, and evidence-based practice guidelines, supports nurse managers with learning about and implementing effective patient care strategies and operational improvements within their organizations.
- Leadership and volunteer opportunities: Participating in committees or holding office within these organizations gives nurse leaders the chance to develop critical management and decision-making skills. These roles provide them practical experience in leading diverse teams and projects, significantly enhancing their leadership capabilities and helping them feel more confident and at ease in leadership roles.
- Recognition and awards: Professional organizations often recognize outstanding contributions to the nursing field by giving awards and acknowledgments. This type of public recognition not only bolsters an individual's career but also highlights the critical role that nurse leaders play in advancing health care.

Nurse leaders and managers may also choose to take on various roles within these professional organizations, such as serving on boards or committees, presenting at conferences, or contributing to research and publications. Examples of these roles may include the following:

- Committee membership: Serve on committees that focus on ethics, practice standards, education, and policy, providing strategic direction and making pivotal decisions that shape the profession.
- Mentorship programs: Lead mentorship initiatives to prepare less-experienced nurses for future leadership roles, enhancing the profession's overall strength and sustainability.
- Policy development: Engage in policy development efforts that directly influence clinical practices and healthcare outcomes.
- Educational speaker: Serve as speakers or panelists at professional conferences, sharing knowledge and innovations that can educate and inspire other nursing professionals.

By actively participating in these organizations, nurse leaders can enhance their professional development and contribute to the advancement of the nursing profession as a whole. Table 18.6 lists some of the major national and international nurse leadership organizations and their respective missions, highlighting the diverse resources and opportunities available to nurse leaders and managers.

Organization	Mission
American Academy of Nursing	"The American Academy of Nursing's mission is to improve health and achieve health equity by impacting policy through nursing leadership, innovation, and science." (AAN, n.d.)
American Association of Colleges of Nursing	"As the collective voice for academic nursing, AACN serves as the catalyst for excellence and innovation in nursing education, research, and practice." (AACN, 2024)

TABLE 18.6 Professional Nursing Organizations for Nurse Leaders and Managers

Organization	Mission
American Nurses Association	"ANA exists to advance the nursing profession by: • Fostering high standards of nursing practice; • Promoting a safe and ethical work environment; • Bolstering the health and wellness of nurses; and • Advocating on healthcare issues that affect nurses and the public." (ANA, n.d.-a)
American Organization for Nursing Leadership	"Transform health care through expert and influential nursing leadership." (American Organization for Nursing Leadership, 2024)
Association for Leadership Science in Nursing	"ALSN is an international nursing organization celebrating its members unique contributions to nursing leadership science." (ALSN, n.d.)
International Council of Nurses	"ICN's mission is to represent nursing worldwide, advance the nursing profession, promote the wellbeing of nurses, and advocate for health in all policies." (ICN, n.d.)

TABLE 18.6 Professional Nursing Organizations for Nurse Leaders and Managers

Additionally, each nursing specialty has its own professional organization, such as the Academy of Medical-Surgical Nurses, the Emergency Nurses Association, and Society of Pediatric Nurses. Most states also have multiple professional organizations, in addition to a **board of nursing (BON)**, which oversees the practice of nursing within that state.

Continuing Education

A cornerstone of nursing practice is **continuing education (CE)**. By participating in ongoing educational activities, nurses remain at the forefront of medical knowledge, technological advancements, and best practices in patient care. Continuing education is essential for personal and professional growth. These activities can range from workshops, seminars, and conferences to online courses and academic programs, all designed to keep nursing professionals informed and competent in their practice.

For nurse leaders and managers, supporting and encouraging CE is crucial for fostering a culture of lifelong learning within their teams. This support can manifest in various ways, such as providing time off for staff to attend CE events, offering reimbursement for educational courses, or organizing in-house training sessions on emerging healthcare trends. For example, a nurse manager might coordinate a series of workshops on the latest evidence-based practices in wound care, enabling the nursing staff to update their skills and apply new techniques to improve patient outcomes.

Moreover, CE is not only about enhancing clinical skills but also about developing leadership, communication, and critical thinking abilities that are vital for effective nursing practice. It prepares nurses to adapt to changes in healthcare delivery, meet the challenges of modern nursing, and take on advanced roles within the healthcare system. By prioritizing CE, nurse managers and leaders ensure that their teams are not only competent but also confident and innovative, contributing to the overall excellence in healthcare services.

CULTURAL CONTEXT

Cultural Considerations for Nurse Leadership

Cultural considerations are crucial in nursing leadership and management, as they influence how health care is delivered, how teams function, and how patients experience care. Here are some key cultural considerations related to nursing leadership and management:

- Diversity, equity, and inclusion: Effective nursing leaders recognize and value diversity among their staff and patient populations. They promote a culture of inclusivity where all individuals feel respected, supported, and empowered to contribute their unique perspectives and talents.
- Cultural competence: Nursing leaders and managers should possess cultural competence—the ability to understand, communicate with, and effectively interact with people from diverse cultural backgrounds. They should be knowledgeable about diverse cultural beliefs, practices, and healthcare preferences, which will help them provide culturally sensitive care and support their staff in delivering culturally competent care.
- Language and communication: In multicultural healthcare settings, language barriers can impede effective communication between healthcare providers and patients. Nursing leaders should ensure that patients have access to interpretation services and language assistance to facilitate clear communication and understanding. They should also promote the use of plain language and nonverbal communication techniques to bridge cultural, linguistic, and health literacy divides.
- Cultural sensitivity in care delivery: Nursing leaders and managers should promote cultural sensitivity in care delivery by encouraging their staff to recognize and respect patients' cultural beliefs, values, and preferences. This may involve adapting care practices, treatment plans, and communication styles to align with patients' cultural norms and expectations.
- Health disparities and equity: Nursing leaders have a responsibility to address health disparities and promote health equity among diverse patient populations. They should advocate for policies and practices that reduce barriers to healthcare access and improve health outcomes for marginalized or underserved communities.
- Cross-cultural team dynamics: In multicultural healthcare teams, nursing leaders play a vital role in fostering collaboration, mutual respect, and understanding among team members from different cultural backgrounds. They should promote cultural humility—the recognition of one's own cultural biases and the willingness to learn from others' cultural perspectives.
- Conflict resolution and cultural sensitivity: Nursing leaders should be adept at resolving conflicts that arise due to cultural differences or misunderstandings. They should facilitate open dialogue, promote empathy and understanding, and seek mutually acceptable resolutions that respect the cultural values and dignity of all involved parties.
- Cultural competence training and education: Nursing leaders should provide ongoing training and education to their staff on cultural competence, diversity, and inclusion. This may include workshops, seminars, or online courses to enhance staff awareness, knowledge, and skills in working effectively with diverse patient populations.

By integrating these cultural considerations into nursing leadership and management practices, healthcare organizations can create a culturally responsive environment that promotes high-quality, patient-centered care and enhances the well-being of both patients and healthcare providers.

18.4 Certifications for Nurse Leaders and Managers

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Compare types of certifications in nursing
- Recall leadership and management organization-specific certifications
- Describe nursing degrees for leadership and management

In the evolving landscape of health care, the need for skilled nurse leaders and managers is more critical than ever. These professionals not only ensure the delivery of high-quality patient care but also guide nursing teams through the complexities of modern healthcare environments. To prepare for these vital roles, many nurses choose to obtain specific certifications or pursue advanced degrees that provide the necessary knowledge, skills, and recognition. This module explores the various pathways available for nurses seeking to advance their careers into leadership and management positions, detailing the types of certifications, organization-specific certifications, and degrees that support this professional growth.

Certifications in Nursing

As discussed in 1.2 Nursing Education Programs, obtaining a license and pursuing certification are two distinct steps

in a nurse's professional development. Licensure is mandatory for all nurses and is granted by state boards of nursing, authorizing individuals to practice nursing within a specific state. This legal requirement ensures that all practicing nurses meet a minimum standard of knowledge and competency essential for patient care. On the other hand, certification is a voluntary process that goes beyond licensure, allowing nurses to gain recognition in a specialty area of practice. While licensure demonstrates a broad competency in nursing, certification highlights a nurse's expertise and commitment to a specific field or specialty within nursing. It is a testament to a nurse's dedication to professional development, expertise in a particular area, and commitment to providing the highest quality of care (Bradley University, n.d.).

Board and Specialty Certification

The process of certification allows nurses to showcase their specialized knowledge and skills in various nursing specialties, ranging from pediatrics and gerontology to critical care and oncology. Two types of certification in nursing include specialty certification and board certification. To obtain **specialty certification**, nurses typically must meet specific eligibility criteria, which can include a certain number of hours of clinical experience in the specialty area, completion of a minimum number of contact hours of nursing CE in the specialty, and successful completion of testing. This certification is also typically offered by smaller nursing organizations. Considered an advanced nursing specialty certification, board certification has more eligibility requirements, such as a higher number of clinical experience hours, more education hours required, and more advanced testing. Board certification is offered by large nursing organizations, such as the American Nurses Credentialing Center.

Certification is recognized as a significant achievement in a nurse's career, signaling to employers, colleagues, and patients a nurse's advanced proficiency and expertise in a particular area of nursing. It not only enhances a nurse's professional credibility but also often leads to better job prospects, higher salaries, and opportunities for advancement (American Association of Critical-Care Nurses, n.d.). Additionally, maintaining certification typically requires ongoing education and professional development, ensuring that nurses stay current with the latest best practices, technologies, and research in their specialties. Through this continuous learning, certified nurses contribute to the improvement of patient care standards and outcomes across healthcare settings.

Leadership and Management Organization-Specific Certifications

For nurses aspiring to elevate their careers into leadership and management roles, specific certifications are designed to recognize their expertise and qualifications. These certifications serve as benchmarks of professional achievement and leadership competence, signaling a nurse's readiness to take on executive roles within healthcare organizations. Unlike board certifications that focus on clinical specialties, leadership and management certifications assess a nurse's ability to lead teams, manage resources, and improve healthcare delivery systems. They highlight a commitment to excellence in nursing leadership and a dedication to advancing the profession.

Certified Nurse Manager and Leader

The **Certified Nurse Manager and Leader (CNML)** is a specialty certification designed for nurse leaders in managerial positions who are responsible for the daily operations of a unit or service within a healthcare facility. Offered by the American Organization for Nursing Leadership (AONL), this certification focuses on validating the essential skills needed for effective nursing leadership, including financial management, human resources, performance improvement, and strategic management and technology. Candidates for the CNML certification must meet specific educational and experience requirements and pass a comprehensive examination (AONL, 2024a).

Nurse Executive Certification

The **Nurse Executive Certification (NE-BC)** is a board certification aimed at nurse leaders who hold key administrative roles and are involved in shaping policies, procedures, and strategies that impact the delivery of care within a unit or team. This certification is offered by the American Nurses Credentialing Center (ANCC) and examines a nurse's ability to contribute to the strategic vision of their organization, lead change initiatives, and ensure the delivery of quality, patient-centered care. The NE-BC credential recognizes nurse executives who have demonstrated advanced knowledge and leadership skills in nursing administration (ANCC, n.d.-a).

Nurse Executive, Advanced Certification

Nurse Executive, Advanced Certification (NEA-BC) is a board certification for experienced nurse leaders who have moved beyond the management of single units or teams to influence the operations of entire systems or

organizations. This advanced certification, also offered by the ANCC, assesses a leader's ability to effect organizational change, manage complex environments, and lead innovations in healthcare practice. Eligibility for the NEA-BC includes holding a master's or higher degree, having a current RN license, and demonstrating specific leadership experience at the executive level (ANCC, n.d.-b).

Certified in Executive Nursing Practice

The **Certified in Executive Nursing Practice (CENP)** specialty certification is specifically designed for nurse leaders who are at the executive level, overseeing the strategic, operational, and financial outcomes in healthcare organizations. This prestigious certification, offered by the AONL, is tailored for those who have a broad base of professional leadership experience and education. The CENP certification focuses on core areas such as leadership, communication, business skills, professionalism, health and public policy, and knowledge management. To be eligible for the CENP, candidates must demonstrate a high level of experience in executive nursing leadership roles and complete a rigorous examination that assesses their competency in these critical areas.

Obtaining the CENP credential signifies a nurse leader's commitment to excellence in executive nursing practice. It acknowledges their depth of knowledge in the field and their capability to drive the vision and strategic direction of healthcare delivery. The CENP is recognized across the healthcare industry as a mark of distinction for nurse executives, highlighting their leadership in improving patient care, fostering professional development among their teams, and contributing to the overall success of their organizations (AONL, 2024b).

Renewal Process for Certifications

The renewal process for leadership and management certifications in nursing is designed to ensure that nurse leaders continue to meet the high standards of professional development and stay abreast of the latest practices in healthcare leadership and management. Typically, these certifications require renewal every three to five years, although the specific time frame varies by certifying body.

To renew these certifications, nurse leaders are usually required to demonstrate continued professional development and leadership growth. This may involve accumulating a certain number of continuing education (CE) units in topics relevant to nursing leadership and management, participating in professional activities such as serving on boards or committees, presenting at professional conferences, or contributing to the development of leadership policies or standards. Additionally, some certifications may require candidates to retell their leadership experiences, showcasing how they have applied their skills to improve healthcare delivery and patient outcomes in their organizations. The renewal process not only validates the ongoing commitment of nurse leaders to their professional excellence but also ensures that they remain at the forefront of leadership and management practices, ready to tackle the challenges of the ever-evolving healthcare landscape.

Degrees for Leadership and Management

Nurses interested in taking on leadership or management roles within healthcare organizations should consider pursuing graduate-level education. Advanced degrees, such as a Master of Science in Nursing (MSN) or a Doctor of Nursing Practice (DNP), provide nurses with the knowledge, skills, and credentials needed to succeed in leadership positions. These programs often cover topics such as healthcare administration, organizational behavior, finance, and leadership strategies, which provide the nurse with the competencies required to lead teams, manage healthcare resources, and advocate for organizational change.

A graduate degree also elevates the nurse's credibility and demonstrates their commitment to professional growth and development. It can open doors to new career opportunities, such as nursing administration, nursing education, and executive leadership.

As discussed in 1.2 Nursing Education Programs, higher education can be a crucial component of professional development. The four certifications discussed in the previous subsection all require at least a baccalaureate degree in nursing. The Nurse Executive, Advanced Certification (NEA-BC) also requires a graduate degree (ANCC, n.d.-b), and CENP candidates with a graduate degree require half as many hours of professional experience as candidates with only a baccalaureate (AONL, 2024b). Graduate degrees include master's degrees and doctorates.

Master of Science in Nursing

A **Master of Science in Nursing (MSN)** degree is a graduate-level program that equips nurses with advanced

practice knowledge, leadership, and management skills necessary for high-level roles in healthcare settings. For aspiring nurse managers and leaders, an MSN offers specialized tracks such as nursing administration, health policy, education, nurse leadership, population health, and informatics. This degree not only deepens clinical expertise but also focuses on critical areas like organizational management, financial acumen, strategic planning, and healthcare policy, which are essential for effective leadership in nursing.

Nurses with an MSN degree are prepared to take on roles such as nurse manager, clinical nurse leader, nurse administrator, or even executive positions within healthcare organizations. The curriculum typically includes courses on advanced healthcare systems, quality improvement, patient safety, and evidence-based practice, all aimed at enhancing the delivery of patient care through effective management and leadership. Additionally, many MSN programs offer opportunities for practical leadership experience through internships or capstone projects, allowing students to apply their learning in real-world settings. The MSN degree is an excellent option for nurses aiming to impact health care at the organizational or system level, providing the tools they need to lead effectively and drive positive change.

Doctorate Degree in Nursing

Doctorate degrees in nursing include the **Doctor of Nursing Practice (DNP)**, the **Doctor of Philosophy (PhD) in Nursing**, and the **Doctor of Education (EdD) in Nursing Education**. These degrees represent the pinnacle of educational achievement in the nursing profession. While all three degrees prepare nurses for leadership roles, they cater to different career paths within the field. The DNP is practice oriented, focusing on applying research to improve healthcare outcomes, policy, and patient care delivery systems. The DNP-prepared nurses are equipped for executive roles in clinical settings, healthcare administration, policy-making, and advocacy, emphasizing the translation of research into practice to enhance patient care and health systems.

On the other hand, a PhD in Nursing is research focused, preparing nurses to contribute to the profession through original research that advances nursing science and practice. The PhD-prepared nurses often pursue careers in academia, research, and leadership positions where they can influence nursing education, policy, and practice through their research findings. Both doctoral degrees elevate a nurse's capacity to lead, innovate, and advocate for advancements in health care, whether through direct patient care improvements, policy reform, or the generation of new nursing knowledge. Pursuing a doctorate in nursing opens doors to opportunities for significant impact on the future of health care, shaping the direction of nursing practice and improving health outcomes on a broad scale.

For nurses interested in pursuing leadership roles in nursing education, the Doctor of Education (EdD) in Nursing Education is a specialized degree program that prepares them for careers as nurse educators, academic administrators, and leaders in educational institutions. The EdD in Nursing Education degree focuses on developing advanced competencies in teaching and learning, curriculum development, and educational leadership. The EdD nurses are equipped to shape nursing education programs, implement innovative teaching strategies, and conduct educational research. Their work supports the training and development of future nurses, ensuring educational standards and practices meet the evolving demands of health care. This degree helps nurses excel as educators in academic or healthcare settings, and they may pursue careers at colleges or universities, as nurse preceptors in clinical settings, or as leaders in educational program development for nurses.

Summary

18.1 Concepts of Leadership in Nursing

Leadership is the practice of guiding, influencing, and motivating individuals or groups toward achieving a common goal. Effective leadership in nursing is a multifaceted concept that includes a range of attributes, diverse leadership styles, and specific goals that are essential for guiding healthcare teams and improving patient care. Key attributes of successful nurse leaders include a strong commitment to excellence and professionalism, exceptional problem-solving skills, trustworthiness, integrity, accessibility, and creativity. These qualities enable nurse leaders to inspire their teams, encourage high standards of care, and adapt to the dynamic challenges of the healthcare environment.

Various leadership styles, each with distinct characteristics and applications, play a crucial role in nursing. Autocratic leadership is decisive and directive, suitable for emergency situations where quick action is required. Democratic leadership, in contrast, emphasizes collaboration and team input, fostering a participative and inclusive environment. Laissez-faire leadership offers autonomy and independence, ideal for experienced teams, while servant leadership focuses on empowering and uplifting team members. Quantum leadership adapts to rapid changes in health care, emphasizing innovation, whereas transactional leadership relies on established routines and rewards for performance. Transformational leadership inspires and motivates teams to exceed their potential, driving significant improvements in practice and care.

The goals of nurse leaders are comprehensive, extending beyond immediate patient care. They aim to develop a positive workplace culture that promotes employee satisfaction, mentorship, and professional growth. Nurse leaders also strive to align staff behaviors with the values of their healthcare facility, ensuring that care delivery is ethically and morally sound. Additionally, they serve as vital communication links, effectively bridging gaps between various stakeholders, including healthcare teams, patients, and administrative bodies.

18.2 Concepts of Management in Nursing

Whereas leadership focuses on the "why" and "what" of work, management focuses on the "how": that is, how can team members complete their tasks effectively and consistently each day? Effective nursing management is underpinned by a set of critical attributes that enable nurse managers to lead their teams successfully through the complexities of health care. These attributes include conflict resolution, employee engagement, mentoring, decision-making, and technical skills, which encompass both the hard skills of healthcare technology and the soft skills of communication and organization. Mastery of these attributes equips nurse managers to create a positive work environment and lead their teams effectively.

Understanding different management structures—centralized and decentralized—is crucial for nurse managers. Centralized management consolidates decision-making at the upper echelons of an organization, ensuring uniformity and streamlined processes. In contrast, decentralized management distributes decision-making authority more broadly, fostering innovation and flexibility. Each structure has its benefits and challenges, and choosing the appropriate model can significantly impact the efficiency and adaptability of nursing teams.

The ability to implement and manage change is another cornerstone of nursing management. Change theories, including Lewin's model and appreciative inquiry, offer strategies for guiding teams through transitions. Effective change management involves understanding the dynamics of change, planning and executing interventions thoughtfully, and addressing resistance through communication and support. This ensures that changes lead to improvements in patient care and team functioning.

Finally, the goals of nurse managers—planning, staffing, organizing, directing, and regulating—are integral to their role. Planning sets the direction for future actions, staffing ensures that the team has the right mix of skills, organizing arranges resources for efficiency, directing guides and motivates staff toward objectives, and regulating maintains standards and compliance. These goals are interconnected, each contributing to the overarching aim of delivering high-quality patient care while fostering a supportive and productive work environment.

18.3 Implementing Leadership and Management into Nursing Practice

Nurse managers and leaders play a pivotal role in ensuring that patient care is delivered efficiently, effectively, and compassionately. Their involvement in patient care coordination is fundamental, requiring them to orchestrate

various healthcare services and professionals to meet the comprehensive needs of patients. By facilitating interdisciplinary referrals and overseeing case management duties, they ensure that care is seamless across different specialties, enhancing patient outcomes and satisfaction.

Delegating patient care is another critical responsibility for nurse managers and leaders, allowing for the optimal use of the nursing team's skills and time. Understanding the scope of practice and determining the clinical ability of each team member are essential to delegate tasks appropriately. This ensures that patient care is provided safely and that each staff member works within their competencies, promoting a high standard of care and fostering a supportive work environment.

Supporting professional development within the nursing team is key to maintaining high levels of clinical competence and adapting to the rapidly changing healthcare landscape. Through mentorship and preceptorship programs, nurse managers and leaders play a direct role in the growth and development of their staff, offering guidance and learning opportunities that build on individual strengths and interests. Furthermore, promoting engagement with professional organizations and encouraging CE are vital for keeping the nursing team informed of the latest evidence-based practices and innovations in patient care.

Overall, the integration of effective patient care coordination, skilled delegation, and robust support for professional development underlines the multifaceted role of nurse managers and leaders in advancing healthcare quality and fostering an environment of continuous learning and improvement within nursing teams.

18.4 Certifications for Nurse Leaders and Managers

Certifications and advanced degrees in nursing serve as key components for nurses aiming to transition into leadership and management roles within healthcare settings. Differentiating between licensure, which is a requirement for practice, and certification, this module underscores the importance of voluntary certifications in demonstrating specialized competence and commitment to excellence in nursing. Board certification offers nurses the opportunity to validate their expertise in various clinical specialties, while leadership and management organization-specific certifications, such as CNML, Nurse Executive Certification (NE-BC), Nurse Executive, Advanced Certification (NEA-BC), and CENP, are tailored to underscore proficiency in navigating the complexities of healthcare leadership and administration.

Furthermore, the pursuit of higher education through master's and doctoral degrees in nursing equips nurses with the theoretical knowledge and practical skills necessary for high-level management and leadership positions. These degrees focus on advanced practice knowledge, strategic planning, financial management, policy development, and the application of evidence-based practice in leadership roles. Master's programs provide a foundation in nursing leadership, whereas doctoral degrees, including the Doctor of Nursing Practice (DNP) and Doctor of Philosophy (PhD) in Nursing, offer paths to practice-based leadership or research-focused roles, respectively. Collectively, these certifications and degrees form a comprehensive framework for professional development, preparing nurses to lead effectively in the ever-evolving healthcare landscape.

Key Terms

appreciative inquiry a theory that builds from what is already working within an organization through four stages of change management: discovery, dream, design, destiny

autocratic leadership a leadership style characterized by individual control over decisions with little input from team members

board certification considered an advanced nursing specialty certification where there are more eligibility requirements, such as a higher number of clinical experience hours, more education hours required, and more advanced testing

board of nursing (BON) a regulatory body tasked with overseeing the practice of nursing within its jurisdiction, typically a state or territory

case manager a nurse responsible for developing and coordinating care plans for patients with chronic illnesses or other long-term conditions

centralized management a top-down organizational structure in which higher-ranking managers have authority over lower-ranking managers

Certified in Executive Nursing Practice (CENP) a specialty certification designed for nurse leaders who are at the

executive level, overseeing the strategic, operational, and financial outcomes in healthcare organizations

Certified Nurse Manager and Leader (CNML) a specialty certification designed for nurse leaders in managerial positions who are responsible for the daily operations of a unit or service within a healthcare facility

continuing education (CE) ongoing educational activities

decentralized management a diffuse organizational structure in which authority is distributed among a variety of individuals and teams, regardless of rank

delegation the act of requesting staff members to perform tasks or procedures that are outside of their normal job but within the limits of their job description

democratic leadership a leadership style that values the input of team members and stakeholders in the decision-making process

Doctor of Education (EdD) in Nursing Education a specialized degree program that prepares nurses for careers as nurse educators, academic administrators, and leaders in educational institutions

Doctor of Nursing Practice (DNP) a practice-focused doctoral degree that emphasizes advanced clinical practice, leadership in healthcare systems, and evidence-based decision-making

Doctor of Philosophy (PhD) in Nursing a research-focused doctoral degree that emphasizes the generation of new nursing knowledge through rigorous scientific inquiry

interdisciplinary referral a request by a primary care provider to transfer a patient to a specialist

laissez-faire leadership a leadership style in which team members receive a high level of autonomy to make decisions, solve problems, and manage their work independently

leadership the practice of guiding, influencing, and motivating individuals or groups toward achieving a common goal

Lewin's model for change management a theory that effective change happens in three intentional steps: unfreezing, moving, refreezing

management the practice of determining what tasks need to be completed to accomplish a particular goal and ensuring all team members complete those tasks

Master of Science in Nursing (MSN) an advanced graduate degree that provides nurses with a higher level of education and specialization in various areas of nursing practice

mentor an experienced practitioner who serves as a role model or guide for a student or less-experienced colleague

Nurse Executive Certification (NE-BC) a board certification designed for nurse leaders who hold key administrative roles and are involved in shaping policies, procedures, and strategies that impact the delivery of care within a unit or team

Nurse Executive, Advanced Certification (NEA-BC) a board certification designed for experienced nurse leaders who have moved beyond the management of single units or teams to influence the operations of entire systems or organizations

patient care coordination organizing a patient's healthcare needs across providers, settings, and time

planned change in Lewin's theory, a deliberate, systematic process for introducing transformation into an organization or system

preceptor a licensed professional who coaches and supervises students during their clinical rotations

quantum leadership a leadership style is characterized by adaptability, flexibility, and a focus on fostering innovation in response to rapidly changing healthcare landscapes

scope of practice defined limits and parameters within which a professional is authorized to work, make decisions, and provide services

servant leadership a leadership style that prioritizes the needs of team members and fosters a culture of care, empathy, and community

specialty certification official recognition of a nurse's expertise in a particular area of nursing

transactional leadership a leadership style characterized by clear structures and rules, where performance is closely monitored and feedback consists of rewards for meeting objectives or corrective actions for failing to meet them

transformational leadership a leadership style aimed at inspiring and motivating team members to exceed their own expectations and capabilities

Assessments

Review Questions

1. What is an essential attribute for effective leadership in nursing?
    a. an advanced degree
    b. flexibility in approach
    c. excellent clinical skills
    d. the ability to work in isolation

2. In a situation where rapid decision-making is required to save a patient's life, what leadership style is most appropriate?
    a. autocratic
    b. democratic
    c. laissez-faire
    d. servant

3. A nurse leader actively encourages her team to participate in decision-making, provides mentorship opportunities, and regularly organizes professional development workshops. What goal is this nurse leader primarily pursuing?
    a. role modeling desired behaviors
    b. serving as a communication liaison
    c. creating and developing new leaders
    d. promoting a culture of patient-centered care

4. What is an example of a nurse manager demonstrating effective mentoring skills?
    a. organizing a meeting to resolve a conflict between two team members
    b. analyzing staff shift patterns to optimize coverage and reduce overtime
    c. setting up a weekly review session with a new nurse to provide feedback
    d. implementing a new software system to streamline patient documentation

5. What management structure encourages nurse managers to distribute decision-making authority across various levels of the nursing team?
    a. autocratic
    b. centralized
    c. decentralized
    d. transactional

6. According to Lewin's model, what is the first step in effectively implementing change within a nursing team?
    a. appreciating
    b. moving
    c. refreezing
    d. unfreezing

7. What is an example of a nurse manager focusing on the goal of regulating?
    a. conducting a monthly audit of the team's budget
    b. mapping out their annual objectives for personal growth
    c. developing a comprehensive onboarding program for new hires
    d. creating a flexible staffing model to accommodate fluctuations in admissions

8. What is the main role of a case manager in patient care?
    a. supervising the care of all patients within a healthcare setting or facility
    b. conducting research to implement evidence-based practices in patient care
    c. teaching patient care techniques to nursing students during clinical rotations

d. coordinating individualized care plans for patients with long-term conditions

9. What must nurse managers consider when delegating patient care?
   a. the scope of practice of the delegatee
   b. the individual preferences of the delegatee
   c. the length of time that the delegatee has been working
   d. the place of the delegate within the organizational structure

10. What is an example of continuing education for a nurse manager?
   a. supervising nursing students during a clinical rotation
   b. participating in a workshop to develop leadership skills
   c. mentoring a colleague who was recently transferred to the team
   d. advocating for subordinates who want more professional development

11. What is a key difference between licensure and specialty certification for nurses?
   a. Licensure focuses on clinical skills, whereas specialty certifications assess leadership abilities.
   b. Licensure is mandatory for all nursing positions, whereas specialty certifications are voluntary.
   c. Licensure is the first level of higher education, whereas specialty certifications are the highest level.
   d. Licensure is regulated by national nursing organizations, whereas specialty certifications are offered by state nursing boards.

12. What type of certification is most appropriate for nurses who are responsible for the daily operations of a unit within a hospital?
   a. Certified in Executive Nursing Practice (CENP)
   b. Nurse Executive Certification (NE-BC)
   c. Certified Nurse Manager and Leader (CNML)
   d. Nurse Executive, Advanced Certification (NEA-BC)

13. What advanced degree is focused on applying research to improve healthcare outcomes, policy, and patient care delivery systems?
   a. Bachelor of Science in Nursing (BSN)
   b. Master of Science in Nursing (MSN)
   c. Doctor of Nursing Practice (DNP)
   d. Doctor of Philosophy (PhD) in Nursing

Check Your Understanding Questions

1. How does a commitment to professionalism manifest in a nurse leader's daily activities? Provide an example.
2. Describe a scenario in which a servant leadership style would be particularly effective in nursing. Explain your thinking.
3. Why is promoting a culture of patient-centered care an important goal for nurse leaders?
4. List two essential attributes needed for effective nursing management.
5. What is the difference between centralized and decentralized management?
6. Briefly explain the four stages of appreciative inquiry.
7. List two functions of effective nurse managers, and briefly explain why each goal is important.
8. Describe the role of interdisciplinary referrals in patient care coordination.
9. Identify two of the five "rights" of delegation and explain why it is important for nurse managers to uphold them.
10. Identify a professional nursing organization and explain why a nurse manager would likely belong to it.

11. What is the purpose of specialty certification for nurses?
12. Name two certifications specifically designed for nurse leaders, and briefly describe the focus of each.
13. Describe the primary goal of pursuing a Doctor of Nursing Practice (DNP) degree for a nurse interested in leadership.

Reflection Questions

1. Consider a time when you observed a nurse leader demonstrating creativity in problem-solving. How did this impact the team and patient care?
2. In a busy hospital unit, there has been an unexpected surge in patient admissions. The existing staff is feeling overwhelmed, and there is a need to quickly adapt to the increased workload while maintaining high standards of patient care. Choose two leadership styles. Describe how each style would likely respond to this scenario, and then decide which style is better suited for the scenario and why.
3. Reflect on the importance of nurse leaders serving as communication liaisons. How does this role impact team performance and patient outcomes?
4. Describe how a nurse manager's effective decision-making skills can impact patient care in a high-pressure situation. Provide a specific example.
5. How might a nurse manager operating in a decentralized management structure approach the implementation of a new patient care protocol differently than in a centralized structure?
6. Identify a strategy a nurse manager might use to overcome resistance to change among their team when introducing a new healthcare technology.
7. How might a nurse manager implement the function of regulating in their daily operations?
8. Reflect on a time when effective patient care coordination made a significant difference in a patient's outcome. What role did the nurse manager or leader play in this situation?
9. Think about a scenario where delegation of patient care was mishandled. What were the consequences, and how could applying the "rights" of delegation have prevented the issues?
10. How can nurse managers and leaders support their staff's participation in continuing education and professional development?
11. Reflect on how obtaining a certification in a nursing specialty could influence your career path and professional development.
12. Considering the leadership and management certifications available, how do you envision these certifications fitting into your career goals?
13. Reflect on the value of pursuing advanced degrees, such as an MSN or DNP, in achieving your leadership and management goals in nursing.

What Should the Nurse Do?

At a regional rehabilitation center, the nursing staff has been experiencing low morale. One key issue identified through an anonymous survey is poor communication within the team. Many nurses feel that their feedback and concerns about patient care and workplace challenges are not being heard or addressed effectively. Additionally, there is a sense of stagnation among the staff, as there seem to be limited opportunities for professional growth and career advancement within the center. The newly appointed head nurse, Alex, is tasked with addressing these issues to improve the work environment and staff satisfaction.

1. How can Alex utilize effective leadership attributes to improve communication and address the concerns of the nursing staff?
2. Which leadership style might be most effective for Alex to encourage professional growth and career advancement among the nursing staff and why?
3. As a nurse leader, what goals should Alex set to enhance employee satisfaction and overall team

performance in this scenario?

Maya is a nurse manager at a community health clinic that serves a diverse population. The clinic has recently decided to focus on improving patient education regarding chronic disease management, aiming to enhance patient outcomes and reduce hospital readmissions. As part of this initiative, Maya is tasked with leading her team through the necessary changes, which include developing new patient education materials, training staff on the latest best practices in chronic disease management, and reorganizing the clinic layout to accommodate a new patient education area.

4. Given the scenario, how should Maya utilize her conflict resolution and communication skills to address any concerns or resistance from her team regarding the new focus on patient education?
5. How might the choice between a centralized and decentralized management structure affect the implementation of the new patient education initiative in Maya's clinic?
6. According to Lewin's model of change management, what strategies should Maya employ to implement and manage the change involved in focusing on patient education?
7. Considering the goals of nurse managers, how can Maya effectively plan and organize the resources at the clinic to support the new focus on patient education for chronic disease management?
8. Jordan is a nurse manager in a large urban hospital's emergency department (ED). Recently, the hospital initiated a project to improve patient outcomes and efficiency in the ED. Jordan is tasked with leading this project, which involves integrating advanced nursing certifications, leveraging leadership skills, and enhancing educational opportunities for the nursing staff. The project's goals include reducing wait times, improving patient satisfaction scores, and increasing staff engagement and retention. Jordan plans to encourage staff to pursue certifications relevant to emergency nursing, implement leadership development workshops, and facilitate access to continuing education programs. Given the project goals, how could Jordan encourage her team to pursue board certification in emergency nursing, and what impact might this have on the project outcomes?

Competency-Based Assessments

1. Recall what you read about the pros and cons of each leadership style. Create a list comparing each style and note nursing situations where each style would be most effective.
2. Reach out to a nurse leader in your community and ask them what leadership style they use most often and why.
3. Choose a style of nursing leadership that resonates with you and describe its influence on your work.
4. Research the reasons for resistance to change in health care. Discuss its potential consequences for patients and strategies that nurse leaders can use to address the problem.
5. Reach out to a nurse leader in your community and discuss a change, the process used, and the outcome.
6. Make a table comparing the different management structures.

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CHAPTER 19
Oxygenation and Perfusion

FIGURE 19.1 The respiratory system and cardiovascular system together form the cardiopulmonary system. Nurses support patients' respiratory needs in many ways, including by providing them with oxygen, as this critical care nurse is doing for a patient with COVID-19. (credit: "Navy Medical Team Suports Louisiana Hospital" by Mass Communication Specialist 2nd Class Michael H. Lehman/Flickr, Public Domain)

CHAPTER OUTLINE

19.1 Respiratory System
19.2 Cardiovascular System
19.3 Factors Affecting Cardiopulmonary Function
19.4 Management of Impaired Cardiopulmonary Functioning

INTRODUCTION Basic life support training uses the first three letters of the alphabet to quickly refer to the most crucial lifesaving actions for a patient who experiences an arrest situation: assessment of the patient's airway, breathing, and circulation. Until a few years ago, these were referred to as they appear alphabetically—A-B-C. The 2010 American Heart Association (AHA) guidelines changed the order to reflect circulation as the first response, followed by airway and breathing, so it is now C-A-B (AHA, 2020).

In either order, the respiratory system is associated with two-thirds of the immediate and emergent lifesaving response recommended for cardiac and/or respiratory arrests, which suggests its importance. The cardiovascular system is also critical because it is the adequacy of the heart's pumping action and vascular circulation that delivers oxygen (O_2) and other nutrients. Without adequate perfusion, all body systems and components are at risk for significant compromise and ultimately cell death. Consequently, the first three letters of the alphabet are certainly appropriate as quick and recognizable identifiers of the most necessary immediate lifesaving measures to take in

hopes of patient survival.

19.1 Respiratory System

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the structures and functions of the respiratory system
- Recognize the physiology of the respiratory system
- Describe the regulation of the respiratory system

The primary purpose of the respiratory (or pulmonary) system is gas exchange, which is necessary to support human life. The **gas exchange** happens where the capillaries and alveoli meet, with a very thin membrane between them—the capillary-alveolar bed (or membrane). The process of breathing—inspiration (inhaling) and expiration (exhaling)— provides O_2 and removes CO_2 waste. The cardiovascular system provides the means of transport for O_2 and other nutrients and the removal of waste products. The blood vessels provide the medium for the exchange of gases by the pulmonary circulation through interaction with respiratory alveoli. The joining of these systems as the **cardiopulmonary system** combines the actions of cardiac **perfusion** (vascular circulation powered by the pumping heart, which delivers O_2 and other nutrients to the body) with **respiratory ventilation** to provide the essential processes of oxygenation and perfusion. Prior to considering the complexity of the combined cardiopulmonary system, each system is explored individually, and these concepts are investigated more deeply later in this section.

This chapter also considers dysfunctions of the cardiovascular and pulmonary systems, diagnostics for recognition and assistance in planning care, and management of patients, particularly nursing actions and skills. The following section explores the structure and function, physiology, and regulation of the respiratory system.

Structures and Functions of the Airway

What is considered the airway consists of structures from the head and face through the pulmonary cavity in the chest (Figure 19.2). The study of the structure (anatomy) of the airway tends to be considered as two components: upper and lower airways. The upper airway extends from the sinuses and nose through the **trachea** to the **carina**, where the airway bifurcates into left and right bronchi and continues into the lungs. This helps to focus on the different locations of the sections of the airway, as well as the normal function of each, and the variation of pathophysiology when things go awry. Disturbed function may arise from a variety of issues, including microbial invasions, exposure to noxious or toxic gases, and injuries. This section explores the structures of the upper and lower airways and their function, physiology of the respiratory system, and respiratory system regulation.

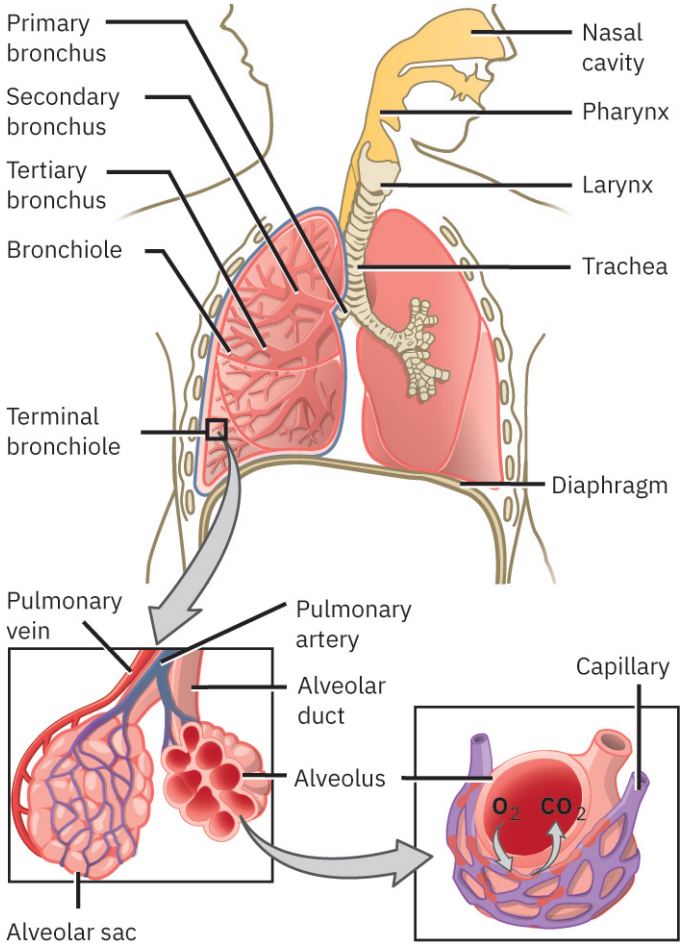


FIGURE 19.2 Air enters the respiratory system through the nasal cavity and pharynx and then passes through the trachea and into the bronchi, which brings air into the lungs. (credit: modification of work from *Biology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Upper Airway

The upper airway includes the trachea as its lowest part and structures above including the sinuses, nose, **pharynx**, **epiglottis**, **glottis**, and **larynx**. Behind the nose is a space that includes the **nasal turbinates** or conchae, which are composed of folded mucosal tissues. The nasal turbinates protect the airway from inhaled particles and increase the surface area in the nasal cavity, helping to warm and humidify inhaled air. The **sinuses** are bilateral cavities named based on the bones where they are located, including frontal (above each eye, maxillary), posterior to the maxillae bilaterally, sphenoid (near the pituitary gland and optic nerves and the sphenoid bone of the eye sockets), and the ethmoid (several small air-filled cells comprising front, middle, and rear groups, each with independent openings to the nasal cavity). The mucus lining the sinuses helps to humidify the air we breathe, and cilia lining the sinuses (hairlike fibers) help to trap and remove excess secretions and foreign objects from the upper airway.

Three regions comprise the pharynx:

- the **nasopharynx**—behind the turbinates at the posterior of the nasal cavity
- the **oropharynx**—located at the posterior of the oral cavity
- the **laryngopharynx**—below the oropharynx, extending to the larynx, familiarly referred to as the voice box

The epiglottis is a cartilaginous structure, which rests its loose end on the glottis, thereby protecting the trachea. When a person swallows, the epiglottis closes the opening from the **esophagus** (part of the gastrointestinal tract, which sits posterior to the trachea), thereby preventing food or fluid from flowing into the trachea. Located within the glottis are false and **true vocal cords**. The **false vocal cords** are also known as vestibular folds and are composed of mucus membrane tissue. True vocal cords have muscular attachments to the thyroid and to laryngeal cartilage; the movement of the inner aspects of the vocal cords provides the mechanism for sound production.

The trachea, commonly referred to as the windpipe, provides the pathway from the upper to lower airways. The esophagus carries fluids and chewed foods from the oral cavity to the stomach. A combination of cartilage and connective tissue gives the trachea its shape and maintains it open for the passage of air. Cilia line the trachea, continuing the process of trapping foreign objects and allowing for their removal, in the same fashion as in the higher structures of the upper airway. Where the trachea bifurcates into the left and right mainstem bronchi is the location of the carina. The carina is the border of the upper and lower airways.

REAL RN STORIES

Endotracheal Suctioning

Nurse: Danisha, RN
Clinical setting: Intensive care unit (ICU)
Years in practice: Less than one year at the time
Facility location: Dallas, Texas

As a student, I took an elective course between junior and senior years of nursing school—it was a course modeled after senior capstone and included 400 clinical hours with a preceptor. My placement was night shift in the ICU. My first night's patient was an older adult Asian female who was intubated and on mechanical ventilation; she was on pressors to maintain her blood pressure adequately. I remember coming in with lofty goals in mind, and when I saw this patient with all the tubes and wires and the monitor and ventilator, I was overwhelmed. One of the first tasks necessitated by the patient's status was to suction her through an inline suction catheter that passed through the endotracheal tube. She was coughing, and my nurse preceptor showed me how to advance the suction catheter through the tube; she demonstrated the suction control, and while withdrawing the catheter, she suctioned the patient of moderate secretions.

As the patient recovered between passes, she asked how I would know if the catheter had advanced to touch the carina. At that point in my nursing education, I had no idea. "She'll cough," she told me, "The carina is sensitive, so when it's touched, the patient will cough, and you've gone too far. Ideally, you want to pay attention to how far that is, so you don't go that far again." Through over ten years in the ICU, I never forgot that recommendation and tried not to stimulate the discomfort of hitting the carina when suctioning.

Lower Airway

The lower airway consists of structures below the carina. The bronchi are the major structures of the lower airway and begin with the bifurcation of the right and left mainstem bronchi, which enter into the right and left lung, respectively. Subsequently, the mainstem bronchi continue paths through the lungs as the primary, secondary, and tertiary bronchi, becoming smaller, and branching further throughout the lungs. Bronchi continue to be lined with cilia and goblet cells for mucus production and have cartilaginous rings like the trachea, to provide support and prevent airway collapse.

From the tertiary bronchi, the branching of the airway becomes even smaller, as they are identified as bronchioles. These continue to their smallest form as terminal bronchioles; at this point, the airway is no longer supported by cartilage, and the muscles comprising the walls can dilate and constrict to control the flow of air. The tiny terminal (or respiratory) bronchioles reach alveolar ducts, which are also a combination of smooth muscle and connective tissues, where alveoli (the minuscule, round sacs of air involved in gas exchange) cluster together. These clusters of alveoli are where the most common type I alveolar cells and the smallest capillaries of the bloodstream exchange gases (primarily O_2 and CO_2) through a very thin alveolar-capillary membrane (Ball et al., 2023). Another alveolar cell type (type II) is responsible for the production of surfactant. A phospholipid substance that prevents the collapse of alveoli by reducing surface tension is called **surfactant**. The third type of alveolar cells, alveolar macrophages, remove foreign substances and waste products from this delicate and essential region.

Lungs

The lungs are responsible for respiration and house the smaller structures involved in the process of ventilation. The right and left lungs are slightly different in structure: the left lung is shaped to include the cardiac notch, which provides space for the heart. The left lung has two lobes: upper and lower; the right lung contains three lobes:

upper, middle, and lower. Normal, healthy lungs are supple and yield in size and shape to the demands of respiration, including **compliance**, the ability to accommodate deep and shallow breaths, and elastic recoil, or the ability to bounce back to normal size and shape after the expansion of inhaling, during exhalation. Lungs are designed to be air-filled. When taxed by disease, fluid accumulation, or exposure to toxic or noxious gases, the lungs can lose effectiveness, and the respiratory processes may become compromised.

Within the lungs are the structures of the lower airway, including the right and left bronchi, primary, secondary, and tertiary, bronchioles, alveoli, and the alveolar-capillary bed, where the cardiopulmonary system interacts, and gases are exchanged. Deoxygenated blood undergoes removal of CO_2, and O_2 is brought into the system. These processes are studied in more detail in the next section, through exploration of the physiology of the respiratory system.

Physiology of the Respiratory System

The exchange of gases, primarily O_2 and CO_2, is the purpose of the respiratory system. The removal of CO_2 during expiration also helps to regulate the body's acid-base balance. Acid-base balance is measured by pH level. The body is sensitive to alterations in pH, and there is a narrow range of normal for pH: 7.35 to 7.45. In circumstances when the body's pH has fallen out of range, the respiratory system is able to adjust quickly in an effort to normalize it (Daniels, 2020). By increasing the rate and depth of respirations, excess CO_2 is released through exhalation, and an acidic pH (less than 7.35) may be improved. An alkalotic pH (over 7.45) may be corrected by shallow, slow breaths, allowing the accumulation of CO_2 to bring pH closer to normal.

Cilia and mucus throughout the respiratory system provide mechanisms for isolating and removing foreign substances, such as inhaled gases and microbiota. Cilia move pathogens and other inhaled particles that become trapped in mucus out of the lungs and into the bronchi, where expectoration is assisted through coughing.

The lungs also play a role in the conversion of angiotensin I to angiotensin II, in conjunction with the renin-angiotensin-aldosterone system (RAAS) (Figure 19.3) (Fountain et al., 2023). Angiotensin II is recognized for its powerful vasoconstriction properties and therefore increases blood pressure. Angiotensin I is produced by a combination of the enzyme renin from the renal system and angiotensinogen. Angiotensin I is not a potent vasoconstrictor, but when combined with angiotensin-converting enzyme (ACE), it is transformed into angiotensin II and increases blood pressure by its properties of vasoconstriction. Capillaries within the lungs are a major location for ACE production.

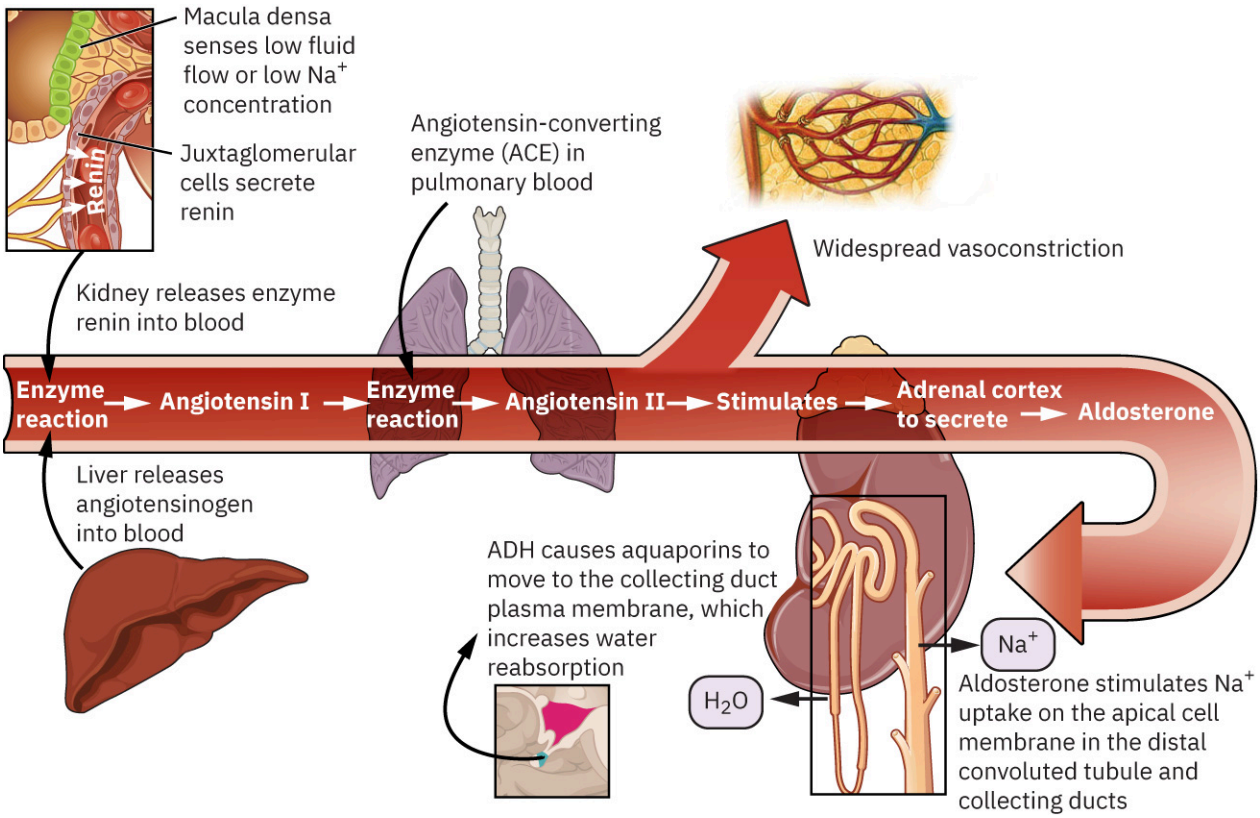


FIGURE 19.3 The renin-angiotensin-aldosterone system regulates fluid output and blood pressure. (credit: modification of work from *Anatomy and Physiology*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Oxygenation involves interactions between the respiratory and cardiovascular systems, including air movement through the lungs, where O_2 and CO_2 are exchanged through the alveoli and capillaries as the respiratory and circulatory systems connect and interact at the alveolar-capillary bed. Physiological processes involved include **ventilation** (the movement of air in and out of the lungs) and perfusion. This combination of respiratory ventilation and cardiovascular perfusion provides O_2 (and other nutrients) to the body's tissues and removes waste products including CO_2 from the tissues.

The part of the respiratory cycle whereby the diaphragm and intercostal muscles contract, which enlarges the space within the thorax, is called **inspiration**. This enlargement lowers the pressure within the alveoli, and air flows into the lungs. During **expiration**, the muscles that expanded the thoracic cavity now relax, and elastic recoil reduces the pressures in the lungs and surrounding thorax. The pressure within the intrapulmonary system is momentarily higher than atmospheric pressure, and air is passively exhaled from the lungs. Lungs that are compliant and retain the properties of elastic recoil are able to increase and decrease in size and shape with each respiratory cycle (Figure 19.4).

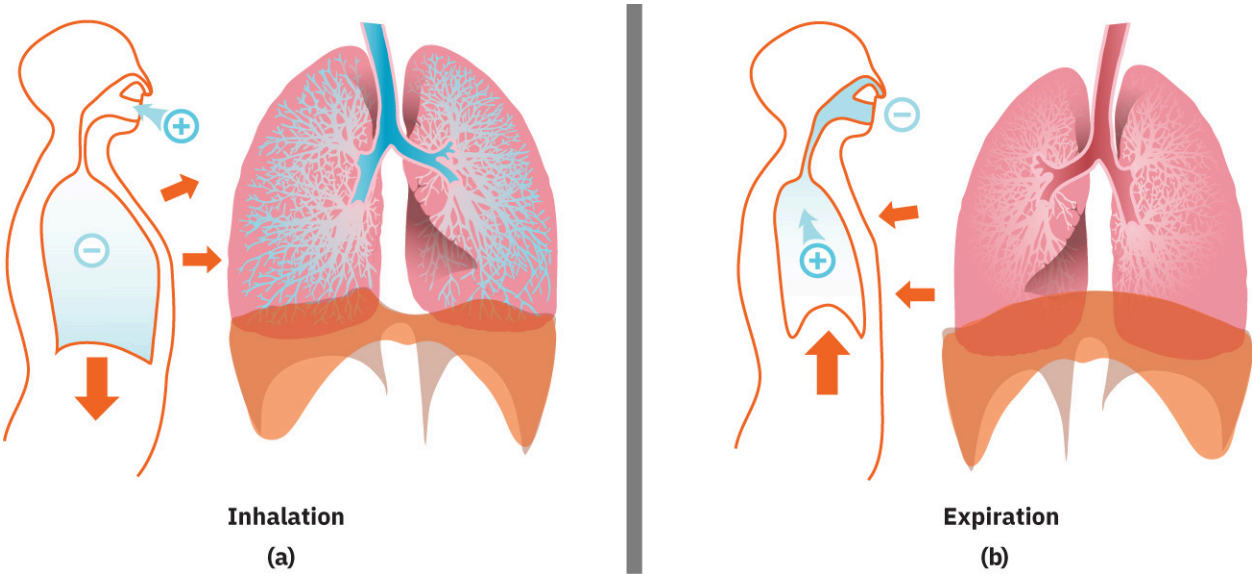


FIGURE 19.4 (a) Inhalation (breathing in) and (b) expiration (breathing out). The orange arrows indicate chest and diaphragm movement as air is inhaled and exhaled. (credit: modification of work from *Biology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Potential problems of the respiratory system include any changes to the normal structure and/or function of any part of the system. This may include injuries, such as rib fracture(s) or burns to any part of the airway. Pathophysiological changes from diseases such as asthma or chronic obstructive pulmonary disease can alter the structure of the airways and the processes and effectiveness involved in gas exchange.

Gas Exchange in Alveoli

Alveoli are found in groups clustered around alveolar ducts, and when inflated, they resemble a cluster of grapes. There are three types of alveolar cells: type I, type II, and alveolar macrophages (Naeem et al., 2022). Type I cells cover approximately 90 percent, or 70 square meters, of surface area within the lungs. These cells are responsible for gas exchange (Figure 19.5). After inspiration, O_2 travels across the capillary-alveolar bed and attaches to hemoglobin, where it is transported throughout the bloodstream and to the body tissues. At the tissues, O_2 is released from the hemoglobin and taken up by the tissues as needed. It is also here that the waste product, CO_2, returns from the body by diffusion (a transport process that involves molecular movement driven by a concentration gradient) into the bloodstream and subsequently the lungs, where it is ultimately removed from the body by exhalation. The respiratory membrane is extremely thin, only about half of a micrometer, which enables gases to easily move to and from the bloodstream and air space within the lungs.

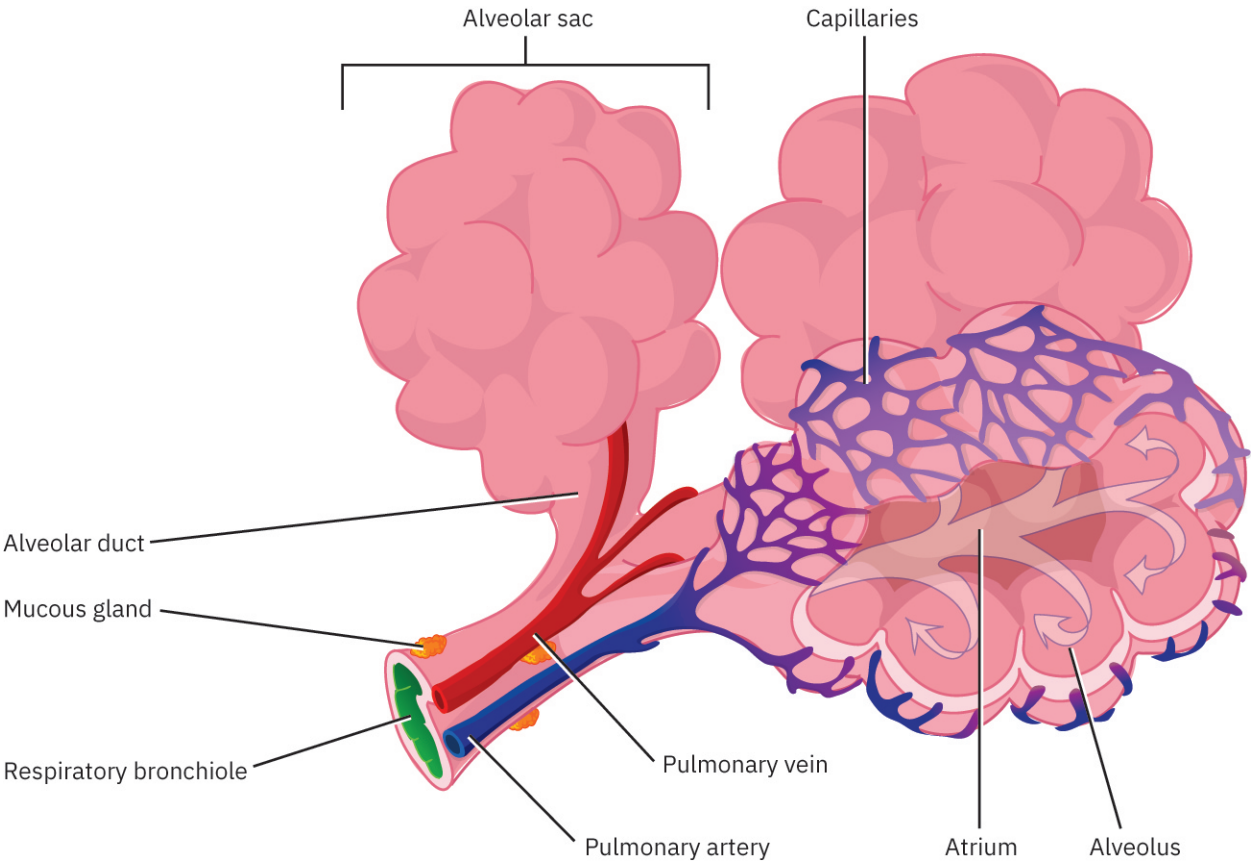


FIGURE 19.5 In the structures at the alveolar-capillary bed are where gas exchange occurs. (credit: modification of work from *Biology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Learn more about gas exchange (https://openstax.org/r/77GasExchange) with this resource that includes explanations, images, and a video.

For alveoli to easily reinflate, or to maximize inflation, surfactant is synthesized and released from type II alveolar cells. These cells are located among the type I cells and are made up of proteins and phospholipids. By coating the exterior of the alveoli, the cells reduce the surface tension, which prevents collapse (Naeem et al., 2022). Surfactant is produced by deep breaths, such as sighs, yawns, sobs, and gasps. Deep breaths often inspire coughing, and coughing causes deep breaths, which fosters continued production and release of surfactant and prevention of **atelectasis** (alveolar collapse). For this reason, patients are encouraged to cough and deep breathe when inspiration is limited. Nurses and respiratory therapists (RTs) instruct patients on the use of the incentive spirometer, which involves slow, deep breaths, often subsequent coughing, and tends to improve pulmonary function.

The third type of alveolar cell, the macrophages, like phagocytic cells elsewhere in the body, provide the immune system function of phagocytosis (Naeem et al., 2022). Alveolar macrophages are able to travel within the alveolar areas and isolate, consume, and remove foreign particles that have invaded the alveolar region. These cells are not involved directly in the gas exchange process.

LIFE-STAGE CONTEXT

Incentive Spirometer Patient Education

With advanced age, some people experience hearing deficit or even total hearing loss (deafness). Older adults may

also experience one of the cognitive impairments related to dementia. These sensory or cognitive deficits can influence a patient's comprehension of a nurse's teaching because the patient is unable to hear or understand the instructions.

Use of the incentive spirometer can be confusing to patients and requires education by the nurse and/or respiratory therapist to properly describe its use. In addition to telling the patient how to use the device, it is recommended the nurse evaluate the patient's use of the incentive spirometer by demonstration. Often, patients assume that since the mouthpiece is attached to a strawlike hose, they should blow into it instead of the correct action of inhaling deeply through the mouthpiece. The device includes numbers representing volumes, and there is an indicator (piston) that moves with the patient's inhalation (Figure 19.6). Nurses often write a line with a marker to indicate a goal volume for a particular patient.

Patients with hearing impairment or cognitive deficit may require a more active explanation of the use of the incentive spirometer, including a demonstration by the nurse (using an incentive spirometer dedicated to such patient education), which may also include gestures and dramatic movements to illustrate deep intake of breath through the mouthpiece instead of a blowing action. Again, the patient should provide a return demonstration so the nurse is able to assess proper understanding and use of the incentive spirometer. These patients may also respond well to having a goal indicated by a line on the device, and written reminders as to how often and how many inhalations should be done may be helpful, depending on the type and extent of impairment.

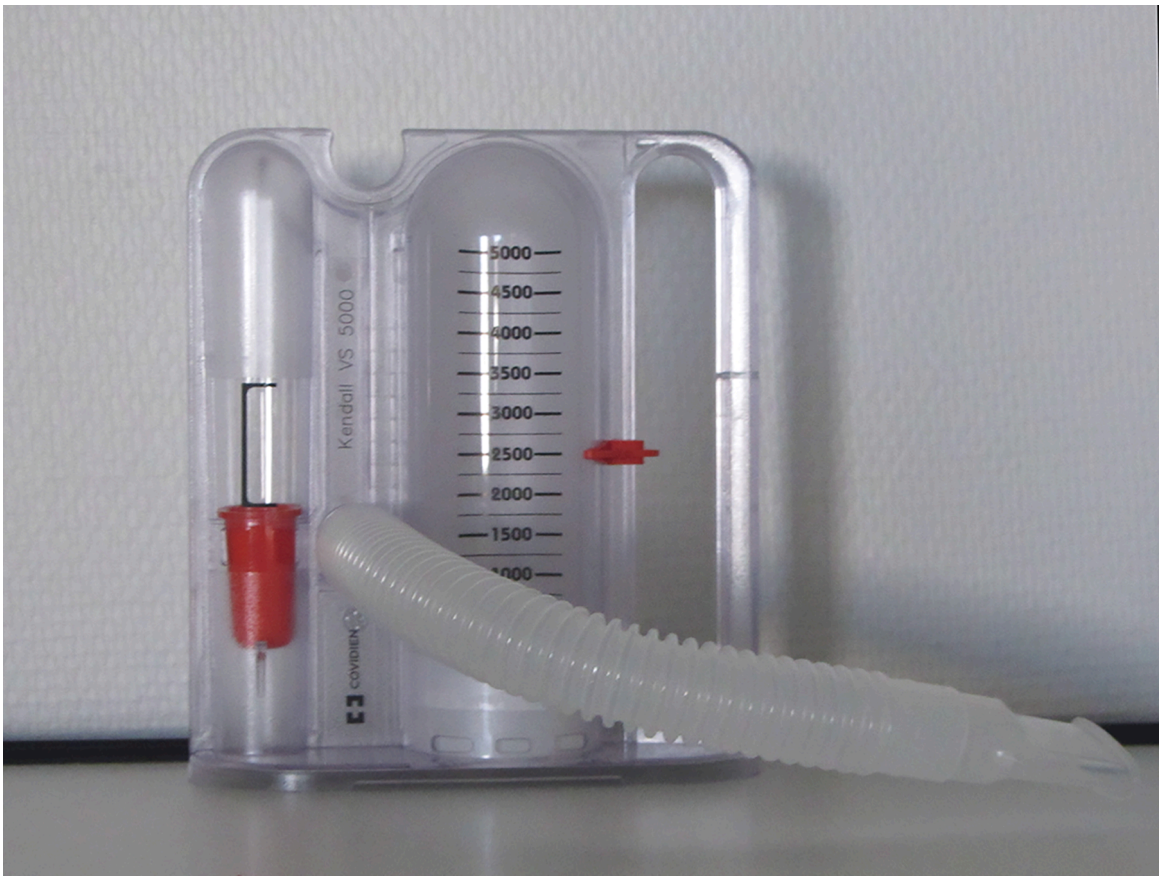


FIGURE 19.6 Explaining the incentive spirometer's components and demonstrating its correct use can help patients understand the device's importance. (credit: modification of work "Kendall Respiflo VS 5000, Atemtrainer, Incentive Spirometer" by Stefan Bellini/ Wikimedia Commons, Public Domain)

Respiration

The term **respiration** is a rather general term, often synonymous with the word *breathing*. It also may be used interchangeably with the term *ventilation*, as it involves inhalation and exhalation. Respiration is associated with the process of gas exchange, the primary purpose of the respiratory system.

Respiration is a basic function, generated by the neurological system, with control centers within the medulla oblongata and pons. Regulation by these systems, including actions stimulating the length and depth of each breath, is controlled by opposing actions of the apneustic and pneumotaxic centers, in efforts to maintain homeostasis, or stability, throughout the body.

Respiration is a critical function and is included as one of the vital signs, which most commonly include respiratory rate, heart rate, temperature, and blood pressure. In addition to the respiratory rate, nursing assessment of the respiratory system also includes auscultation of breath sounds and observation of depth and regularity of breathing, symmetry, whether the patient relies on the use of accessory muscles to breathe, their desired position, and how they breathe (e.g., pursed lips, gasping, apneic pauses), as well as apparent anxiety. A noninvasive device called a pulse oximeter measures saturation of hemoglobin with O_2 and can be a valuable respiratory assessment tool. Arterial blood gas (ABG) testing offers important data in some circumstances of respiratory compromise and potential failure, but ABGs are invasive and typically considered painful. Additional diagnostics may include chest radiographs (x-rays), computed tomography or magnetic resonance imaging, ventilation-perfusion (V/Q) scan, and a variety of pulmonary function tests, depending on the diagnosis being explored.

Diffusion

Diffusion is a transport process that involves molecular movement driven by a concentration gradient. Molecules move from areas of high concentration to those with low concentration. In the case of respiratory gas exchange, diffusion is the primary process for the transport of gas molecules, moving the gas that is in high concentration to a low concentration area. Concentration gradients and the diffusion process are responsible for the exchange of gas between blood, with a high concentration of CO_2 and low O_2 concentration from the body, and the air in the lungs, which is high in O_2 concentration and has low CO_2 levels. The diffusion process is often very dynamic, as is the case in the respiratory system, as the molecules are not static. The concentration of gases changes with each breath and as tissues take up O_2 and release wastes.

Perfusion

Perfusion, as previously defined, is associated with the circulatory system and is evidenced by the cardiovascular system's delivery of O_2 and nutrients to body tissues. Adequate perfusion indicates there is enough pumping action of the heart, which is referred to as **contractility**, and enough volume in the body's vascular system, as shown by a normal blood pressure. Under conditions of adequate perfusion, patient assessment includes vital signs within normal ranges, normal or baseline mentation, pulses typified as 2+ (normal), no dependent edema noted, breath sounds that are clear without adventitious sounds, and skin that is warm, dry, and of normal color for race.

Inadequate perfusion tends to involve a variety of signs and symptoms. Examples of poor perfusion include deterioration of vital signs, which may include **tachycardia** (heart rate over 100 beats per minute), hypotension (low blood pressure, e.g., under 90 systolic), abnormal body temperature, **tachypnea** (respiratory rate over 20 breaths per minute), mental status or level of consciousness changes that may range from slight confusion to lethargy to unconsciousness, peripheral edema, potentially adventitious breath sounds like crackles, and skin that feels cool, clammy, and is notably changed in appearance from normal to demonstrating pallor.

Respiratory changes due to lack of perfusion are particularly important, as the respiratory system is often the first to display signs and symptoms indicative of this negative status change. The signs emanating from the respiratory system may be obvious, such as tachypnea or crackles, or may be reflected in a neurological change, such as a change in mental status.

Regulation of the Respiratory System

The respiratory system is controlled by the neurological system. As a basic function of life, respiration is an involuntary effort. Control of several involuntary respiratory and cardiovascular functions, and some movement of the muscular system, originates within the brainstem and cerebellum.

The medulla oblongata, the primary respiratory center in the brainstem, is responsible for signaling to respiratory muscles that allow the process of ventilation. The two sets of respiratory muscles are the ventral and the dorsal respiratory groups, and they cause muscle movement for expiration and inspiration, respectively. Some reflex responses like sneezing, vomiting, and coughing are also under the control of the medulla.

The respiratory rate is controlled by the pons. There are two centers within the pons that are involved in this

process. First is the apneustic center, which is involved in signals for length and depth of breaths, or **tidal volume**. The intensity of respirations is limited by stretch receptors of the muscles involved in breathing and by further signaling from the pneumotaxic center. Inhibitory signals from the pneumotaxic center also provide fine-tuning of respiratory rate control by limiting the action of the phrenic nerve. The actions of the pneumotaxic center lead to diminished tidal volume.

LINK TO LEARNING

Watch the video "Neural Control of Breathing: Respiratory System" (https://openstax.org/r/77NeurConBreath) and make note of the importance of C-5 as the narrator says, "C-5 Keeps You Alive." Also, notice the impact of thoracic nerves on breathing.

Dyspnea

The medical term for the subjective feeling of shortness of breath or difficulty breathing is dyspnea. Patients can be asked to rate their dyspnea on a scale of zero to ten, similar to using a pain rating scale. The feeling of dyspnea can be very disabling for patients. Nurses can objectively assess the response to the experience by noting a climbing respiratory rate, shallow breaths, the use of accessory muscles, and whether the patient is able to speak only one word between breaths. Certain pathological changes to normal physiology, like asthma, heart failure (HF), chronic obstructive pulmonary disease (COPD), **hypercapnia** (elevated CO_2), and anxiety, may contribute to dyspneic episodes. Interestingly, anxiety can both cause and result from dyspnea, as struggling to breathe is one of the most helpless, frightening experiences most people can have.

Episodes of dyspnea may or may not require intervention from the healthcare team. Sometimes, the symptoms are mild and transitory, resolving as quickly as they began. However, if the patient's respiratory status is compromised, prompt action may be necessary. Observations and assessments of respiratory deterioration may include a falling O_2 saturation as seen on pulse oximeter, exhaustion from sustained tachypnea and use of accessory muscles, intolerance of lying flat, and decreased breath sounds.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Patient with Dyspnea

Mr. Wu is a 73-year-old Asian immigrant who moved to California when he was 27 years old. Mr. Wu has been smoking two packs of cigarettes a day since he was 15 years old and was diagnosed with emphysema ten years ago. He presents to the emergency department stating he cannot breathe. Mr. Wu is sitting upright on the gurney and leaning forward onto the bedside table.

The nurse asks about his health history, and Mr. Wu is only able to say one word before he has to pause to try to catch his breath. The nurse auscultates Mr. Wu's breath sounds and can barely hear inspiratory and expiratory sounds from either front or back.

Mr. Wu's vital signs are as follows:

- HR 118 beats per minute
- BP 162/94
- RR 26 breaths per minute
- T 99.3°F
- SaO_2 75 percent

The nurse considers this patient's subjective and objective presentation and determines the following: Important information includes medical history and vital signs (HR, BP, RR, SaO_2). Priority information includes SaO_2 and severely diminished breath sounds. Ventilation and oxygenation are the nurse's immediate concern.

Hypoxia

A reduced level of tissue oxygenation is the definition of **hypoxia**. Hypoxia has many causes, ranging from

respiratory and cardiac conditions to anemia. A specific type of hypoxia is **hypoxemia**, defined as decreased partial pressure of oxygen in the blood (PaO_2) indicated in an ABG result.

Early signs of hypoxia are anxiety, confusion, and restlessness. As hypoxia worsens, the patient's level of consciousness and vital signs will worsen with an increased respiratory rate and heart rate and decreased pulse oximetry readings. Late signs of hypoxia include bluish discoloration of the skin and mucous membranes called **cyanosis**.

Hyperventilation

Rapid, deep breathing is referred to as **hyperventilation**. A faster respiratory rate and depth cause low levels of CO_2 in the blood. Hyperventilation can occur due to anxiety, panic attacks, pain, fear, head injuries, or mechanical ventilation. Acute asthma exacerbations, pulmonary embolisms, or other respiratory disorders can initially cause respiratory alkalosis as the lungs breathe faster in an attempt to increase oxygenation, which decreases the $PaCO_2$. After a while, however, these hypoxic disorders cause respiratory acidosis as respiratory muscles tire, breathing slows, and CO_2 builds up in the blood (Table 19.1).

Physiological Challenge	Respiratory Pattern	Subsequent Acid-Base Imbalance	Resultant Compensatory Change	Ideal Result
Anxiety, pain, fear, asthma exacerbation, pulmonary embolus	Hyperventilation	Respiratory alkalosis (pH >7.45; $PaCO_2$ <35 mm Hg)	Hypoventilation in response to alkalosis	Normal pH (acid-base balance) with return to normal respiratory rate and depth
Decreased level of consciousness, obesity, weak respiratory muscles	Hypoventilation	Respiratory acidosis (pH < 7.35; $PaCO_2$ >45 mm Hg)	Hyperventilation in response to acidosis	Normal pH with return to normal respiratory rate and depth

TABLE 19.1 Hyperventilation and Hypoventilation

19.2 Cardiovascular System

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the structures and functions of the cardiovascular system
- Understand the physiology of the cardiovascular system
- Recall regulation mechanisms of the cardiovascular system

In this section, the cardiovascular system is at the center of discussion. Without the cardiovascular system, gas exchange would not be useful, as perfusion is necessary for O_2 and other nutrients to be distributed throughout the body and reach the tissues.

The contribution of this critical body system to the essential process of oxygenation is its pump and tank, which circulate and deliver vital elements to cells and tissues. This section explores the structure, function, and regulation of the cardiovascular system and its indispensable role in oxygenation.

Structures and Functions of the Cardiovascular System

The heart is the central feature of the cardiovascular system; it is the pump that provides power. Considering the heart as the pump, the volume of circulating fluid is stored in the body's fuel tank and dispersed throughout the body by the blood vessels, or the vascular system. There has to be an adequate amount of fuel within the tank to be pumped around the body and perfuse the cells, tissues, and organs.

Heart

The human heart is located within the thoracic cavity, medially between the lungs in the space known as the **mediastinum**. The great veins, the superior and inferior venae cavae, and the great arteries, the aorta and

pulmonary trunk, are attached to the superior surface of the heart, called the base. The base of the heart is located at the level of the third costal cartilage. The inferior tip of the heart, the apex, lies just to the left of the sternum between the junction of the fourth and fifth ribs. It is important to remember the position of the heart when placing a stethoscope on the chest of a patient and listening for heart sounds.

The heart consists of four chambers: two atria and two ventricles. The right atrium receives deoxygenated blood from systemic circulation, and the left atrium receives oxygenated blood from the lungs. The atria contract to push blood into the lower chambers, the right ventricle, and the left ventricle. The right ventricle contracts to push blood into the lungs, and the left ventricle is the primary pump that propels blood to the rest of the body.

The heart tends to be considered as the muscle it is, but its structure actually includes three layers of slightly different cellular makeup. The outer layer is composed of fat and connective tissue and is an extension of the serous pericardium, one of three layers of protective pericardial tissue that surrounds the heart. Endothelial cells make up the heart's inner layer and envelop the valves; this tissue is the same as that of the inner layer of the nearby larger blood vessels. It is the midlayer of the heart that consists of muscle cells specific to the heart. The coronary arteries are the source of perfusion specifically to the heart muscle cells, or **cardiomyocytes**.

Cardiac cells are unique in a few ways. First, they are able to initiate spontaneous action potential, also called **automaticity**. Another distinctive property is the heart's own circulation: coronary arteries perfuse the cardiac muscle itself, and this blood flow is primarily supplied during diastole. Cardiac perfusion is enhanced by vasodilation of coronary arteries in response to catecholamines, hormones that function as neurotransmitters.

Blood Vessels

After blood is pumped out of the ventricles, it is carried through the body via blood vessels. An **artery** is a blood vessel that carries blood away from the heart, where it branches into ever-smaller vessels and eventually into tiny capillaries where nutrients and wastes are exchanged at the cellular level (Figure 19.7). Capillaries combine with other small blood vessels that carry blood to a **vein**, a larger blood vessel that returns blood to the heart. Compared to arteries, veins are thin-walled, low-pressure vessels. Larger veins are also equipped with a **valve** that promote the unidirectional flow of blood toward the heart and prevent backflow caused by the inherent low blood pressure in veins as well as the pull of gravity (Figure 19.8).

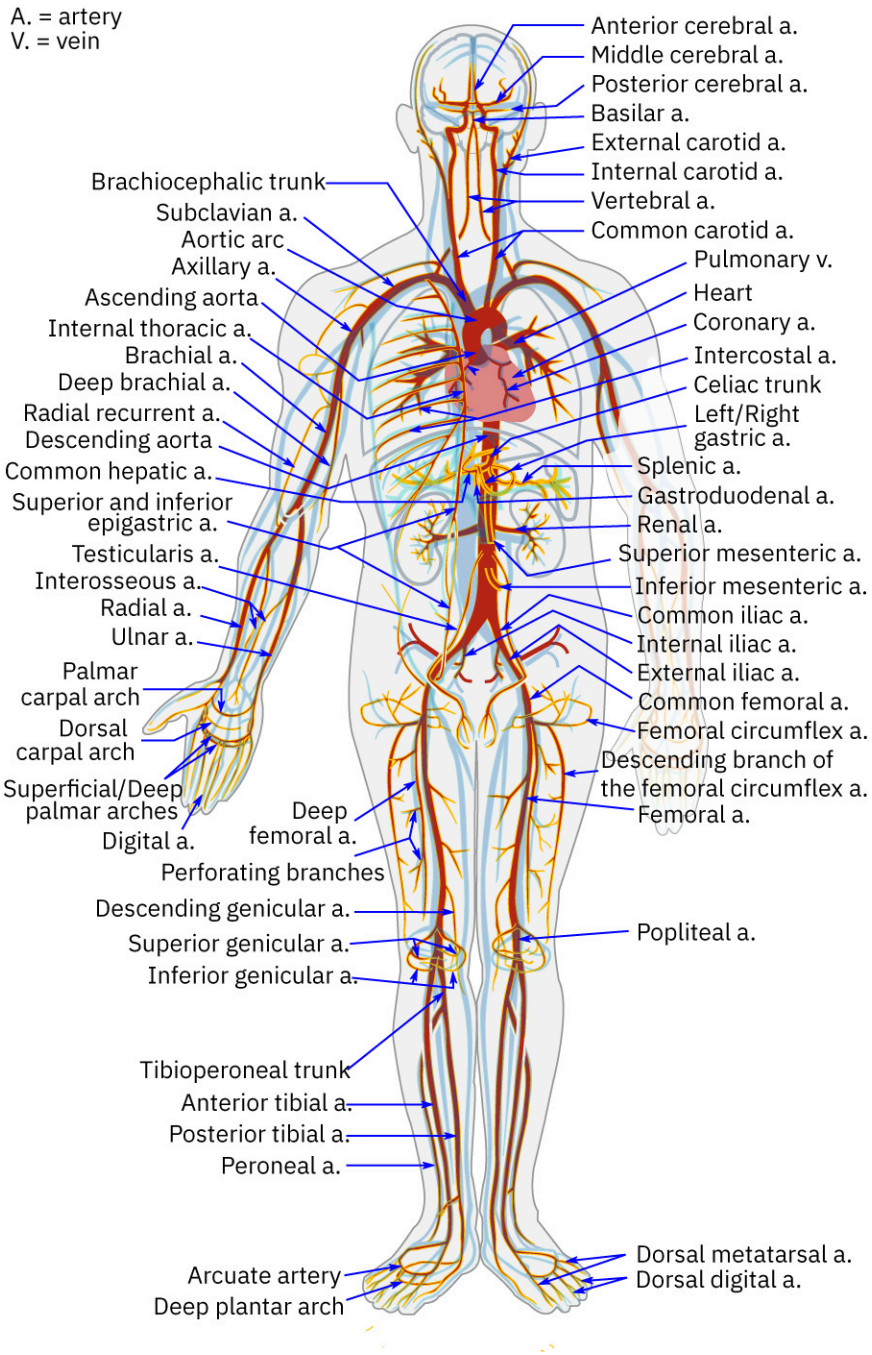


FIGURE 19.7 The arteries in the circulatory system carry oxygenated blood from the heart throughout the body. (credit: "Arterial System" by "LadyofHats"/Mariana Ruiz Villarreal/Wikimedia Commons, Public Domain)

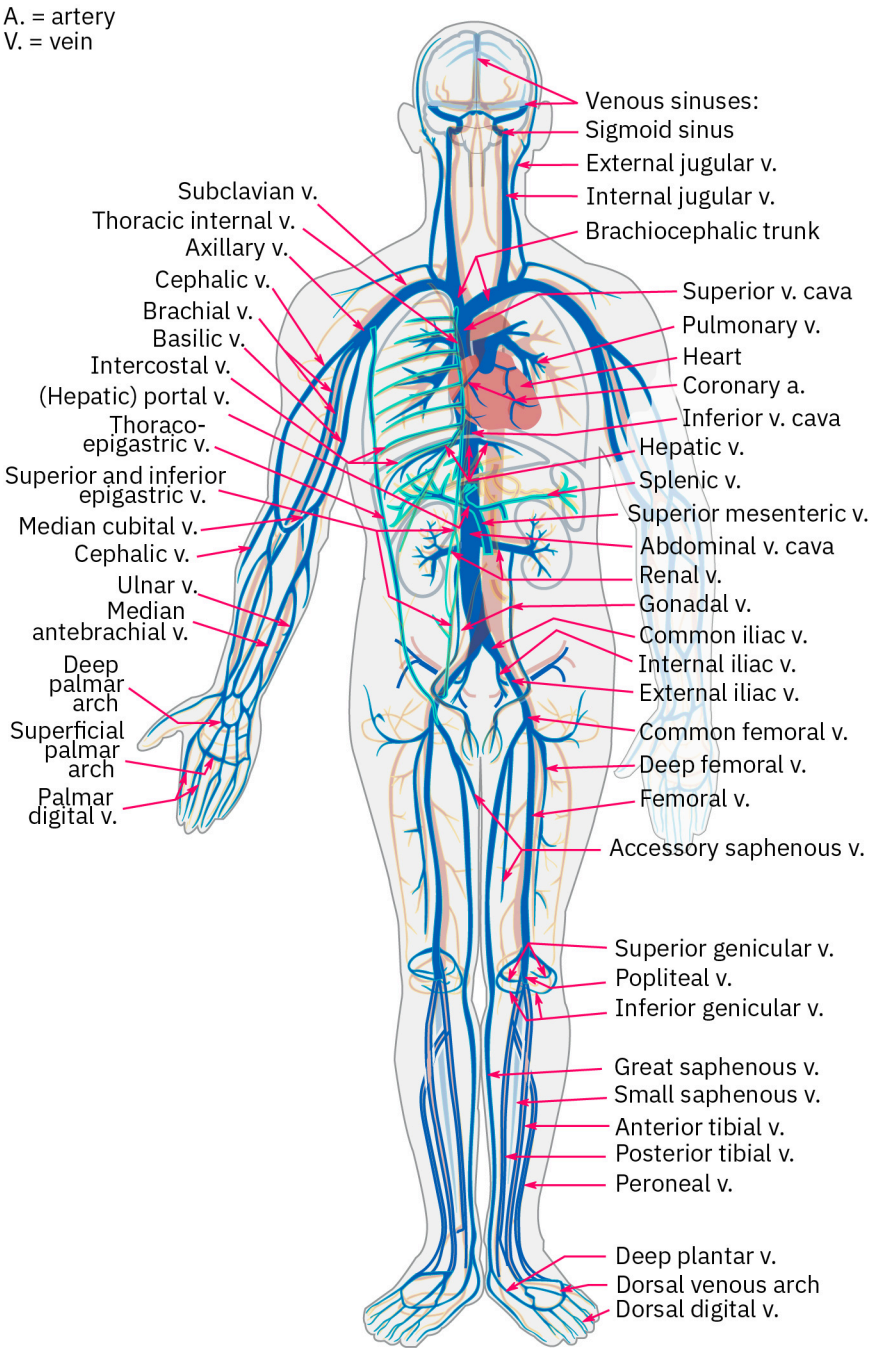


FIGURE 19.8 The veins in the body carry blood to the heart to be oxygenated. (credit: "Venous System" by "LadyofHats"/Mariana Ruiz Villarreal/Wikimedia Commons, Public Domain)

In addition to their primary function of returning blood to the heart, veins may be considered blood reservoirs because systemic veins contain approximately 64 percent of the blood volume at any given time. Approximately 21 percent of the venous blood is located in venous networks within the liver, bone marrow, and integument. This volume of blood is referred to as **venous reserve**. Through venoconstriction, this reserve volume of blood can get back to the heart more quickly for redistribution to other parts of the circulation.

The amount of fluid within the blood vessels, or **intravascular volume**, contributes to blood pressure as measured by pressure within the arteries. Other organs may contribute waste products from metabolic functions into the bloodstream to be transported for further metabolism, and ultimately for some waste excretion from the body. An example is water entering the body through oral intake, absorption through the gastrointestinal tract, delivery to cells in need of fluid, and excess being delivered to the renal system for processing and urinary excretion.

Physiology of the Cardiovascular System

From the first heartbeat to the last, the cardiovascular system is responsible for a constant blood supply to all body systems, including its own. Blood flow provides nutrients of all types to body tissues, and its allotment to specific areas changes as physiological demands change. Activity and rest alter the needs for O_2, and nutrients such as carbohydrates, proteins, and fats, as well as dispersing hormones and other chemicals at the correct times to meet the body's requirements. All systems require constant blood flow, though most have periods of high versus low demand. Even the cardiopulmonary requirements are reduced during low activity but increase during stress, exercise, and any other stimulation of the sympathetic nervous system. The brain is an exception, as its need for circulation is continual and essential to the normal function of many bodily processes.

Blood pressure (BP) and heart rate (HR) vary in response to the demands of activity and rest, and they also vary as needed as the body reacts to fluid changes, autonomic nervous system input, and other systemic influences. Another concept is that of cardiac output (CO), which is the amount of blood pumped by the left ventricle in one minute. Cardiac output is considered one of the advanced hemodynamics (beyond basic vital signs) that can be monitored in certain critical care settings with specialized equipment. Refer to Table 19.2 for more details about the information provided, the formulas involved (Bonsall, 2016; Bruss & Raja, 2022), and examples.

Terms	**Cardiac Output** (CO): amount of blood pumped by the heart in one minute Normal range 4 to 8 liters/minute (L/min)
	Cardiac Index (CI): CO with consideration for body surface area (BSA) Normal range 2.5 to 4 L/min/m^2
	End-systolic volume (ESV): amount of blood remaining in the heart at the end of systole*
	End-diastolic volume (EDV): amount of blood remaining in the heart at the end of diastole*
	Heart Rate (HR): number of heartbeats per minute Normal range 60 to 100 bpm
	Stroke Volume (SV): left ventricular volume pumped with each beat of the heart Normal is approximately 1 mL/kg of body weight; obtained by echocardiogram, Doppler ultrasound*
Calculations	CO = HR × SV CI = CO/BSA SV = EDV – ESV **Note:** These are not typically calculated by bedside ICU nurses but are monitored by them for trends and hemodynamic changes.
Examples	• A patient with a slow HR (bradycardia). This HR leads to a lower CO, but the SV may compensate by ejecting more volume with each beat. This allows for the continuation of normal CO, at least temporarily. • A patient with a fast HR (tachycardia). This increase in HR can compensate, at least temporarily. However, if the HR becomes too fast, SV suffers because there is not enough time for ample ventricular filling.

*ESV, EDV, and SV are obtained by specialized testing. Information is entered into the CO monitor, and it obtains actual and/or estimated information that is converted into numbers displayed for continuous monitoring.

TABLE 19.2 Advanced Hemodynamics

Circulation

There are two distinct but linked circuits in human circulation called the pulmonary and systemic circuits (Figure

19.9). The pulmonary circuit transports blood to and from the lungs, where it picks up oxygen and delivers carbon dioxide for exhalation. The systemic circuit transports oxygenated blood to virtually all of the tissues of the body and returns deoxygenated blood and carbon dioxide to the heart to be sent back to the pulmonary circulation.

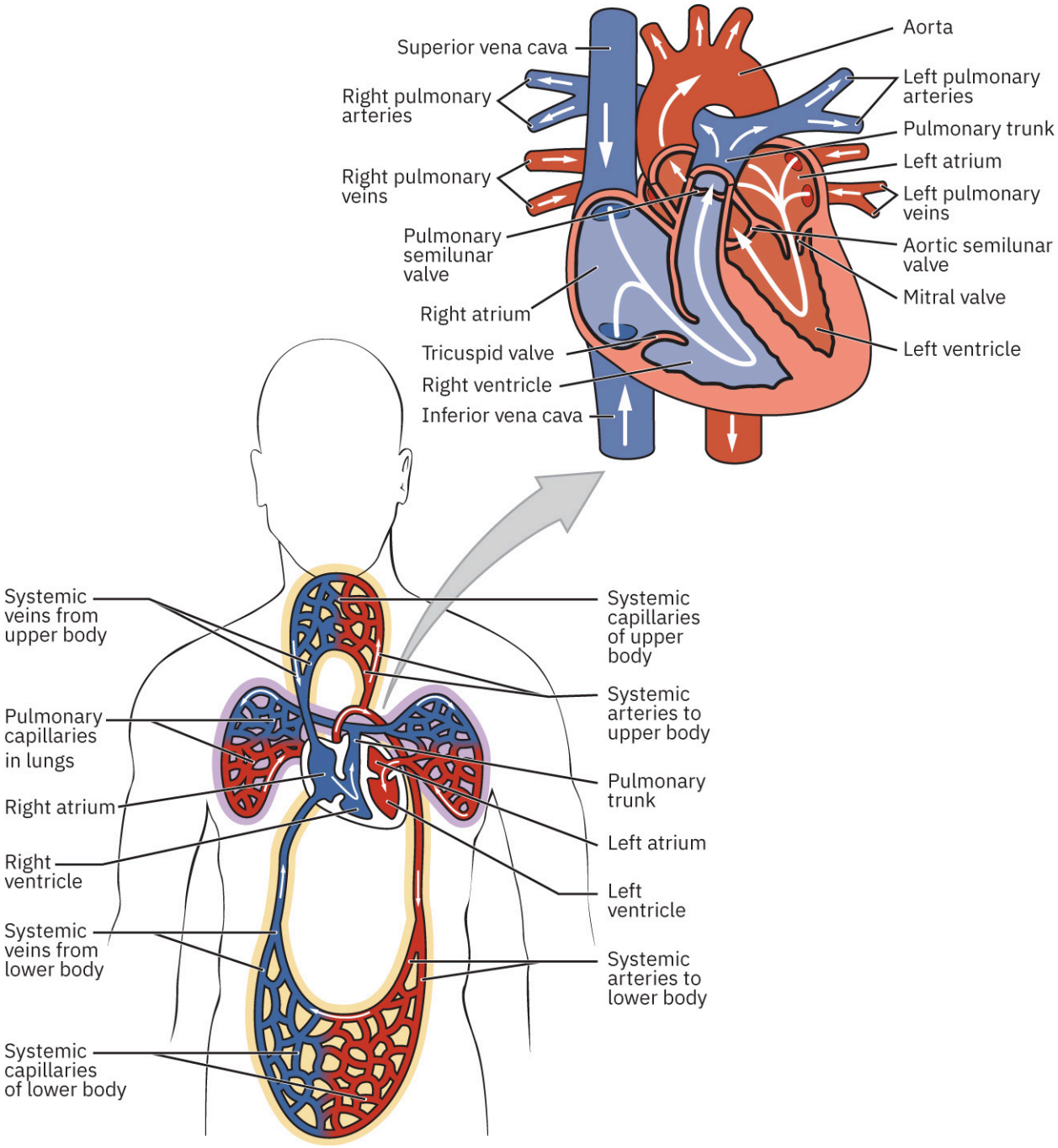


FIGURE 19.9 Blood flows through the cardiopulmonary circuit and the heart. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

There are potential physiological interruptions that lead to a body not being in a state of homeostasis. An example is **arteriosclerosis**, or stiffening of the arterial walls, and a subcategory, **atherosclerosis**, or buildup of plaque deposits within the artery walls. Arteriosclerosis lessens the elastic properties of blood vessels and, therefore, the ability for vasodilation, which increases the intravascular pressure. Atherosclerosis narrows the internal space of blood vessels, which also increases the pressure within the intravascular space. These two pathophysiological properties often occur together, and either can cause hypertension when renal arteries are impacted. While hypertension is a possible result, uncontrolled hypertension is also a risk factor for the development of arteriosclerosis (AHA, 2023;

Poznyak et al., 2022). Other risk factors include dyslipidemia, diabetes mellitus (DM), and cigarette smoking. Hypertension contributes to the development of arteriosclerosis by thickening the walls of blood vessels, plaque development, and the potential for rupture of the blood vessel walls. It is not uncommon for patients with these diagnoses to also be hypervolemic, from either cardiac or renal (or a combination) dysfunction. In these cases, multiple pathologies are contributing to excessive vascular volume and pressure. Temporary increases in fluid and BP can be helpful compensatory mechanisms for the improvement of perfusion; however, with these diagnoses, there is little relief from the elevated pressures, little rest for the body system, and ultimately, a reduction in perfusion.

Another example of a lack of stable perfusion is hypovolemia or a lack of fluid in the vascular space. This can be from different issues, like blood loss from surgery or traumatic injury, or fluid loss from exertion or hot weather. The loss of volume means less fluid volume in the circulatory system, which is typified by a low BP, manifested by signs and symptoms of low perfusion, such as mental status changes ranging from slight confusion to, potentially, seizure, cool and clammy skin, low urine output, climbing creatinine, and other laboratory results illustrating a concentrated sample.

CULTURAL CONTEXT

Buerger Disease

Buerger disease (BD) affects small blood vessels and causes a lack of perfusion often leading to gangrene and subsequent amputation. The major risk factor for BD is cigarette smoking, and it occurs more frequently in men than women (Baran et al., 2019; Bucci et al., 2013; Kurata et al., 2003). In spite of the risks associated with smoking, many patients who have suspected or confirmed BD are addicted to nicotine and/or the habitual behaviors associated with smoking and find it impossible to quit.

In the United States, a patient example from the early 2000s illustrates the grip smoking often has on people: the patient was a female about 55 years old, who had spent many years as a nurse. She was also a cigarette smoker of at least a pack per day for forty years. At the time of the nursing encounter, the patient was hospitalized in anticipation of her fourth limb amputation secondary to BD. Her three other limbs had been amputated above the joints (knees and elbow), and the remaining arm was scheduled for amputation. The patient had continued to smoke up to just prior to admission.

Some recent studies about smoking and smoking cessation have brought some insight into the cultural component of smoking and the difficulty of "kicking the habit." Smoking has long been associated with masculinity (Khanal et al., 2023). It can be difficult to overcome long-standing traditions, in spite of the potential contribution to disease processes like BD.

Another study focused on socioeconomic factors and noticed that higher rates of smokers were found within lower socioeconomic positions (Manns et al., 2023). One of the reasons given for difficulty in cessation of smoking is a lack of support for, and more barriers to, quitting. Also noted, the sociocultural circle within the lower socioeconomic positions tends to include more smokers, and therefore, a culture of continued cigarette smoking.

In a study exploring the reduction of the smoking habit, there is hope for the role of family support offering a positive impact on cessation (Cho et al., 2023). Smokers eating alone were found to smoke more than those who ate meals with their families. Cultural input can be influential to behaviors, whether in supporting smoking or its cessation. The value of a strong social circle, offering group interest and support to quitting smoking brings hope to those attempting to quit a highly addictive habit like smoking.

Stroke Volume

The amount of blood expelled from the left ventricle during a single systolic contraction is known as **stroke volume (SV)**. Three primary factors that affect SV are **preload**, or the stretch on the ventricles prior to contraction; contractility, or the force or strength of the contraction itself; and **afterload**, the force the ventricles must generate to pump blood against the resistance in the vessels. The calculation for SV is EDV – ESV.

The **ejection fraction (EF)** is the percentage of blood within the ventricle that is expelled during a single systolic

contraction. A low EF means that the heart is not creating an efficient contraction, and this is a sign of HF. HF can occur with intact EF, or it can be reduced. Normal EF is approximately 50 to 70 percent; it is therefore considered preserved if it is over 50 percent (Bruss & Raja, 2022). Reduced EF is indicated when there are clinical manifestations of HF and the EF is at or under 40 percent. The formula for EF is SV/EDV. Cardiologists use information about EF to explore cardiac-related diagnoses like hypertrophy and HF, as well as to confirm adequate perfusion and function.

LINK TO LEARNING

Learn more about EF and its relationship to HF (https://openstax.org/r/77EFHFRelation) in this video.

Regulation of the Cardiovascular System

Cardiovascular regulation is an autonomic body function that is controlled from within the brainstem, specifically the cardiovascular center of the medulla oblongata. Recall that the autonomic nervous system (ANS) has two systems: the sympathetic nervous system (SNS), nicknamed the "fight or flight," and the parasympathetic system (PSNS), with the nickname "rest and digest." The SNS, when stimulated, is involved in the release of powerful neurotransmitters like epinephrine and norepinephrine, to initiate physiological responses like bronchodilation, pupillary dilation, glucose release, increased HR and BP, which may assist the person to escape a life-threatening circumstance.

As the term "fight or flight" indicates, this may allow for a burst of energy and strength to battle or flee from an aggressor. In the case of illness, such physical responses may provide at least temporary improvement of vital signs to preserve adequate perfusion until medical assistance can be provided. The PSNS is associated with responses opposite those of the SNS, including slow HR, lower BP, constricted pupils, and bronchoconstriction. With proper function, the two systems work in concert to maintain homeostasis.

There are three functional centers within the cardiovascular center, responsible for different responses and actions. First, the cardioaccelerator center is involved with the stimulation of the SNS and the cardiac accelerator nerve. The result, as the name and association with the SNS indicate, are signs and symptoms of SNS responses, some of which were previously listed. The second center is the cardioinhibitory center, which works with the PSNS and the vagus nerve. When stimulated, it results in the PSNS reactions including those listed earlier. Finally, the vasomotor center is involved with the contraction of smooth muscles and vascular tone, which is necessary for the constriction of blood vessels and, therefore, regulation of BP.

The nervous system plays a critical role in the regulation of vascular homeostasis based on baroreceptors and chemoreceptors. Baroreceptors are specialized stretch receptors located in the aorta and carotid arteries that respond to the degree of stretch caused by the presence of blood and then send impulses to the cardiovascular center to regulate BP. In addition to the baroreceptors, chemoreceptors monitor levels of oxygen, carbon dioxide, and pH. When the cardiovascular center in the brain receives this input, it triggers a reflex that maintains homeostasis.

REAL RN STORIES

Balancing Cardiopulmonary Nursing Care

Nurse: Amanda, RN
Clinical setting: Cardiovascular ICU
Years in practice: Less than one year at the time of the event
Facility location: Delta, Colorado

I started my career as a new graduate nurse in a Cardiovascular ICU working nights. On one particular shift, I was assigned to take a report from the emergency department (ED) on a Black male patient who had presented about an hour earlier with chest pain, dyspnea, and hypertension. A twelve-lead electrocardiogram (ECG) in the ED did not show any signs of ST elevation, and oral nitroglycerin, morphine, and 2 L of O_2 via nasal cannulas subsided his

symptoms. The emergency room had placed him on a nitroglycerin drip and was sending him to my unit to be on observation overnight. This was a standard chest pain observation patient, and the cardiologist had a standing order set that allowed me to titrate the nitroglycerin to chest pain and to keep the systolic BP above 90 mm Hg.

I distinctly remember this patient, as he could not move without his chest pain increasing and becoming short of breath. Just admitting him to his room I had to increase the nitroglycerin drip to keep his pain under control and help his oxygenation. Soon after he settled, however, a fifteen-minute BP check showed his pressure had plummeted to 87/45, just with a minor adjustment of the drip. I decreased the drops (gtt). In about fifteen to twenty minutes after this decrease, he began to rate his chest pain at a four out of ten and complained of not being able to catch his breath. However, his pressure only increased a bit, hovering around 90 systolic, so I knew increasing the drip would only cause that pressure to plummet. I increased his O_2 to 4 L, called the physician, and received PRN orders for morphine every four hours as needed. This did help his breathing and pain. What ensued for the next five hours of my shift was a delicate balance of titration of nitroglycerin, morphine (when able), O_2, keeping the patient still, and a lesson for me in the significant relationship of the vascular system and respiratory system. When his chest pain increased, I knew his BP would be stable, however, his breathing would not be. The amount of nitroglycerin needed to keep his pain gone and his breathing stable was not stable for his BP, and it had to be supplemented with morphine and, at times, increasing his O_2. After about five hours of this and a few phone calls from me, the cardiologist took him to the Cath lab around 2 a.m. A stent was placed for a 50 percent occluded artery. I never was able to completely keep his pain gone for long without making him unstable in some other area; however, by morning I had learned the importance of my role as his cardiovascular RN. If I (or any nurse) had not been there to consistently check his status, he could have had a major cardiovascular event and may have needed more than just a stent.

The next section offers a discussion about the electrical system of the heart, including the specific pathway through the heart. The electrical system responds, as mentioned earlier, to the body's changes and responses to the ANS, and in accordance causes reactions from the mechanical system, in actions like cardiac pumping and vascular circulation.

Electrical Impulses

The human body includes an electrical system, which directly and indirectly affects all systems. Cardiac electrical impulses (Figure 19.10) lead to the mechanical (muscle) movement of the myocardium, which pumps and circulates blood through both systemic and pulmonary circuits, thereby (in normal circumstances) perfusing the entire system.

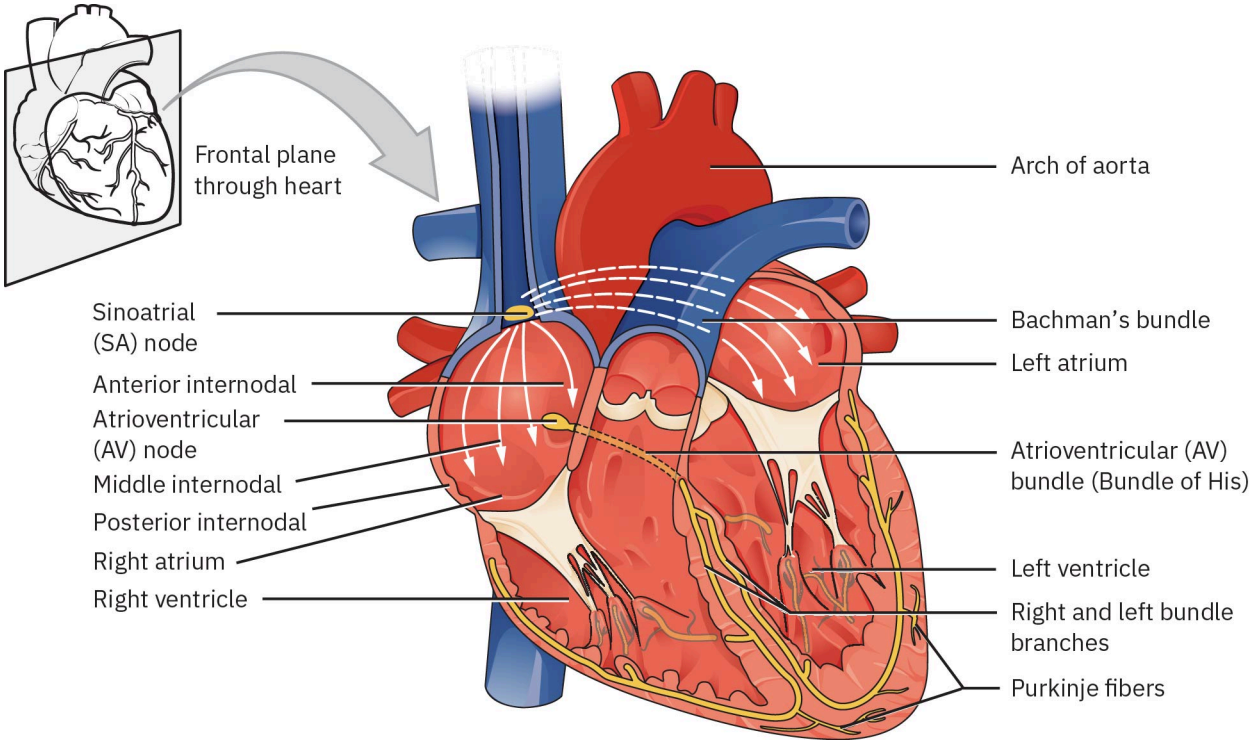


FIGURE 19.10 Normal electrical conduction through the heart travels from the sinoatrial node, to the internodal pathways, the atrioventricular node, the bundle of His, to the bundle branches (right and left), and to the Purkinje fibers. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sinoatrial Node

Known as the pacemaker of the heart, the sinoatrial (SA) node has the highest rate of depolarization. It initiates the sinus rhythm or normal electrical pattern followed by contraction of the heart. Criteria for normal sinus rhythm include that the impulse begins at the SA node, travels from the SA node to the atrioventricular (AV) node in 0.12 seconds or less, and has a rate between 60 and 100 beats per minute. The firing of the SA node can be visualized by an **electrocardiogram** (ECG or EKG), which is a noninvasive test that involves attaching leads to a patient's chest and limbs: the machine then obtains a visual interpretation of the electrical impulses involved in the cardiac cycle (Figure 19.11).

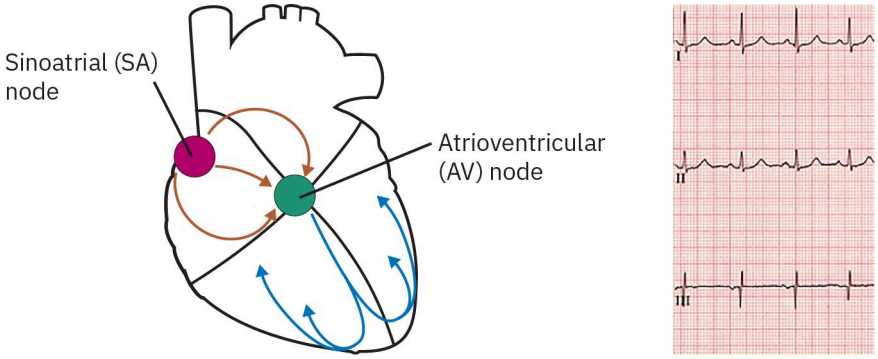


FIGURE 19.11 (a) Cardiac conduction from the SA node of the right atrium through the Purkinje fibers of the ventricles. (b) The associated rhythm as seen on an ECG is shown in the image. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Atrioventricular Node

Normal cardiac electrical signals originate in the SA node and travel next to the AV node, which is found in the right atrial wall close to the coronary sinus, and then the septum between the atria. The electrical impulse next travels to the bundle of His, which leads to bilateral ventricular contraction. The normal conduction rate at the AV junction is 40 to 60 beats per minute. In the event the SA node does not fire, the AV node is able to initiate an impulse. While

the slower rate is likely to be noticed symptomatically by the patient because of lower CO from both reduced HR and SV, it is often able to maintain an adequate HR and BP until a definitive intervention can be done.

Bundle of His

The bundle of His may also be referred to as the atrioventricular bundle, which helps identify its location and where it is in the cardiac electrical pathway. The bundle of His is composed of atrioventricular tissue, and it carries the electrical impulse from the AV node down the interventricular septum to the right and left bundle branches, which lead to the Purkinje fibers of the respective right and left ventricles. As the electrical impulse makes its way down the bundle branches and to the Purkinje fibers, it initiates the muscular action of ventricular contraction.

Dysrhythmia

The word **dysrhythmia** refers to a rhythm abnormality; the term arrhythmia indicates a lack or absence of rhythm but is often used synonymously with dysrhythmia to mean an abnormal rhythm. Dysrhythmias can be minor or extreme and life threatening, depending on where the anomaly originates, what it causes, and how extensive it is. One of the indicators of the severity of dysrhythmia is the patient's symptoms. Depending on a patient's medical history, level of well-being, mental state, and potentially other factors including the specific abnormal rhythm, there may be compensatory changes supporting little or no symptoms, or the patient may feel any combination of symptoms, including dizziness, weakness, syncope, palpitations, chest pain, or cardiac arrest.

Dysrhythmias have a variety of causes. A few examples are provided in the following paragraphs. Sometimes, irritable spots (foci) develop in the cardiac muscle where the property of automaticity may become a hindrance. This can lead to electrical misfires, as the irritable focus generates an impulse that may cause the normal electrical system to be interrupted, or the pathway altered.

Injuries to the heart or to a particular group of cells may also cause the normal electrical pathway to be disrupted, and slight changes or delays can develop, which are visible on ECGs when waves, intervals, and complexes are assessed and measured. An example is a first-degree heart block, where there is a delay in the period of time the impulse travels from the SA node to the AV node. On an ECG, this is seen as a prolonged PR interval.

Certain infectious diseases like bacterial endocarditis can lead to damage to the heart, including vegetations on valves causing valvular malformation, or an inability to open and close properly. This can produce disturbances in normal forward blood flow, which may be heard by auscultation with a stethoscope as a murmur.

Atrial fibrillation (A-fib) is a common dysrhythmia that sometimes is intermittent, may resolve on its own, or may respond well to treatment with medications or cardioversion. Sometimes, when interventions have not been successful in converting the patient out of A-fib, the goal becomes to minimize complications from inefficient atrial movement and subsequent increased risk for blood clot development. Medications like anticoagulants are used in this situation to prevent clot formation.

LINK TO LEARNING

More information on dysrhythmias, defibrillation versus cardioversion, and potential complications (https://openstax.org/r/77DysDefvsCard) is presented in this video.

Ventricular dysrhythmias are generally considered more dangerous than those originating in the atria, as the ventricles are integral in oxygenation and perfusion. These abnormal rhythms can be the result of a variety of influences, including illicit drugs like cocaine or methamphetamine, a traumatic injury such as being hit directly in the chest by a baseball, or as a consequence of a myocardial infarction (MI), where both electrical and mechanical tissue can be damaged.

Nurses are trained to respond to respiratory and cardiac emergencies, some of which are the result of dysrhythmias. This may include basic life support (BLS) training incorporating the combination of rescue breathing and chest compressions of **cardiopulmonary resuscitation (CPR)**. BLS instruction also includes the use of an **automated external defibrillator (AED)**, which is an easy-to-use portable device available in many settings that can analyze a cardiac rhythm and defibrillate, if appropriate, in order to reestablish an effective cardiac rhythm. It is noteworthy that AEDs identify heart rhythm but do not provide an option for the operator to view it; they are more designed for

bystander CPR response.

On patient care units within acute care hospitals, manual defibrillators are more common and offer portable monitoring on a small screen where medical providers can view and assess the patient's rhythm, as well as other features. Defibrillators provide shocks of the intensity to treat ventricular tachycardia or fibrillation but can also be set to deliver lower joules to attempt synchronized cardioversion for such dysrhythmias as A-fib. Additionally, the option to externally pace a patient is available on these devices. Newer manual defibrillators have an automatic AED option (Figure 19.12).

(a) (b)

FIGURE 19.12 (a) A manual defibrillator provides various options for monitoring, recording, and interventions, and (b) an AED is used for automated responses. (credit a: modification of work "Manual external defibrillator monitor" by "Aededitor"/Wikimedia Commons, CC BY 3.0; credit b: modification of work "AED & Fire Extinguishers, both necessary" by "David Bruce Jr."/Flickr, CC BY 2.0)

In **advanced cardiac life support (ACLS)**, extra training is involved, often for medical providers in prehospital and hospital settings, and this includes the addition of resuscitation and support cardiac medications. Commonly, these include drugs in the antidysrhythmic classification as well as those like catecholamines that increase BP—both of these classes of medicines are used in arrest circumstances to attempt to convert abnormal rhythms to normal, and/or enhance perfusion through other means.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Defibrillation

A hospitalized patient who experiences a ventricular fibrillation (VF) arrest is treated by a system of assessments, actions, and interventions, coordinating members of an interdisciplinary healthcare team, with QSEN Competencies in mind (QSEN, 2022). Associated competencies for the intervention defibrillation include patient-centered care, teamwork and collaboration (T&C), and safety (S). Considering the interdisciplinary nature of treatment of cardiac arrest, let us explore the knowledge, skills, and attitudes within the T&C competency through an unfolding example (QSEN, 2022):

1. **Knowledge**: "Describe scopes of practice and roles of healthcare team members" (p. 3).
   Example: VF arrest – code called by bedside RN, who immediately begins CPR while awaiting arrival of code team and equipment. Upon arrival of the team, there are predetermined roles based on scope of practice for the different professions. Team leader is typically a physician or advanced practitioner. BLS-certified personnel can alternate chest compressions every one to two minutes.
   Skills: "Function independently within own scope of practice as a member of the healthcare team" (p. 3).
   Example: The bedside nurse identified the arrest situation, called the code, and began CPR—all within the RN scope of practice. Others function within their professional scope as personnel converge on the patient setting, for example, RT begins bagging the patient during chest compressions by other personnel, team leader clearly states orders for interventions based on VF/cardiac arrest algorithm, education, and other skills, pharmacist provides ordered medications from the code cart as ordered, for the RN-assigned medication

administration.
Attitudes: "Value the perspectives and experiences of all health team members" (p. 3).
Example: The team members realize, understand, and practice their specific roles during an arrest situation. Collaboration between all members of the patient care/code team is respectful and values all members equally.

2. **Knowledge**: "Describe strategies for identifying and managing overlaps in team member roles and accountabilities" (p. 3).
Example: Hospital personnel, through BLS and ACLS certification/recertification, are practiced at the roles and responsibilities during emergencies. RNs assume roles including the primary nurse (whose patient is involved in the emergency), medication RN, recording RN—once the particular role is assumed, each of these nurses tends to continue that particular role throughout the event. RT provides bagging with the Ambu bag, followed by assisting with intubation, CO_2 confirmation, and placement of the patient on a ventilator. Various team members serve as compressors, providing chest compressions for one to two minutes at a time in relay format.
Skills: "Clarify roles and accountabilities under conditions of potential overlap in team member functioning" (p. 3).
Example: The primary RN role is changeable, based on nurse-patient assignments; an experienced team may have predesignated selections based on preference and experience/skill level, so the recorder may be the nursing supervisor, and the charge RN may administer medications. The team leader is usually a physician—intensivist or ED physician is common. As various members of the team provide chest compressions for short periods, transition from one compressor to another should be anticipated and verbally planned and executed for minimal disruption.
Attitudes: "Respect the unique attributes that members bring to a team, including variations in professional orientations and accountabilities" (p. 3).
Example: Team leaders tend to be those with advance practice background and prescriptive authority. The primary RN is considered to have the best familiarity with the patient—history, status trends, medications, and so on, and therefore can provide a quick overview. Various team members may be able to serve in more than one capacity, and clear communication is critical throughout an emergency, and in any transitions.
3. **Knowledge**: "Describe examples of the impact of team functioning on safety and quality of care" (p. 4).
Example: Treatment of a VF arrest includes early defibrillation. The prompt arrival of the code team, and the code cart with the defibrillator/monitor to confirm the rhythm, and subsequently treat it, are necessary. Placement of pads on the patient, activation of the machine, and its readiness for defibrillation when charged all must be clearly communicated throughout the event.
Skills: "Assert own position/perspective in discussions about patient care" (p. 4).
Example: Each team member's role is a critical part of the total situation, and the contribution is important and should be shared at appropriate times. A nurse may be responsible for pulse checks when chest compressions are briefly halted, and that nurse's input is vital at that time. Whether the patient has bilateral breath sounds after intubation is also key, and the RN or RT who auscultates the chest should distinctly state these findings.
Attitudes: "Appreciate the risks associated with handoffs among providers and across transitions of care" (p. 4).
Example: During an emergency circumstance like a cardiac arrest and code response, all members of the healthcare team should realize the importance of clear, concise communication among personnel. Whether this is to have a second physician join the team, or RT and an RN help with intubation and securing the endotracheal tube (ETT), or to change compressors after a minute or two of exhausting work, transitions should always maintain the central focus on the patient and clearly move from one situation or care provision to another.

Ischemia

A lack of O_2 delivery to a part of the body, especially the cardiac tissue, is termed **ischemia**. Angina pectoris is a rather common ischemic event whereby O_2 supply does not meet demand. Angina can be chronic and stable, in which case it is predictable, and patients are often able to treat it by discontinuing activity, resting, and administering sublingual nitroglycerin. If angina becomes unpredictable, it is described as unstable angina and is

associated with acute coronary syndrome (ACS), which involves worsening coronary disease. Ischemia is reversible if adequate perfusion is reestablished promptly. Coronary artery disease (CAD) can progress along a continuum, beginning with a healthy coronary system, to a diagnosis of stable angina pectoris, and to unstable angina. If it worsens and perfusion is inadequate for too long, it can advance to a MI. Once the tissue is damaged, terminology changes to infarction. Infarcted tissue does not recover and leads to permanent repercussions; a common adverse outcome of CAD is HF.

Heart Failure

Inefficiency of the heart's contractility characterizes HF. Ineffective contractility may arise from chronic hypertension, often associated with hypervolemia (fluid volume excess). According to Starling's law, the heart is capable of stretching muscle fibers, which initially improves the strength of muscle contraction and is a desired effect, as it increases SV. However, if this is a chronic situation, there can be a limit to this ability to stretch, and if exceeded, the cardiac muscle can become either hypertrophied (excessively enlarged) or unable to rebound from being overstretched, in which case the muscular walls become weak and floppy. Either circumstance reduces cardiac contractility, which is seen as HF symptoms, as seen in Figure 19.13.

LINK TO LEARNING

Watch for the signs, symptoms, and nursing assessment of right- and left-sided heart failure (https://openstax.org/r/77RigLefHeaFail) in this video.

Right-sided heart failure		Left-sided heart failure
Often caused by left-sided heart failure; can also occur even when the left side of the heart is apparently normal		Most common type of heart failure; usually caused by coronary artery disease
Heart loses some of its ability to move oxygen-depleted blood to the lungs to pick up new oxygen		Heart loses some of its ability to pump blood out to the body after it has been reoxygenated
Symptoms: • Peripheral edema, especially ankles and feet (reduced venous return) • Hypervolemia/hypertension • Congestion in and around organs, e.g., liver • Ascites • Impaired liver function		Symptoms: • Cough, dyspnea, tachypnea • Orthopnea • Crackles/coarse breath sounds • Pulmonary edema • Lung field dullness on percussion • Diminished breath sounds at bases: pleural effusion • Cyanosis
		Subcategories: • **Systolic:** reduced EF as pumping ability of ventricle is diminished • **Diastolic:** ventricle becomes stiff & doesn't rest during diastole EF preserved but ventricular filling diminished

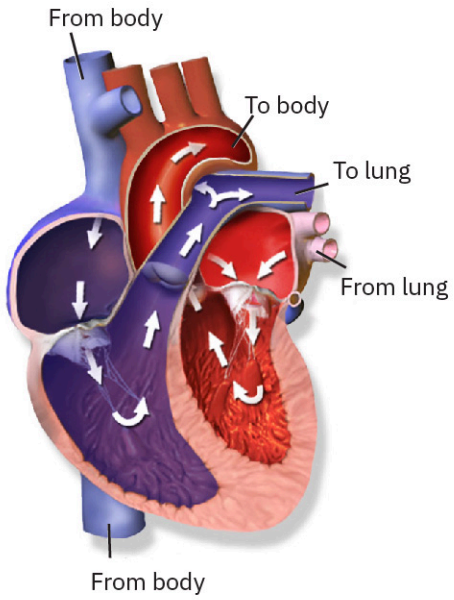


FIGURE 19.13 Right- and left-sided heart failure show different symptoms. (credit: modification of work "Blood Flow Through the Heart" by "BruceBlaus"/Blausen Medical Communication/Wikimedia Commons, CC BY 3.0)

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 1

Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living due to weakness and increased dyspnea.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history**: Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Nursing Notes	**1100: Assessment** **Neurological:** Alert and oriented x4, follows commands appropriately **Respiratory:** Labored and shallow breathing pattern, bilateral crackles in bases **Cardiovascular:** Bilateral lower extremity edema, tachycardia **Abdominal:** Bowel sounds present in all four quadrants, no pain or tenderness noted **Musculoskeletal:** Limited range of motion in bilateral shoulder joints, patient reports pain in wrist joints related to osteoarthritis **Integumentary:** Generalized pallor
Flow Chart	**1100: Assessment** Blood pressure: 158/89 mm Hg Heart rate: 111 beats/minute Respiratory rate: 27 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 88 percent on room air Pain: 6/10 (joint pain)

1. Recognize cues: Based on the assessment findings, what are the most important cues for the nurse to recognize?
2. Analyze cues: What is the relationship between the recognized cues and the patient's past medical history?
3. Prioritize hypotheses: Based on the patient's symptoms, which type of heart failure (left or right) is the patient most likely experiencing?

19.3 Factors Affecting Cardiopulmonary Function

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine physiological considerations for impaired cardiopulmonary function
- Recognize lifestyle and behavioral pattern considerations for impaired cardiopulmonary function
- Remember diagnostic testing used to monitor cardiopulmonary functioning

In the upcoming section, pathophysiology is considered, as impaired cardiopulmonary function is examined. Nonmodifiable and modifiable influences can have significant impacts on cardiopulmonary function and are thus considered risk factors. Age and genetics are examples of nonmodifiable risk factors, as the alterations or changes to the cardiopulmonary system are unavoidable. Risk factors that are modifiable include behaviors and lifestyle choices, so whether a person is active and follows a diet that helps prevent negative cardiopulmonary changes is considered modifiable. Sometimes such positive behaviors are successful at halting or slowing processes like the

development of hypertension, obesity, or hyperlipidemia.

In health care, it is often considered more beneficial to take a proactive approach and focus on the prevention of medical diseases and diagnoses, rather than waiting for a reactive response. Patients who have an understanding of their own health status and play an active role in their care are more inclined to seek preventive care and screenings, thereby avoiding preventable illness, or obtaining care early. Some such patients are able to minimize dysfunction of the cardiopulmonary system.

A variety of diagnostic tests assist healthcare providers in the identification of abnormalities, whether through preventive screenings or prompt recognition. Depending on the test, providers can monitor the progress of the disease or the effectiveness of treatment, whether medical, surgical, or pharmacological. Care plans can therefore be evaluated and redesigned based on individual patient status and goals of the patient and healthcare team.

Physiological Considerations for Impaired Cardiopulmonary Function

Homeostasis is a delicate balance, and minute changes can lead to slight or major changes physiologically. In the case of cardiopulmonary function, such alterations may affect either of the interrelated systems. Nonmodifiable risk factors for impaired cardiopulmonary function include advancing age, genetics, race, family history, and health status. Modifiable risk factors include physical inactivity, smoking, diet, and obesity.

Nurses need to anticipate such alterations and be prepared to act on changes. In many situations, proactive actions can make a huge difference, sometimes even more than reactive responses to an already symptomatic problem (Agency for Healthcare Research and Quality [AHRQ] PSNet, 2019). This section explores several factors that are likely to have effects on the cardiopulmonary system, followed by diagnostic testing that is used to monitor the function of this inescapably intertwined set of systems.

Age

Some cardiovascular changes within the heart, vessels, and blood occur naturally with age. Within the heart structure, the sinoatrial (SA) node can lose cells, and fat deposits and fibrous tissues can develop causing the SA node to fire at a slightly lower HR. In some people, enlargement of the left ventricle can occur with age, causing the chamber to hold less blood. Arrhythmias can develop, such as A-fib, caused by types of heart disease. Deposits of lipofuscin, degeneration of heart cells, and thickened heart valves can cause a heart murmur from turbulent blood flow within the heart.

In the blood vessels, baroreceptors can become less sensitive with aging, causing dizziness or orthostatic hypotension. Capillary walls may thicken, slowing the rate of exchange of nutrients and oxygen for waste and carbon dioxide. The aorta can thicken and stiffen, creating an increase in BP and cardiac hypertrophy.

A reduction in body water increases the viscosity of blood, causing a decrease in blood volume. Red blood cells are produced at a slower rate, delaying the body's response to anemia or blood loss. A decrease in neutrophils reduces the body's immune response to infection.

Aging also affects the pulmonary system. Aging lungs lose elastic recoil, causing small airway collapse and decreased alveolar surface area, decreasing lung compliance. Spirometry changes include a decrease in total lung capacity, an increase in residual volume, and a decrease in the vital capacity of the lungs. In the chest wall cavity, conditions such as osteoporosis, arthritis, calcification of the thoracic spine, and changes to intercostal muscles can increase chest wall rigidity. The chest wall can become barrel shaped to compensate for a loss of lung elasticity, causing the diaphragm to flatten and become less efficient.

Genetics

There are genetic disorders that affect the pulmonary and/or cardiovascular systems. Research has identified several such inherited cardiovascular diagnoses and described them as vascular, cardiomyopathies, or involving arrhythmias (Musunuru et al., 2020). For example, elevated lipids can be difficult to treat for some individuals; familial hypercholesterolemia may be the genetic source of this dyslipidemia.

A rather common example of a vascular genetic disorder is Marfan syndrome, which is often associated with excessive height and other long bones like those of the hands and feet. However, Marfan syndrome also frequently impacts blood vessels, including the aorta. The risk of aortic aneurysm and possible dissection is a major concern with this genetic diagnosis (Musunuru et al., 2020). Another genetic disorder, Loeys-Dietz syndrome, is similar to

Marfan syndrome, as it impacts connective tissues and can cause aortic aneurysm and potential dissection.

Long QT syndrome and bradycardia syndrome are arrhythmias associated with genetics, although there are other possible causes, including certain medications (Musunuru et al., 2020). Genetic cardiomyopathies include several of the muscular dystrophies, including Duchenne, limb-girdle, and Emery-Dreifuss. Dilated and hypertrophic cardiomyopathies can also be rooted in genetics.

More than sixty genes have been identified as involved in at least a dozen pulmonary syndromes (Brigham and Women's Hospital, 2023). One of the most common breathing disorders is asthma, and for some people, the cause is genetic. Many of the pulmonary syndromes are rather rare. Pulmonary syndromes are distinguished by those associated with cysts (causing the formation of abnormal cysts), **fibrosis** (causing abnormal, scar-like tissue), or **bronchiectasis** (causing dilated airways).

While rare and involving organs other than the lungs, cystic fibrosis (CF) is perhaps best recognized as a lung disorder; it is considered a bronchiectatic syndrome (Brigham and Women's Hospital, 2023). CF causes mucus to become thick and sticky, with respiratory secretions among those affected; this can cause airway limitations and difficulty breathing. Pulmonary fibrosis and pulmonary hypertension are both fibrotic genetic disorders. Alpha-1 antitrypsin deficiency is a genetic cystic pulmonary disorder that affects the lungs and potentially the liver. Alpha-1 antitrypsin deficiency involves symptoms similar to those of emphysema, and indeed patients may progress to an emphysema diagnosis (Brigham and Women's Hospital, 2023).

Health Status

The status of one's health at baseline can be critical for outcomes when faced with any sort of alteration of normal physiological function. Those people who are generally healthy when there is a challenging event, whether illness, injury, or emotional stress, have a far better chance of confronting the event with little physiological decline or residual effect. Conversely, someone whose baseline is poor health, as reflected by multiple **comorbidities** (multiple medical diagnoses), is at a disadvantage as far as withstanding the challenging event.

The **metabolic syndrome** is an example of a cluster of diseases (including hypertension, high blood sugar levels, a large waistline or apple shape, high triglycerides, and low HDL cholesterol) that occur together, increasing the likelihood of developing heart disease. Some patients are not identified as having the syndrome, as they experience only one or two of the diagnoses. There are certain disorders that commonly cluster together like those of metabolic syndrome, with the possibility of additive effects from the multiple disorders identified. Several comorbidities have been identified with frequent prevalence in patients with cardiopulmonary disorders. The four cardiopulmonary diagnoses isolated in this research were HF, peripheral arterial disease (PAD), coronary heart disease (CHD), and stroke. DM, COPD, and low vision were identified as the comorbidities with the most statistically significant impact on the development of the disorders.

The interaction of comorbidities and their contribution to the diagnoses can be exemplified (Buddeke et al., 2019):

- DM is also associated with the development of microvascular damage, which can play a part in vision problems, as well as hypertension and PAD.
- Hyperlipidemia is a frequent contributor to intravascular plaque development, hypertension, and ultimately significant heart disease that may lead to MI and/or stroke. MI is a common cause of HF.
- COPD is often associated with cigarette smoking; impaired gas exchange is one of the common results. The cardiovascular system is also likely to be impacted, resulting in MI and/or stroke.

Medications

Medications are prescribed for any number of reasons, and they are not without potential for problems. Drugs have desired effects and side effects. Sometimes, side effects are negative or even dangerous, referred to as adverse effects. Following are some examples of medications that have the potential to negatively affect the cardiovascular or pulmonary systems, or both.

Often, medications to treat one problem can lead to another. An example is the antidysrhythmic class of drugs. Most of these drugs are accompanied by a warning they may cause other dysrhythmias. Amiodarone is one such drug, as there is a risk for cardiac rhythm changes. Amiodarone may also affect the pulmonary system, with pulmonary fibrosis (Penn Medicine, 2023) and acute respiratory distress syndrome possible.

Chemotherapeutic agents, typically for the treatment of cancers, are associated with many side and adverse effects, some of which can be very uncomfortable or toxic to body systems. Cyclophosphamide, an alkylating antineoplastic is one such drug, with the potential to cause pulmonary fibrosis and cardiotoxicity. While cyclophosphamide's impact on the cardiac system is considered reversible, another cardiotoxic chemotherapy drug, daunorubicin, has a cumulative effect with dosing, and therefore a maximum dose. To avoid cardiac problems such as HF, daunorubicin is carefully considered with regard to the type of cancer, type of previous treatment, and total dose administered in the past.

Lifestyle and Behavior Patterns

Lifestyle and behavior patterns include decisions people make about dietary choices, habits they acquire, activities they involve themselves in, and the level of activity in which they participate. Such behaviors have a significant influence on health and wellness in a general and holistic way, and certainly, there are important considerations when one looks particularly at the cardiopulmonary system. As mentioned previously with discussion of overall health status, there are a variety of pathophysiological changes and medical diagnoses that are more likely to occur when certain lifestyles are lived and behaviors are selected, especially when these are habitual and/or frequent.

Smoking contributes to a number of diseases of the lungs, heart, and vessels. Constant exposure to chemicals in the lungs, mouth, and larynx can cause abnormal cells to divide and cause cancer. Smoking causes a disruption of the mucociliary elevator in the lungs, which can lead to increased colonization of bacteria in the lower respiratory tract and frequent infections. It also causes atherosclerosis, increasing a person's chances for CHD, hypertension, stroke, peripheral artery disease, and abdominal aortic aneurysm (CDC, 2020).

PATIENT CONVERSATIONS

Teen Vaping

Scenario: Patient is a 15-year-old named Richard, who has been vaping for the past year. The patient has been to see the primary care provider on a monthly basis for "a cold" that doesn't improve, over the past four months.

Patient: I suppose you're going to lecture me.

Nurse: I doubt lecturing will be helpful. Unless you think it would be.

Patient: My parents gripe at me all the time about it. Doesn't do anything. Just makes me more pissed off.

Nurse: Exactly.

Patient: Yeah. Won't do anything.

Nurse: What I would like to do is tell you a bit about the cold you've had so long, that won't go away.

Patient: Yeah. Why won't the doctor give me something to fix it?

Nurse: That's the problem. What you've got going on is not a cold, but what your body's doing from the vaping. It looks like your lungs aren't happy about this, and what seems like a cold is your lungs trying to recover after each time you use your vape pen.

Patient: But my friends don't have any problems with it.

Nurse: Maybe they don't yet. Or maybe some of them never will. But the problem is, you're here today and have been before because *your* lungs aren't taking it well. And what the doctor can do is help you cut down and stop if you'll give it a chance. If today's not the day, I'd like to ask you to come in again to see me in a week. That way, you can think about it, read this pamphlet, and if you have questions, write them down. I'll answer them next week.

Patient: It probably won't help, but I'll take the paper and see you in a week.

Choices about one's diet are also major contributors to pathophysiological changes, and this can be from deficits or excesses. Some people make decisions about avoiding certain foods and end up with disorders related to certain nutritional deficits. Electrolytes are a good example of nutrients that, like acid-base balance, must be maintained

within the established window of normal ranges for proper metabolic function. Sodium is an electrolyte often first considered for its concerns when levels are high or low. Either abnormality may present with neurological changes, perhaps some mild confusion, but can be far more extreme, and/or long lasting. Sodium retention is associated with water retention, so elevated plasma sodium tends to cause hypervolemia and hypertension. Potassium can cause devastating problems if it is not kept in range: if elevated or decreased, minor symptoms may be apparent, or ultimately dysrhythmias are possible, and may be deadly. Phosphate is another electrolyte and is often overlooked for its importance in metabolic function. Recall that cellular energy involves ATP, and the P is phosphate. Therefore, without adequate levels of phosphate, ATP production is reduced. With functions as critical as those of the respiratory and cardiac systems, a constant supply of energy is necessary.

Perhaps more often considered as a nutritional abnormality is overconsumption, especially when the proper combination of necessary nutrients is not part of the diet. Rather, consumption is not only excessive but may involve improper dietary intake, such as sweetened beverages and snacks, high-sodium meals and snacks, and a lack of balance of essential dietary sources. This results in not only higher weight but also malnutrition. Overeating and subsequent higher weight may involve hyperlipidemia or be associated with hypertension or type 2 DM. Or it may be related to excessive sodium intake, and associated fluid retention and hypertension.

Physical Activity Level

One of the behaviors with an impact on cardiopulmonary function is physical activity. At least 150 minutes of moderate aerobic exercise activity weekly is recommended by the AHA (2023) to maintain and possibly improve health status and avoid complications. The success of the AHA recommendations appears to lie in patients making exercise habitual and incorporating other healthy living activities into these new lifestyle choices.

Improved circulation is one of the major benefits of increased activity, as it maximizes oxygenation and perfusion, and all body systems reap the benefits, from improved neurological function to enhanced elasticity of blood vessels and improved BP, to normalizing lipid levels and reducing atherosclerotic plaque formation and CAD.

LINK TO LEARNING

The AHA provides various resources about healthy living (https://openstax.org/r/77hearthealthy) that can be used in patient education.

Cultural Influences

Whether conscious of it or not, cultural influence is within the very fabric of people's lives. From birth, it surrounds people, and throughout the life span, it influences and guides relationships and decisions in so many ways. With regard to the cardiopulmonary system, culture may have effects on acceptance of medical advice and the healthcare system, dietary choices and traditions, how and what activities are accepted and utilized, emotional and societal support systems, and stress levels (Acare Pro, 2023).

Culture determines dietary habits. Many people in the United States, for example, continue the practice of consuming meals with meat as the primary component, potatoes or another starchy carbohydrate as a major side dish, and a small helping of vegetables. This high-calorie diet, combined with a sedentary lifestyle, increases the likelihood of weight gain; higher weight is a risk factor for cardiovascular disorders.

Adding spices for flavor is another example of cultural influence, with some adding hot and savory spices, while others minimize additive flavors. Salt is an extremely common and popular spice, and processed foods like lunch meats and canned soups tend to have high sodium content, which is contraindicated for some, particularly with cardiac conditions like hypertension and HF.

Some cultures embrace complementary alternative medicine practices, while others do not. Herbal remedies, and the notion of whether a food or beverage should be consumed at a certain temperature, are important in certain cultural settings (Acare Pro, 2023). Some drugs may be recommended to be taken on an empty stomach, or with food, and cultural influences may interfere with either medical instruction. Communication is impactful herein, as misunderstandings are possible and lead to a lack of treatment and worsening of the health condition.

While the likelihood that the exploration of influences of culture upon health status, and cardiopulmonary health in

particular, could continue with many more exemplars, the final example here is that of medical care. Cultural perspectives prompt a variety of attitudes about health care (Acare Pro, 2023): is it embraced openly and fully, or approached with extreme caution? This may be demonstrated by whom patients choose for their health care. Do they require their provider to be a well-educated physician, a naturopathic practitioner, or a neighborhood healer whose training was obtained informally but is well accepted in the area? The preference and selection as to which expertise is sought may be from cultural mores over years or perhaps even decades or longer. If patients are distrustful of medical practitioners, they are again less likely to follow recommended treatment plans.

Environmental Influences

Environmental stressors can have a negative impact on cardiopulmonary health. Living in the city can intensify these stressors. Examples of environmental stressors include air pollution, noise and light pollution, wildfires, and climate change (Münzel et al., 2021). The cardiovascular and pulmonary systems are both susceptible to these environmental influences.

Noise, especially that related to traffic, can possibly increase the risk of hypertension, MI, and stroke (Münzel et al., 2021). The premise is related to the stress response, with increased release of cortisol and catecholamines causing the signs and symptoms associated with stress. This includes SNS stimulation and often results in elevated HR and BP. If sustained, such stress-associated manifestations have the potential to lead to MI and stroke. Climate change is also implicated in contributing to stress-related changes, such as cardiac strain and sleep disturbances, as well as inflammatory responses to airborne pollutants such as dust and wildfire smoke (Münzel et al., 2021).

Air pollution is identified as a contributor to cardiovascular disease itself, as sources such as automobile exhaust or burning of fossil fuels release chemicals into the air (Münzel et al., 2021). Such chemicals can cause mild irritation or an allergic response or may be toxic and lead to inflammatory and immune responses, and infections. With long-standing exposure, CAD can develop, with the risk of ACS including MI and ultimately HF or death. Dysrhythmias and stroke are also potential results from exposure to air pollutants.

Environmental influences on the pulmonary system focus on a variety of means of damaging lungs through accelerated aging and reducing cellular healing abilities (Eckhardt & Wu, 2021). Means of pulmonary damage include inflammation, oxidation, damage to DNA, and cellular dysfunction, including impaired healing. Environmental exposures may also cause allergic responses, which can vary from mild to severe.

Environmental exposures to such substances toxic to the respiratory system include tobacco smoke, combustion of fossil fuels, and automobile exhaust. Tobacco smoke contains numerous chemicals, which can cause mild results like inflammation or may be carcinogenic. Burning of fossil fuels releases sulfur and nitrogen dioxide (among other chemicals), which contribute to pulmonary damage (Eckhardt & Wu, 2021). Employment-related exposure may also include populations who mine granite or sandstone and are therefore exposed to silica dust, and coal miners, who are exposed to coal dust and at risk for pneumoconiosis (“black lung”). Mesothelioma is another possible lung disorder related to environmental exposure to asbestos.

Diagnostic Testing Used to Monitor Cardiopulmonary Functioning

As varied as the potential dysfunctions of the cardiopulmonary system may be, so too are the diagnostic tests used to determine what is happening with a patient, and the extent of the dysfunction(s). Such testing may be invasive or noninvasive, may concentrate on the cardiovascular system or the respiratory system, and may provide information about general function (or lack thereof), infection, or injury.

Cultures

Cultures are obtained to identify whether an infection of some sort is present by growing particular microbes in the laboratory. Varied sources can be cultured, including samples of blood, sputum, urine, or swabs from a wound or throat (MedlinePlus, 2023). Not only can cultures verify the presence of bacteria in general, but identification of which bacteria are present is typically provided. Other microbes may also be cultured, including mycobacterium (the specific type of bacteria that causes tuberculosis), viruses, and fungi.

Cultures are routinely allowed to grow for forty-eight to seventy-two hours; particularly virulent microbes often grow quickly and are clearly identified within forty-eight hours. To ensure accuracy in results, some cultures are grown for longer periods. Examples include bacteria cultures incubated for up to five days, fungal cultures for up to four weeks, and mycobacterial cultures for three to eight weeks (Van Leeuwen & Bladh, 2023).

In addition to culture, for treatment purposes, sensitivity is often ordered. This offers identification of a particular bacteria and exposes the microbes to various antibacterial drugs to distinguish the drugs that are effective, most effective, or ineffective in reducing or eliminating the microorganism(s). For what is anticipated to be a simple infection, the healthcare provider may order merely a culture, but sensitivity results can be extremely helpful in narrowing broad-spectrum antibacterials to effective but narrower-spectrum drugs. Hospitalized patients frequently have complicated infections, and bacterial resistance is a reality, so it is common for healthcare providers to order the culture and sensitivity (C&S) at the time of the original order.

Blood

Blood cultures are ordered when sepsis is suspected. In many facilities, laboratory personnel draw blood samples for blood cultures to avoid contamination of the sample. With some infections, pathogens are only found in the blood intermittently, so a series of three or more blood cultures, as well as blood draws from different veins, may be performed to increase the chance of finding the infection.

Blood cultures (Figure 19.14) are incubated for several days before being reported as negative. Some types of bacteria and fungi grow more slowly than others and/or may take longer to detect if initially present in low numbers.

FIGURE 19.14 Blood collection bottles can be used for aerobic and anaerobic cultures. (credit: modification of work "Blood Culture Bottles" by "Moose G."/Flickr, CC BY 2.0)

A positive result indicates bacteria have been found in the blood (bacteremia). Other types of pathogens, such as a fungus or a virus, may also be found in a blood culture. When a blood culture is positive, the specific microbe causing the infection is identified, and susceptibility testing is performed to inform the healthcare provider which antibiotics or other medications are most likely to be effective for treatment.

Sputum

A sputum culture is a diagnostic test that evaluates the type and number of bacteria present in sputum. The patient is asked to cough deeply and spit any mucus that comes up into a sterile specimen container. The sample is sent to a laboratory where it is placed in a special dish (Figure 19.15) and is watched for two to three days or longer to see if bacteria or other disease-causing germs grow. Acid-fast bacillus testing, along with C&S testing, is used to diagnose tuberculosis (TB). When testing for TB, at least three consecutive samples are collected, with at least one being an early morning sample.

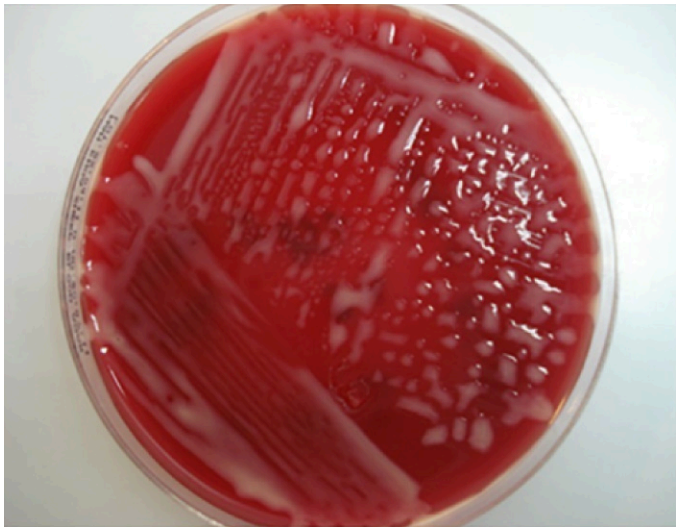


FIGURE 19.15 An image of a sputum culture, which can be used to diagnose diseases like TB. (credit: modification of work by National Library of Medicine; CC BY 3.0)

Blood Gases

Blood gases are done to acquire information as to a patient's oxygenation and acid-base balance. This includes pH, partial pressure of CO_2 ($PaCO_2$), partial pressure of O_2 (PaO_2), O_2 saturation (SaO_2), bicarbonate (HCO_3), and base excess (the amount of base present in the blood).

Blood gas samples are drawn with a specific heparinized syringe that only needs a small sample of blood. In years past, the syringe had to be placed on ice and sent to the laboratory for testing. Now it is more common to use a point-of-care device called an iSTAT. From the syringe, blood is placed into the receiving area of an iSTAT cartridge, which is then placed into the analyzer. Within approximately two minutes, the results are available.

Arterial

Arterial blood gases (ABG) are measured by collecting blood from an artery, rather than a vein, and are most commonly collected via the radial artery. Acquiring an ABG requires training and is often painful for the patient. Therefore, this test is not done on a routine basis and is not typical for a stable patient. In severe illness, however, with a patient whose O_2 status is questionable or at risk, the information from an ABG can provide the necessary results for guiding immediate care and planning ongoing interventions.

While some components of blood gas testing are closely correlated between an arterial and venous sample, those indicative of oxygenation ($PaCO_2$, PaO_2) are most reliable if the source is arterial (Lentz et al., 2019). Acid-base information: pH, HCO_3, and base excess (or deficit) demonstrate a reasonable correlation between arterial and venous samples. For accuracy in the results of bicarbonate, a plasma sample for specific chemistry should be obtained, as it is not a measured value as part of a blood gas (Lentz et al., 2019).

PATIENT CONVERSATIONS

ABG

Scenario: The patient is Gloria, who is 74 years old; her history includes emphysema and frequent urinary tract infections. She was brought to the hospital by her son, who found her sitting in her recliner, very confused. She is now in the ICU, and the nurse is preparing to draw an ABG. Her son, Reggie, is in the room with her.

Nurse: Gloria, I need to get a blood sample from your wrist.

Patient: MmmHmm. Oh, what? Who?

Nurse: I'm going to put a needle in your wrist for a blood sample. Reggie, would you sit on that side of her and hold her hand?

Patient's son She already has an IV in her arm. Won't that work?

Nurse: This is different, this sample has to come from her artery. I want to use the one on the inside, where we often feel for a pulse, the radial artery. This will tell us more about why she was so quiet and confused when you found her, and why she's still like that. And if her emphysema is worse now.

Patient's son Oh, okay. I think she had that last time. She was on a respirator, you know, about three months ago. Her breathing got real bad.

Nurse: Yes, I'll bet you're right. She probably had this done then, too. So, I'm going to draw from her right side, and if you can just hold her left hand and let her know you're here. Try to keep her still, so she doesn't jump or pull away when she feels the stick. The results only take a couple of minutes, so we'll have a better idea of things when I call the doctor with the results. Thanks for your help.

Venous

Venous blood gas (VBG) acquisition is considered less painful than an arterial sample; veins tend to be more superficially located and are often visible and/or palpable. Arteries are deeper and the puncture for an ABG is done blindly, based on palpation. Occasionally, while attempting an ABG, a venous sample is accidentally obtained, or a mixture of arterial and venous blood. In such a circumstance, the results may provide inadequate information. Because a VBG is less painful to draw, if the physician is attempting to determine acuity versus chronicity, hypercarbia, or whether the problem has a respiratory or metabolic cause (Lentz et al., 2019), a VBG may be ordered.

Cardiac Biomarkers

There are three major cardiac biomarkers: creatine kinase (CK), troponin I, and creatine kinase myocardial band (CK-MB). CK-MB and troponin I are the two tests commonly ordered when a MI is suspected, or an exacerbation of HF. CK-MB is elevated within four to six hours after an MI, peaks within twenty-four hours, and normalizes within seventy-two hours (Van Leeuwen et al., 2023). Troponin I levels rise between two and six hours post-MI, followed by two peaks—the first between fifteen and twenty-four hours postinjury, and again at sixty to eighty hours after injury.

Another cardiac biomarker that is used to diagnose HF is the brain natriuretic peptide (BNP). BNP is used not only for initial diagnostic purposes but also to manage ongoing treatment, assess progression of HF, and evaluate patients during exacerbations (Van Leeuwen & Bladh, 2023). BNP rises when a stretch of the heart occurs from hypervolemia, and so as the congestive nature of HF increases, so does this peptide.

Capnography

Two methods are used to monitor ventilation and oxygenation: **capnography** (the amount of CO_2 at the end of exhalation) and pulse oximeter, respectively. Since capnography measures exhaled CO_2, it is also referred to as end-tidal CO_2 ($ETCO_2$); the normal range is 35 to 45 mm Hg (Sullivan, 2020). Commonly, patients whose medical condition indicates the necessity for $ETCO_2$ monitoring are critically ill. Patients in low perfusion states (e.g., shock, hypovolemia) may be candidates for capnography, as healthcare providers are seeking specific information about ventilatory status and the ability of the tissues to access circulating O_2. It can also be a helpful tool for monitoring interventions and modifying treatment promptly (Sullivan, 2020).

Capnography can be done with a special type of nasal cannula, which can deliver O_2 and obtain $ETCO_2$ results. Or the nasal prongs can be in place while a patient is receiving O_2 by mask (simple, continuous positive airway pressure [CPAP], or nonrebreather). There is also an attachment that can be used in conjunction with the ventilator for mechanically ventilated patients to be continuously monitored. There are specific monitors for $ETCO_2$, whether static or portable, and specific settings, as capnography is done by anesthesia providers during surgery, and in ICUs it is monitored by nurses in addition to continuous monitoring of other vital functions, like pulse oximetry, RR, HR, and BP. The waveform depicts the respiratory cycle and indicates the amount of CO_2 at each phase (Sullivan, 2020). Waveform variations (Figure 19.16) from the rather square shape of normal indicate likely pathophysiological changes, like pulmonary embolism, pneumothorax, or airway obstruction (Duckworth, 2017).

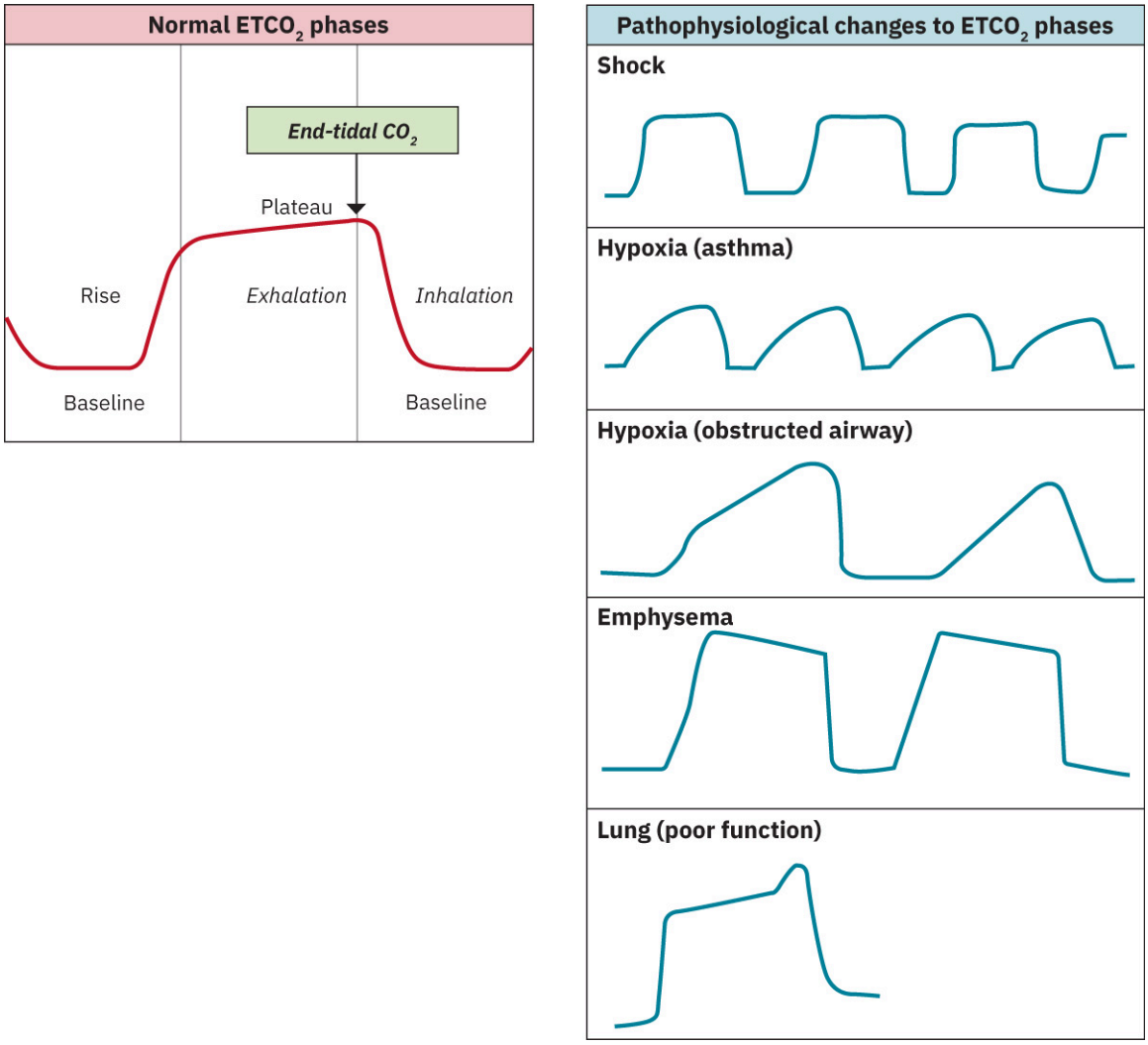


FIGURE 19.16 Normal $ETCO_2$ waveform and respiratory phases and variations to the waveform in different pathophysiological conditions. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Pulse Oximetry

To understand pulse oximetry, it is important to recall the hemoglobin molecule and its relationship to O_2. Hemoglobin is a molecule within red blood cells, and each of these molecules can carry four molecules of O_2. A pulse oximeter is a noninvasive device (Figure 19.17) placed on the finger that is able to read this saturation of hemoglobin using light. It is portable in many settings, including available for home use, or attached for continuous monitoring in settings like emergency departments, ICUs, or operating rooms.

FIGURE 19.17 A portable pulse oximetry device that goes on a patient's finger. (credit: Untitled by "MIKI Yoshihito"/Flickr, CC BY 2.0)

A normal saturation at sea level is 94 to 98 percent. At elevation, it may be acceptable for patients' pulse oximetry to be lower, yet still be considered normal. Also, certain pathophysiological changes affect pulse oximetry or have effects on what percentage is desired for a particular patient. In patients with COPD or emphysema, a normal oxygen level is 88 to 90 percent, because lung disease causes a lower O_2 and higher $PaCO_2$ balance. A patient who has experienced blood loss after a surgery or traumatic injury or is anemic because of a disorder like iron deficiency may have a lack of O_2 being circulated because there is a lack of carriers.

LINK TO LEARNING

A demonstration of teaching a patient how to use a peak expiratory flow rate (PEFR) for monitoring asthma (https://openstax.org/r/77PEFRTeachPat) is presented in this video.

Pulmonary Function Studies

To help diagnose respiratory dysfunction and determine whether a problem is restrictive or obstructive, pulmonary function tests (PFTs) may be performed (Figure 19.18 and Table 19.3). A restrictive disorder is when air has difficulty flowing out of the lungs, and an obstructive disorder is when the movement of airflow is restricted by the inability of lung tissue and/or chest wall to expand. The results of PFTs are dependent on the effort of the patient, and results should be considered with the patient's history when reaching a diagnosis (Ponce et al., 2022).

FIGURE 19.18 A nurse sets up a pulmonary function test for a patient. (credit: Untitled by Deidre Smith/Naval Hospital Jacksonville/Navy Medicine/Flicker, Public Domain)

Type of Test	Lung Volumes	Tests	Results
Spirometry Device: Spirometer • Measures amount and speed of air inhaled/ exhaled • Data collected to computer • Records results on graph paper Process: • Nose clipped closed • Patient breathes into mouthpiece at three phases: 1. Maximal inspiration 2. Burst expiration 3. Continue to exhale until end of test Use: • Establish baseline for future comparison • Compare to previous for follow-up on disease process (improvement or deterioration)	• Tidal volume (TV or VT): The volume of air inhaled or exhaled during normal breathing • Functional reserve capacity (FRC): The volume of air left in lungs after normal exhalation • Vital capacity (VC): The total volume of air that can be exhaled after maximum inspiration • Forced vital capacity (FVC): The volume of air exhaled as powerfully and quickly as possible • Forced expiratory Volume (first second) (FEV1): The volume of air expired during the first second of forced expiration • FEV1/FVC Ratio: Ratio of FEV1/FVC • Expiratory Reserve Volume (ERV): The volume of air maximally exhaled after end-inspiration • Residual volume (RV): The volume of air left in the lungs after maximum exhalation • Total lung capacity (TLC): The total volume of the lungs at the end of maximum inspiration • Inspiratory Reserve Volume (IVR): The volume of air that	FRC results can be used to estimate results of other volumes FEV1 classifies the severity of obstructive lung diseases based on percent of predicted values. FEV1/FVC ratio helps distinguish obstructive from restrictive lung disease With FEV1/FVC ratio, TLC can be used to evaluate restrictive lung disease	FEV1 greater than 70 percent predicted = MILD disease 60 to 69 percent = MODERATE disease 50 to 59 percent = MODERATE to SEVERE disease 35 to 49 percent = SEVERE disease Less than 35 percent = VERY SEVERE disease FEV1/FVC ratio greater than 0.70 with TLC less than 80 percent predicted value indicates restrictive lung disease

TABLE 19.3 Pulmonary Function Testing (Sources: Johns Hopkins Medicine, 2023a; Johns Hopkins Medicine, 2023b; Ponce et al., 2022.)

Type of Test	Lung Volumes	Tests	Results
	can be maximally inhaled from end-inspiratory tidal breathing		
Peak Expiratory Flow Rate Device: Peak Flow Meter (PFM) Process: Exhale forcefully into PFM	Peak expiratory flow rate (PEFR): The fastest rate that air can be exhaled	PEFR assists patients to manage lung diseases (e.g., asthma, emphysema, chronic bronchitis) Guides as to disease progress/current status	Results use system of traffic light: GREEN—Go: Continue current treatment(s) YELLOW—Caution: Call healthcare provider with results from PFM RED—Stop/Emergency: Use rescue inhaler Call HCP Go to ED

TABLE 19.3 Pulmonary Function Testing (Sources: Johns Hopkins Medicine, 2023a; Johns Hopkins Medicine, 2023b; Ponce et al., 2022.)

LINK TO LEARNING

Learn more about PFTs and associated terminology, reasons, and risks (https://openstax.org/r/77PFTsInfo) at this website.

Electrocardiogram

ECGs use a special type of paper, which looks rather like fine graph paper: the horizontal lines indicate the passage of time, with each small box representing 0.04 seconds and each larger box, which contains five small boxes, indicating 0.2 seconds. The vertical lines indicate electrical voltage. When an ECG tracing is viewed, there is a line established that indicates a straight passage of time: measurements of components of the cardiac cycle are made based on deflection and return from and to this line. This is referred to as the **isoelectric line** or baseline. Most commonly, nurses note whether the inflection rises from the isoelectric line or has a downward path, or a combination of both. The voltage is not necessarily routinely measured (Figure 19.19).

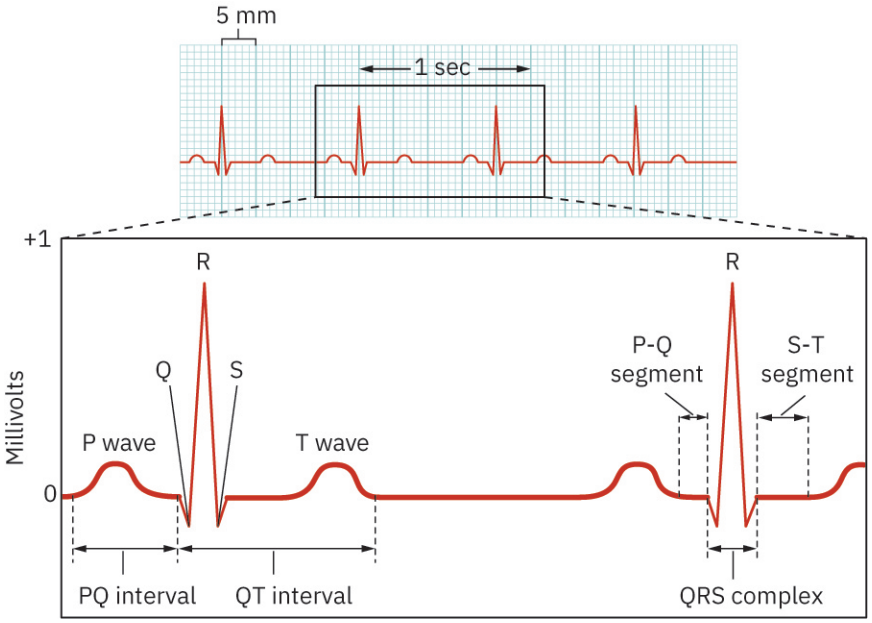


FIGURE 19.19 Electrocardiogram tracing including waves, complexes, segments, and intervals. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Nursing education programs provide introductions to cardiac rhythms—the depth of information depends on the type of program and other specific requirements. In settings like the ED, ICU, telemetry, and postanesthesia care unit (PACU), nurses are educated to recognize normal and abnormal traits of the cardiac cycle and, depending on facility policy, to provide a **rhythm strip** (six-second tracing of one or two leads from a continuous monitor), with measurements to indicate any noted abnormalities in conduction.

The electrical impulses in the heart produce electrical currents that flow through the body and can be measured on the skin using electrodes. This information can be observed as an electrocardiogram (ECG), a recording of the electrical impulses of the cardiac muscle (Figure 19.20). ECGs are extremely valuable for diagnosis and guiding treatment of patients with cardiac symptoms.

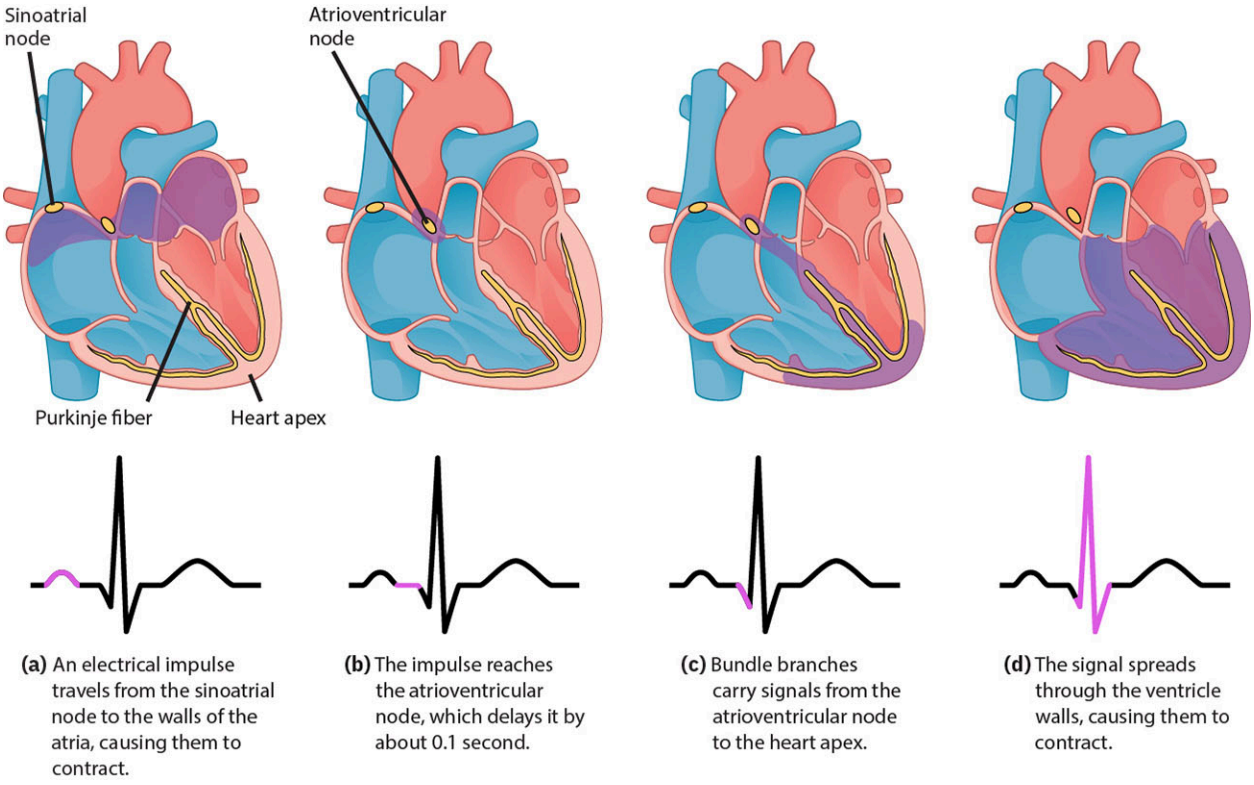


FIGURE 19.20 The beating of the heart is regulated by an electrical impulse that causes the characteristic reading of an ECG. The signal is initiated at the sinoatrial valve. The signal then (a) spreads to the atria, causing them to contract. The signal is (b) delayed at the atrioventricular node before it is passed on to the (c) heart apex. The delay allows the atria to relax before the (d) ventricles contract. The final part of the ECG cycle prepares the heart for the next beat. (credit: modification of work from *Biology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

An ECG is often combined with cardiac biomarker testing when acute symptoms indicative of MI or other cardiac emergencies are present. ECG can also be performed to monitor conditions and treatments or used for routine screening for cardiomyopathy. An ECG machine conventionally has twelve leads, which are labeled with their respective placement on the body (Figure 19.21).

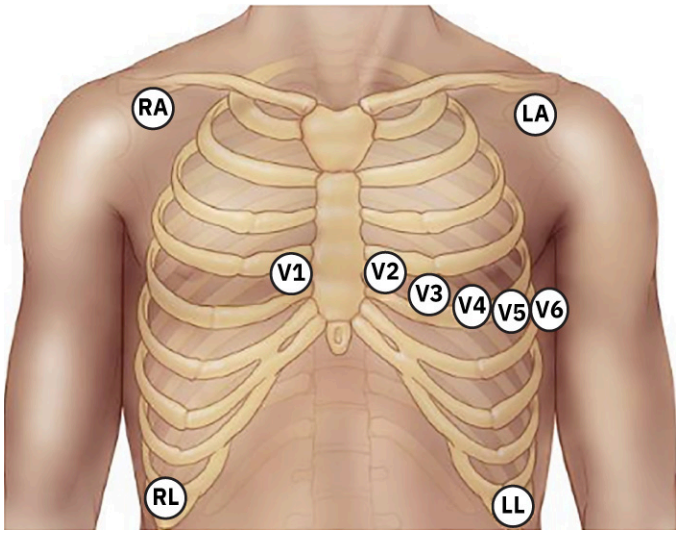


FIGURE 19.21 ECG electrode placement. (credit: modification of work by Jacqueline Christianson/Nurses International, CC BY 4.0)

Small graph paper (Figure 19.22) is used to record and measure an ECG. The vertical axis shows the electrical signal strength, and the horizontal axis shows the passage of time. Measurements are taken based on the boxes. Each large box is outlined in a darker shade and contains five smaller boxes, both horizontally and vertically. Horizontally, each small box shows the passage of 0.04 seconds, so each large box (four small boxes) indicates 0.2 seconds.

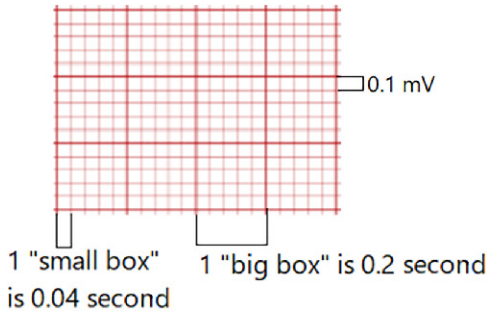


FIGURE 19.22 This example shows typical ECG graph paper. (credit: modification of work by Jacqueline Christianson/Nurses International, CC BY 4.0)

On the ECG paper, the firing of the SA node and the electrical signal to the AV node, with atrial contraction, is known as the P wave. Next the AV node receives and holds the signal after the atria contract, while the ventricles fill, called the PR segment. The PR interval is the time from the beginning of the P wave to the start of the Q wave. The QRS complex is the flow of electricity from the AV node through the bundle of His and to the Purkinje fibers—this leads to ventricular contraction. Last is the T wave, when the ventricles repolarize. The QT interval measurement is taken from the beginning of the Q through the end of the T wave. Finally, the ST segment measurement is from the end of the S to the start of the T wave (Figure 19.23) (Christensen et al., 2023).

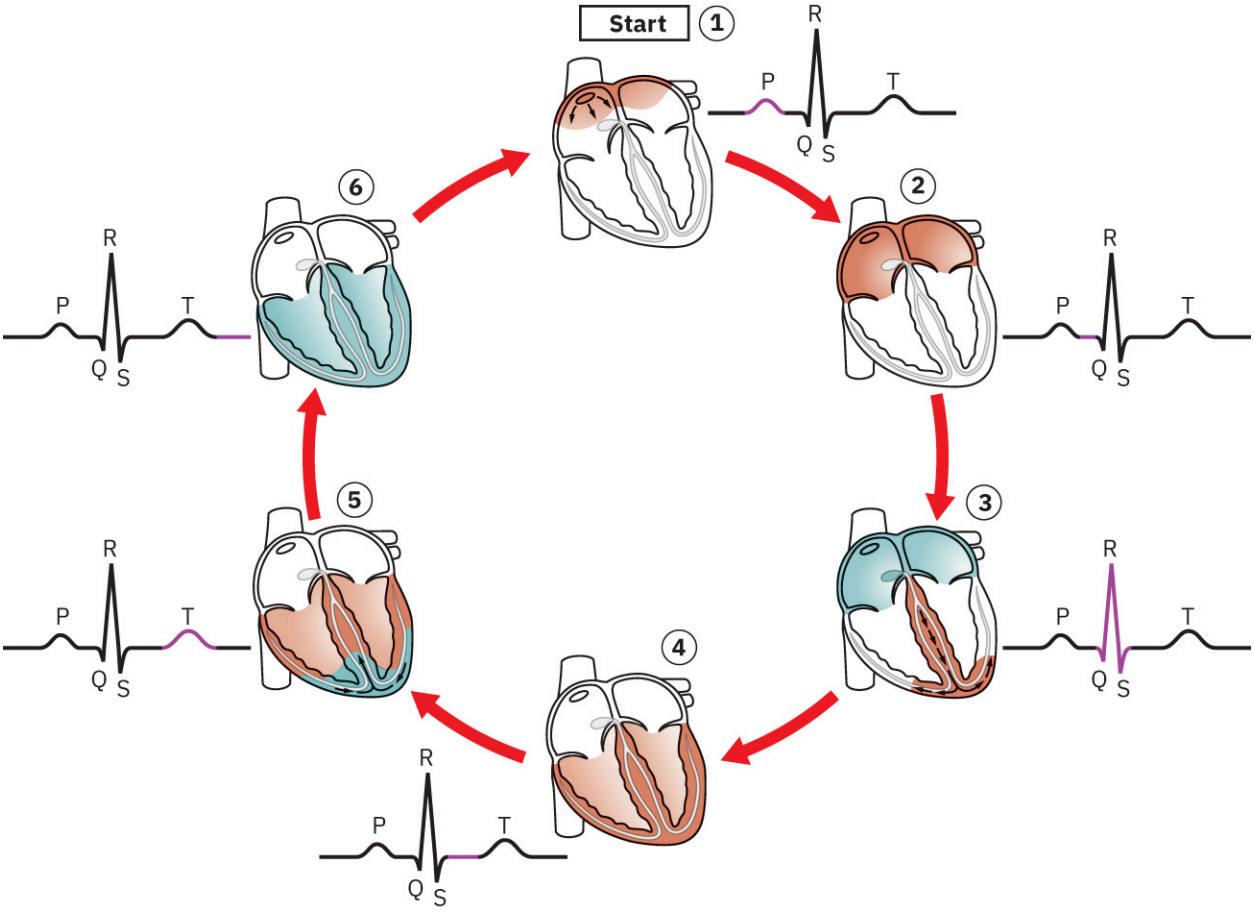


FIGURE 19.23 This diagram correlates an ECG tracing with the electrical and mechanical events of a heart contraction. Each segment of an ECG tracing corresponds to one event in the cardiac cycle. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Familiarize yourself with the ECG (https://openstax.org/r/77ECGInfo) by watching this video.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 2

Refer back to Unfolding Case Study #4: Part 1 for a review on the patient data.

Provider's Orders	**1145: New orders** • Admit to telemetry unit. • Perform 12-lead ECG. • Administer oxygen therapy to maintain oxygen saturation > 92 percent. • 20 mg furosemide IV STAT.
Nursing Notes	**1200:** 12-lead ECG completed; results show sinus tachycardia. 2 L oxygen via nasal cannula applied, patient reports slight improvement in dyspnea. IV placed in right AC, 20 mg furosemide IV administered. Patient instructed to call before getting up to use bathroom. Patient has not voided since admission. Patient admitted to room on cardiac unit and handoff given to telemetry nurse.
Flow Chart	**1230: Assessment** Blood pressure: 150/82 mm Hg Heart rate: 108 beats/minute Respiratory rate: 22 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 93 percent on 2 L nasal cannula Pain: 6/10 (joint pain)

4. Generate solutions: What is the rationale for each of the provider's orders?
5. Take action: What additional actions should the nurse take at this time?
6. Evaluate outcomes: What signs indicate that the patient's condition is improving? Does anything indicate that the patient's condition is not improving?

19.4 Management of Impaired Cardiopulmonary Functioning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe nursing actions for management of impaired cardiopulmonary functioning
- Understand interdisciplinary collaboration for management of impaired cardiopulmonary functioning
- Describe emergency interventions for impaired cardiopulmonary functioning

Nurses are involved in the management of cardiopulmonary care throughout the care plan, from assessment and planning through evaluation and reassessment. Nursing actions while caring for patients with impaired cardiopulmonary function are varied, from routine to emergent care. Patients with cardiovascular and/or pulmonary dysfunctions may be stable or experiencing an emergency event, such as a deadly cardiac rhythm or a respiratory or cardiac arrest. Depending on the care setting, nurses have to be able to respond and act to patients' changes in status, with interventions, patient education, and guidance regarding self-monitoring, through drug therapy (routine and emergent), defibrillation, and CPR. Nurses are also part of a healthcare team and as such work with other members from different disciplines. Interdisciplinary care provides a holistic approach to patients and their care and brings about positive outcomes.

Nursing Actions

Nurses are directly involved in patient care. From assessment to evaluation, nurses are creating, implementing, and

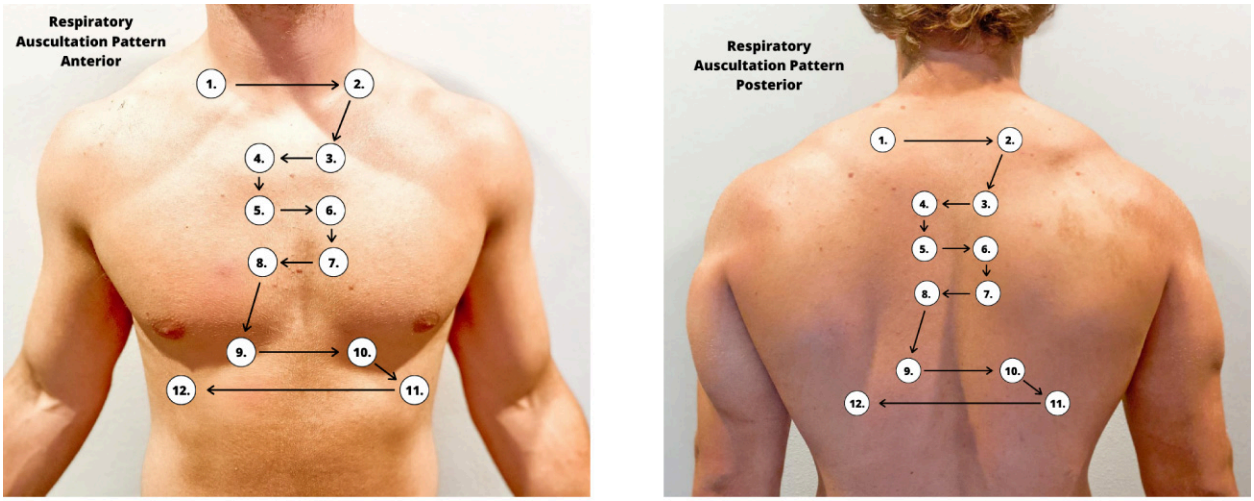
evaluating their care plans based on the current status of their patients. Nursing actions relative to the cardiopulmonary system reflect particular actions designed for the respiratory system and those for the cardiovascular system. Some interventions, like O_2 therapy and behavioral modifications, are apt to benefit both components of the cardiopulmonary system. Even drug therapy in one category is prone to assist with symptoms or deficits in the other, as an improvement in ventilation, oxygenation, or perfusion can be expected to improve the others. In this section, specifics as to assessment, a variety of tools and techniques, medications, and topics for patient education are discussed. Additionally, interdisciplinary collaborative examples are explored as are emergency interventions specific to the respiratory and cardiovascular systems.

Respiratory Assessment

The evaluation of the respiratory system includes collecting subjective and objective data through a detailed interview and physical examination of the thorax and lungs. This examination can offer significant clues related to issues associated with the body's ability to obtain adequate oxygen to perform daily functions. Inadequacy in respiratory function can have significant implications for the overall health of the patient.

Collect subjective data using interview questions, paying particular attention to what the patient is reporting. The interview should include questions regarding any current and past history of respiratory health conditions or illnesses, medications, and reported symptoms. Consider the patient's age, gender, family history, race, culture, environmental factors, and current health practices when gathering subjective data.

A focused respiratory objective assessment includes interpretation of vital signs; inspection of the patient's breathing pattern, skin color, and respiratory status; palpation to identify abnormalities; and auscultation of lung sounds (Figure 19.24) using a stethoscope. The nurse must have an understanding of what is expected given a patient's age, gender, development, race, culture, environmental factors, and current health condition to determine the meaning of the data that are being collected.



(a) (b)

FIGURE 19.24 There is a systematic approach to auscultation of the chest for breath sounds, (a) anterior and (b) posterior. (credit a: modification of work "Anterior Respiratory Auscultation Pattern.png" by Meredith Pomietlo, CC BY 4.0; credit b: modification of work "Posterior Respiratory Auscultation Pattern.png" by Meredith Pomietlo, CC BY 4.0)

LINK TO LEARNING

Visit Lung Sounds Made Easy (https://openstax.org/r/77LungsSounds) to learn more about abnormal lung sounds.

When certain findings indicate further exploration, palpation and percussion may be performed. An example is if on inspection the nurse finds apparent edema around one or both collarbones, especially if the patient was recently intubated with an ETT. Palpation can be used in such a situation to assess for **subcutaneous emphysema** (air in the subcutaneous tissue), as the tiny air pockets feel crispy (**crepitus**) to the fingertips. Percussion is helpful for the nurse to determine underlying structures in the pulmonary cavity, whether a region that should be air filled instead

contains fluid or a solid mass. Refer to Table 19.4 for expected and unexpected assessment results.

Assessment	Expected Findings	Unexpected Findings (Document and Notify Provider if a New Finding*)
Inspection	• Effortless work of breathing • Regular breathing pattern • Respiratory rate within normal range for age • Symmetrical chest expansion • Absence of cyanosis or pallor • Absence of use of accessory muscles, retractions, and/or nasal flaring • Anteroposterior: transverse diameter ratio 1:2	• Labored breathing • Irregular rhythm • Increased or decreased respiratory rate • Accessory muscle use, pursed-lip breathing, nasal flaring (infants), and/or retractions • Presence of cyanosis or pallor • Asymmetrical chest expansion • Clubbing of fingernails
Palpation	• No pain or tenderness with palpation • Skin warm and dry • No crepitus or masses	• Pain or tenderness with palpation • Cool, clammy, or moist skin • Crepitus, palpable masses, or lumps
Percussion	• Clear, low-pitched, hollow sound in normal lung tissue	• Dull sounds heard with high-density areas, such as pneumonia or atelectasis
Auscultation	• Bronchovesicular and vesicular sounds heard over appropriate areas • Absence of adventitious lung sounds	• Diminished lung sounds • Adventitious lung sounds, such as crackles, rales, wheezes, stridor, or pleural rub
*CRITICAL CONDITIONS to report immediately		• Decreased oxygen saturation (<92 percent or as prescribed) • Pain • Worsening dyspnea • Decreased level of consciousness, restlessness, anxiousness, and/or irritability

TABLE 19.4 Expected versus Unexpected Respiratory Assessment Findings

Cardiovascular Assessment

The evaluation of the cardiovascular system includes a thorough medical history and a detailed examination of the heart and peripheral vascular system. Nurses must incorporate subjective statements and objective findings to elicit clues of potential signs of dysfunction. Symptoms like fatigue, indigestion, and leg swelling may be benign or may indicate something more ominous. As a result, nurses must be vigilant when collecting comprehensive information to utilize their best clinical judgment when providing care for the patient.

The subjective assessment of the cardiovascular and peripheral vascular system is vital for uncovering signs of potential dysfunction. To complete the subjective cardiovascular assessment, the nurse begins with a focused interview. The focused interview explores past medical and family history, medications, cardiac risk factors, and reported symptoms. Symptoms related to the cardiovascular system include chest pain, peripheral edema, unexplained sudden weight gain, shortness of breath (dyspnea), irregular pulse rate or rhythm, dizziness, or poor peripheral circulation. Any new or worsening symptoms should be documented and reported to the healthcare

provider.

The physical examination of the cardiovascular system involves the interpretation of vital signs, inspection, palpation, and auscultation of heart sounds. Jugular venous distension may be visible, especially as patients are repositioned. As the nurse is examining the patient, palpation may accompany, as clothing is moved or removed and the patient is touched. Further signs of perfusion can be assessed, like the temperature and moisture of the skin (e.g., warm and dry versus cool and clammy). To complete palpation, capillary refill and peripheral pulses should be assessed. After completing a cardiovascular assessment, it is important for the nurse to use critical thinking to determine whether any findings require follow-up (Table 19.5).

Assessment	Expected Findings	Unexpected Findings (Document and Notify Provider if a New Finding*)
Inspection	Apical impulse may or may not be visible	• Scars not previously documented that could indicate prior cardiac surgery • Heave or lift observed in the precordium • Chest anatomy malformation
Palpation	Apical pulse felt over midclavicular fifth intercostal space	• Apical pulse felt to the left of the midclavicular fifth intercostal space • Additional movements over precordium such as a heave, lift, or thrill
Auscultation	S1 and S2 heart sounds in regular rhythm	• Irregular heart rhythm • Extra heart sounds such as a murmur, S3, or S4
*CRITICAL CONDITIONS to report immediately		• Symptomatic tachycardia at rest (HR >100 bpm) • Symptomatic bradycardia (HR <60 bpm) • Hypotension (systolic BP <100 mm Hg) • Orthostatic BP changes • New abnormal cardiac rhythm • New extra heart sounds such as a murmur, S3, or S4 • Reported chest pain, calf pain, or worsening shortness of breath

TABLE 19.5 Expected versus Unexpected Cardiac Assessment Findings

Auscultation is routinely performed over five specific areas of the heart to listen for corresponding valvular sounds. These auscultation sites are often referred to by the mnemonic “APE To Man,” referring to aortic, pulmonic, Erb point, tricuspid, and mitral areas (Figure 19.25).

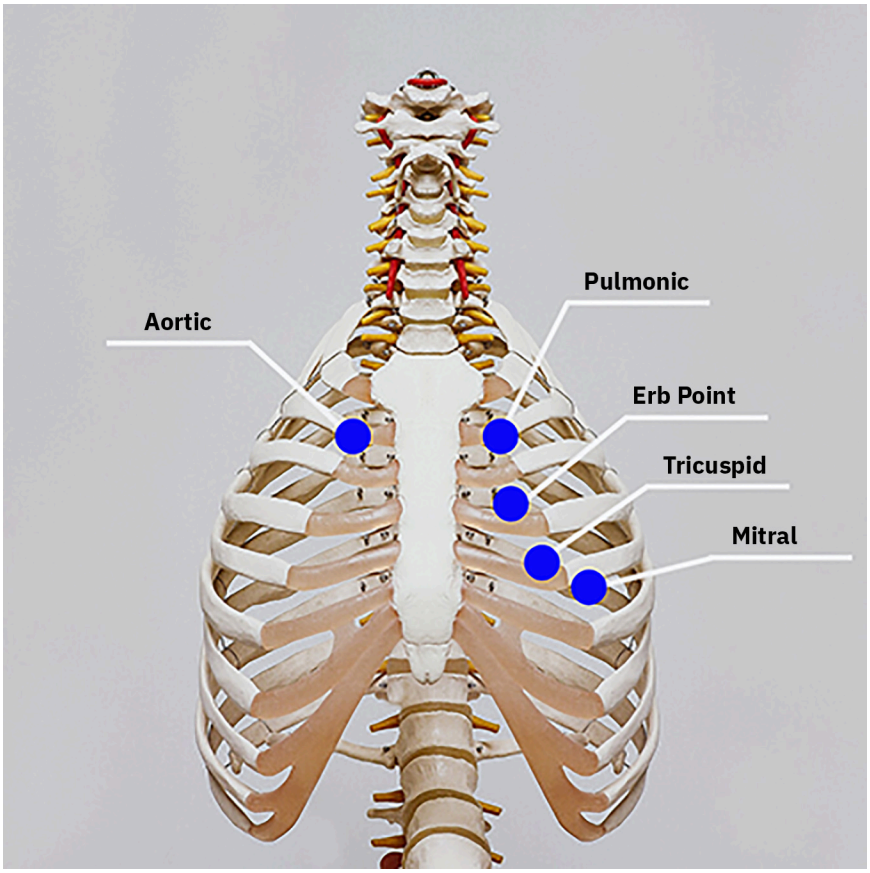


FIGURE 19.25 Locations for heart auscultation. (credit: modification of work "*Cardiac Auscultation Areas*" by Meredith Pomietlo, CC BY 4.0)

Auscultation usually begins at the aortic area (upper right sternal edge). Use the diaphragm of the stethoscope to carefully identify the S1 and S2 sounds. They will make a "lub-dub" sound. Note that when listening over the area of the aortic and pulmonic valves, the "dub" (S2) will sound louder than the "lub" (S2). Move the stethoscope sequentially to the pulmonic area, Erb point, and tricuspid area. Repeat this process with the bell of the stethoscope. The apical pulse should be counted over a sixty-second period. For an adult, the HR should be between 60 and 100 with a regular rhythm to be considered within normal range.

LINK TO LEARNING

A review of blood flow and the heart's sounds (https://openstax.org/r/77BloFlowHeaSou) is provided in this video. Listen for normal and abnormal sounds and what they mean.

The first heart sound (S1) identifies the onset of systole, and the second heart sound (S2) identifies the end of systole and the onset of diastole; when the semilunar valves close, the AV valves open, and the ventricles fill with blood. When auscultating, it is important to identify the S1 ("lub") and S2 ("dub") sounds, evaluate the rate and rhythm of the heart, and listen for any extra heart sounds.

Encourage Breathing Techniques

There are several techniques a nurse can teach a patient to use to enhance their breathing and coughing. These techniques include diaphragmatic breathing, pursed-lip breathing, incentive spirometry, and coughing and deep breathing.

Diaphragmatic Breathing

Diaphragmatic breathing is a technique that is helpful for patients who are tachypneic, whether from a physiological source or anxiety. The technique helps focus attention on breathing and consciously learn to control it. The nurse teaches the patient to intentionally realize whether the chest or the abdomen is the source of breaths. It is often

recommended to advise the patient to place a hand on the chest and one on the abdomen and self-assess the source. This begins the slowing and relaxing process. Once the patient realizes the source of breath is the chest, teaching is aimed at the patient redirecting attention toward breathing from the abdomen (diaphragm). With concentration on the technique, the tachypnea should begin to resolve, and with it, an improvement as the physical response to pH changes from hyperventilation normalizes and/or a sense of relaxation and anxiety reduction takes place. Sometimes the anxiety involved with severe dyspnea, or from a mental health situation, may respond well to anxiolytic drug therapy in addition to diaphragmatic breathing.

Pursed-Lip Breathing

Pursed-lip breathing is a technique that allows people to control their oxygenation and ventilation. The technique requires a person to inspire through the nose and exhale through the mouth at a slow, controlled flow. This type of exhalation gives the person a puckered or pursed appearance. By prolonging the expiratory phase of respiration, a small amount of positive end-expiratory pressure is created in the airways that helps to keep them open so that more air can be exhaled, thus reducing air trapping that occurs in some conditions such as COPD. Pursed-lip breathing often relieves the feeling of shortness of breath, decreases the work of breathing, and improves gas exchange. People also regain a sense of control over their breathing while simultaneously increasing their relaxation.

Incentive Spirometry

An incentive spirometer is a medical device often prescribed after surgery to prevent and treat atelectasis (Figure 19.6). Atelectasis occurs when alveoli become deflated or filled with fluid, and this can lead to pneumonia. While sitting upright, the patient should breathe in slowly and deeply through the tubing with the goal of raising the piston to a specified level. The patient should attempt to hold their breath for five seconds, or as long as tolerated, and then rest for a few seconds. This technique should be repeated by the patient ten times every hour while awake. The nurse may delegate this intervention to unlicensed assistive personnel, but the frequency at which it is completed and the volume achieved should be documented and monitored by the nurse.

Coughing and Deep Breathing

Teaching the coughing and deep breathing technique is similar to incentive spirometry, but no device is required. The patient is encouraged to take deep, slow breaths and then exhale slowly. After each set of breaths, the patient should cough. This technique is repeated three to five times every hour.

REAL RN STORIES

Preventive Pulmonary Toilet

Nurse: Aarti, RN
Clinical setting: ICU
Years in practice: 2
Facility location: San Jose, California

My patient assignment for the night was a male (Mr. Leonard, or Mr. L) who had undergone coronary artery bypass grafting (CABG) earlier in the day. His surgery had gone well, with no major events during or in the first few hours of recovery in the ICU. As we did shift report, and bedside check, hemodynamics were stable, and Mr. L's major issue was pain. I brought a syringe of morphine with me when I did his initial assessment and gave him his first divided dose. By the time I was done with a head-to-toe at 7:30 p.m., he was gently snoring.

The standard for ICU patients was for them to be turned at least every two hours; post-op CABG patients hourly, to keep pulmonary secretions mobile, and the chest tubes draining. The IS orders were for "ten times while awake," but Mr. L had refused the previous hour with the day shift nurse, and now he was asleep. I let him rest at 7:30 p.m., and since he was still sleeping at 8 p.m., didn't wake him. His VS continued to be fine, and while I turned him at 9 p.m., I didn't insist he do his ten reps of the IS. When I checked his VS at 10 p.m., all was stable except his temperature of 100.6°F (38°C); I medicated his 8-of-10 pain and went to the nurses' station to review the flowchart and chart—his temperature had been 97.8°F (36.6°C) at 7:30 p.m. One of my colleagues asked how Mr. L was doing, and I told her about the low-grade fever. Her first question was, "How has he been doing on his IS?" Surprised, I

admitted that I hadn't had him do it, as I was focused on his pain control and rest. But her question clicked that subject open in my mind, and I began consistent pulmonary toilet—while he was not happy to be kept awake, he did the breathing exercises as I requested. An hour later, I medicated his pain, and a few minutes later insisted on the IS again.

At midnight, I checked his temperature again, fully expecting it to have climbed further, but it was 98.9°F (37.2°C). At that moment, early in my practice, I became fully convinced of the power of aggressive pulmonary toilet and the ability of deep breathing to reduce and prevent atelectasis. Mr. L and I continued with his hourly IS throughout the early morning hours, and his temp was 98.3°F (36.8°C) at 4 a.m. As I drove home and reflected on the events of the shift, I thought about how easy it is for a patient to develop atelectasis, and the importance of early prevention through deep breathing and coughing. The other realization for me was how easy it probably would have been for me to prevent it entirely by starting the IS with my first shift assessment. However, by having had this experience (and happily with Mr. L's quick recovery from all aspects of his surgery, without development of post-op pneumonia!), my patient education on the rationale for use of the IS from that night forward became much more compelling.

Frequent Repositioning

Repositioning a patient with impaired cardiopulmonary status maintains body alignment, prevents pressure injuries from low perfusion and hypoxia, and prevents foot drop and contractures. When repositioning a patient in bed, supportive devices such as pillows, rolls, and blankets can aid in providing comfort and safety. It is important to reposition patients appropriately to prevent neurological injury that can occur if a patient is inadvertently placed on their arm. Frequent repositioning also allows for respiratory secretions to mobilize rather than pool in one location (usually dependent, based on gravity). Being turned may cause deeper breaths and may inspire coughing. Position changes also enhance comfort, which reduces pain, allowing for ease of breathing and again more likelihood of full and effective breaths.

Medication Administration

There are medications recognized as specific to the respiratory system and those associated with the cardiovascular system; some have effects on both components of the cardiopulmonary system. Medication administration for respiratory and cardiac drugs involves nurses being familiar with a variety of administration routes. Respiratory drugs may be given as nasal sprays and drops, inhalers, tablets, or capsules to be administered orally or through injections by intramuscular (IM), subcutaneous (SC), or intravenous (IV) access. Cardiac medications add the potential for topical (e.g., nitroglycerin ordered by patch or cream) application and do not include the wide variety through sprays, drops, or powders. When immediate actions are desired, drugs for cardiopulmonary emergencies are typically administered by IV or intraosseous (IO) routes, though respiratory emergencies may still require inhaled doses of certain drugs.

Respiratory Medications

There are various drug classes to treat respiratory pathophysiological problems—all with a goal relative to improving function, whether through improved oxygenation or ventilation (Table 19.6).

Type	Drug	Mechanism of Action
Sympathetic nervous system: Beta$_2$ adrenergic agonists	Albuterol (Proventil HFA)	Capitalizes on the bronchodilation response of SNS stimulation
Parasympathetic nervous system: anticholinergics	Tiotropium (Spiriva—long acting), ipratropium (Atrovent—short acting)	Blocks the bronchoconstriction response of muscarinic PSNS stimulation

TABLE 19.6 Commonly Used Respiratory Medications

Type	Drug	Mechanism of Action
Methylxanthine derivatives	Theophylline (Theo-24)	Smooth muscle relaxation allowing bronchodilation
Corticosteroids	Triamcinolone Nasocort Allergy—nasal; Aristospan—systemic)	Prevention of reaction or worsening reaction to inflammation, whether local or systemic depends on drug, dose, and route
Leukotriene receptor antagonists	Montelukast (Singulair)	Blockade of leukotriene receptors and related decreased inflammatory responses
Cromolyn	NasalCrom	Blocks mast cells and related inflammatory actions
Antihistamines	Diphenhydramine (Benadryl), loratadine (Claritin)	Blocks action of histamine; first generation has broader effects, including sedation
Decongestants	Pseudoephedrine (Sudafed)	Adrenergic stimulation releases norepinephrine, causing vasoconstriction
Expectorants	Guaifenesin (Mucinex)	Causes vagal response that increases fluid in the respiratory tract; thins mucous
Antitussives	Dextromethorphan (Robitussin)	Depression of cough center (medulla) and cough receptors in respiratory tract
Anti-infectives	Numerous classes of anti-infectives—selection based on type of infection (C&S results)	Cause injury or death to infectious microbial cells

TABLE 19.6 Commonly Used Respiratory Medications

Cardiac Medications

As varied as the potential diagnoses that affect the cardiovascular system are the drugs to treat the disorders. Medications are used to modify actions of the ANS in order to lower or raise BP; they treat dyslipidemias and often-linked CAD; antianginal drugs relieve chest pain; there are drugs to treat HF, medications to help the kidneys remove excess fluid; there are those that may treat or prevent dysrhythmias, and there are drugs to prevent and/or treat clotting problems (Table 19.7).

Type	Drug	Mechanism of Action
ACE inhibitors	Lisinopril, enalapril	Vasodilation from inhibition of angiotensin-converting enzyme, and therefore prevention of angiotensin I conversion to angiotensin II (vasoconstrictor); decreases cardiac remodeling and overt HF (some patients)
Angiotensin receptor blockers (ARBs)	Valsartan (Diovan)	Blocks angiotensin II effects of aldosterone release and vasoconstriction at the angiotensin receptors

TABLE 19.7 Commonly Used Cardiac Medications

Type	Drug	Mechanism of Action
Antianginals	Nitroglycerin	Arterial and venous vasodilation increases perfusion and decreases O_2 demand
Anti-arrhythmic	Adenosine (Adenocard)	Temporarily slows or arrests AV conduction and return to NSR
Antianginals	Nitroglycerin	Arterial and venous vasodilation increases perfusion and decreases O_2 demand
Beta blockers	Atenolol, sotalol	Inhibits stimulation of beta receptors; prolongs cardiac cycle refractory period
Calcium channel blockers	Diltiazem (Cardizem)	Smooth muscle relaxation allows for vasodilation; decreases cardiac workload inhibition of calcium during depolarization
Cardiac glycosides	Digoxin (Lanoxin)	Improves cardiac contractility by three mechanisms: positive inotrope (increases contractility, SV, and CO), negative dromotrope (decreased cardiac conduction), and negative chronotrope (lowers HR)
Catecholamines	Norepinephrine	SNS stimulation causes vasoconstriction for enhanced organ perfusion
Diuretics (loop)	Furosemide	Inhibits reabsorption of sodium in the loop of Henle and distal tubule; increases urine and electrolyte output
Diuretics (potassium sparing)	Spironolactone (Aldactone)	Aldosterone antagonist—inhibits sodium reabsorption without loss of potassium
Diuretics (thiazide)	Hydrochlorothiazide (Microzide)	Inhibits reabsorption of sodium in the distal tubule—increases urine output
HMG CoA reductase inhibitors (a.k.a. “statins”)	Rosuvastatin (Crestor)	Inhibits production of cholesterol by inhibiting HMG CoA reductase; LDL is decreased
Neprilysin inhibitor and ARB combination	Sacubitril/valsartan (Entresto)	Inhibits neprilysin (enzyme), allowing for increased natriuretic peptides, which causes vasodilation and sodium (and water) excretion; valsartan (see ARBs)

TABLE 19.7 Commonly Used Cardiac Medications

Type	Drug	Mechanism of Action
Potassium channel blockers	Amiodarone (Pacerone)	Prolongs repolarization through blockade of potassium channels
Sodium channel blockers	Lidocaine	Decreases influx of sodium to cardiac cells—depolarization is prolonged

TABLE 19.7 Commonly Used Cardiac Medications

Oxygen Therapy

O_2 is considered a drug and requires a prescription or healthcare provider's order for nurses to administer it. When administering oxygen to a patient, it is important to ensure that oxygen flow rates are appropriately set according to the type of administration device (Table 19.8). When administering oxygen therapy, it is important for the nurse to assess the patient before, during, and after the procedure and document the findings.

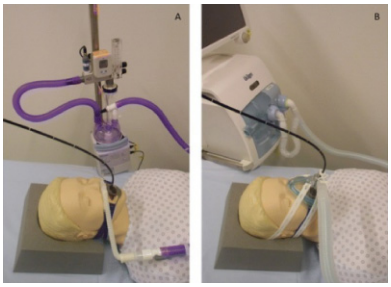
Device	Flow Rates and Oxygen Percentage	Image
Nasal cannula	Flow rate: 1 to 6 L/min FiO_2: 24 to 44 percent	 (credit: "Nasal Cannula" by National Library of Medicine/ National Center for Biotechnology Information, CC BY 4.0)
High-flow nasal cannula	Flow rate: up to 60 L/min FiO_2: up to 100 percent	 (credit: "Illustration of bronchoscopy using HFNC (A) or NIV (B)" by National Library of Medicine, CC BY 4.0)
Simple mask	Flow rate: 6 to 10 L/min FiO_2: 28 to 50 percent	 (credit: "Simple Face Mask" by Glynda Rees Doyle and Jodie Anita McCutcheon, CC BY 4.0)

TABLE 19.8 Settings of Oxygenation Devices

Device	Flow Rates and Oxygen Percentage	Image
Non-rebreather mask	Flow rate: 10 to 15 L/min FiO_2: 60 to 80 percent Safety Note: The reservoir bag should always be partially inflated.	 (credit: "Non re-breather mask" by Glynda Rees Doyle and Jodie Anita McCutcheon, CC BY 4.0)

TABLE 19.8 Settings of Oxygenation Devices

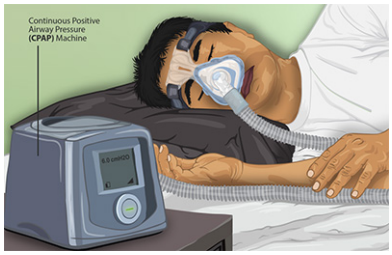
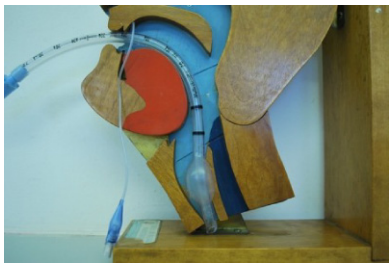
Device	Flow Rates and Oxygen Percentage	Image
CPAP, bilevel positive airway pressure (BiPAP), Venturi mask, mechanical ventilator	Use the settings provided by the respiratory therapist and/or provider order.	CPAP:  (credit: "Depiction of a Sleep Apnea patient using a CPAP machine" by "myUpchar"/Wikimedia Commons, CC BY 4.0) Endotracheal tube (ETT):  (credit: "Endotracheal tube" by John Campbell/Flickr, Public Domain) Mechanical ventilator: (credit: "Simulated Intubated Patient on a Mechanical Ventilator" by National Center for Biotechnology Information/National Library of Medicine/National Institutes of Health, CC BY 4.0)
Bag valve mask	Flow rate: 15 L/min FiO_2: 100 percent Squeeze the bag once every five to six seconds for an adult or once every three seconds for an infant or child.	 (credit: "Bag Valve Mask New" by "JonnyEMSJD"/Wikimedia Commons, Public Domain)

TABLE 19.8 Settings of Oxygenation Devices

Patient Education

It is important to modify patient education methods depending on the individual's knowledge, skills, and abilities. For example, some older adults readily engage in using electronic technology, but others have low digital literacy or experience difficulty when accessing electronic health resources. Nurses should adapt patient education to the needs of the individual and provide verbal, written, or electronic resources, as needed, while considering any sensory, cognitive, or functional impairments. The ultimate goal of health promotion and patient education is to improve their understanding, motivation, and engagement in self-management and promote their quality of life.

Behavioral Modifications

Knowing there are many behaviors that can negatively impact the cardiopulmonary system, it can be important for nurses to provide patient education about behavioral modifications. As part of the nursing history and physical, behaviors like smoking, exercise, nutrition, alcohol, and other intake of drugs, should all be discussed with the patient.

Helping the patient realize how certain applicable behaviors affected overall health, and cardiopulmonary health in particular, is important and can provide the necessary first step in recognition of the action-reaction relationship. Nurses are often the first providers of such information, as so much time is spent directly with patients, and relationships are established whereby patients feel comfortable asking questions. Once identified and recognized, the nurse can begin to introduce applicable information to help modify any negative behaviors.

There is a lot of information available regarding smoking cessation and many resources to help patients quit. Dietary recommendations can be provided, including cardiac diets, and recommendations for calorie intake in the presence of COPD. Patients may need guidance and contacts for support groups in order to consider quitting alcohol or illicit drug use. If expert information is needed, such as specific dietary limitations, the nurse can discuss with the prescribing healthcare provider about a consult with a specialist, in this case, a nutritionist or dietitian.

Pollutants

As patients are seen in outpatient settings or are preparing for discharge from acute inpatient care, exploration by the nurse should include environmental exposures the patient is prone to. Whether this is secondhand smoke, exposure to motor vehicle exhaust, coal dust, or smoke from fires of any variety, patients may not understand the importance of exposure prevention. Patients should know about warnings for poor air quality and actions to take to avoid exposure. Education about appropriate respiratory protection devices, when to don and doff them, and how to wear them correctly can be discussed. And for information beyond the scope of nursing practice, the nurse can teach patients how to find reliable resources.

Coping Techniques to Reduce Anxiety

Coping strategies are behaviors used to manage anxiety. Effective strategies control anxiety and lead to problem-solving, but ineffective strategies can lead to use, misuse, or overuse of food, tobacco, alcohol, or drugs. Nurses teach and reinforce effective coping strategies.

The nurse should determine what techniques the patient has used historically, and together the nurse and patient can discuss which have been successful and which have not. This can lead to behavior modifications and introduce new and healthy recommendations for coping in stressful situations. Often techniques like slow, deep breaths can be helpful. Some patients respond well to distraction and imagining a pleasant place or recalling a fond memory. The nurse can also suggest to the patient and prescriber the possibility of pharmacological intervention for anxiety to be added or adjusted to the patient's care plan.

Comfort Measures

Establishing and maintaining comfort can be vital to patients while they are battling illness, painful symptoms, and fear. Nurses should be aware that some physical problems cause pain or discomfort, and many diagnostic tests and interventions inflict pain upon patients, who may already be uncomfortable.

The nurse should remain mindful of not only the treatments and pharmacological interventions that will enhance those direct cardiopulmonary physical needs but also the addition of pain medications, anxiolytics, and hypnotics if and when needed. Sometimes the most basic of interventions can better meet a patient's most basic needs: a warm bath, preferred music, or a visit from a pet may help reduce stress, enhance comfort, and assist with rest and healing.

Interdisciplinary Collaboration

Many patients with serious, life-limiting illnesses have common symptoms that the nurse can assess, prevent, and manage to optimize their quality of life. Good symptom management improves quality of life and functioning in all states of chronic illness. Nurses play a critical role in recognizing these symptoms and communicating them to the interdisciplinary team for optimal management.

Collaborating with physical, occupational, speech therapists, and nutrition specialists in the design and implementation of care planning truly enhances patient care and improves patient outcomes (Figure 19.26). The importance of establishing and fostering good relationships with all members of the interdisciplinary team is crucial to safe patient care. Important departments that ensure cardiovascular and pulmonary health are nutrition, cardiac rehabilitation, and chest physiotherapy.

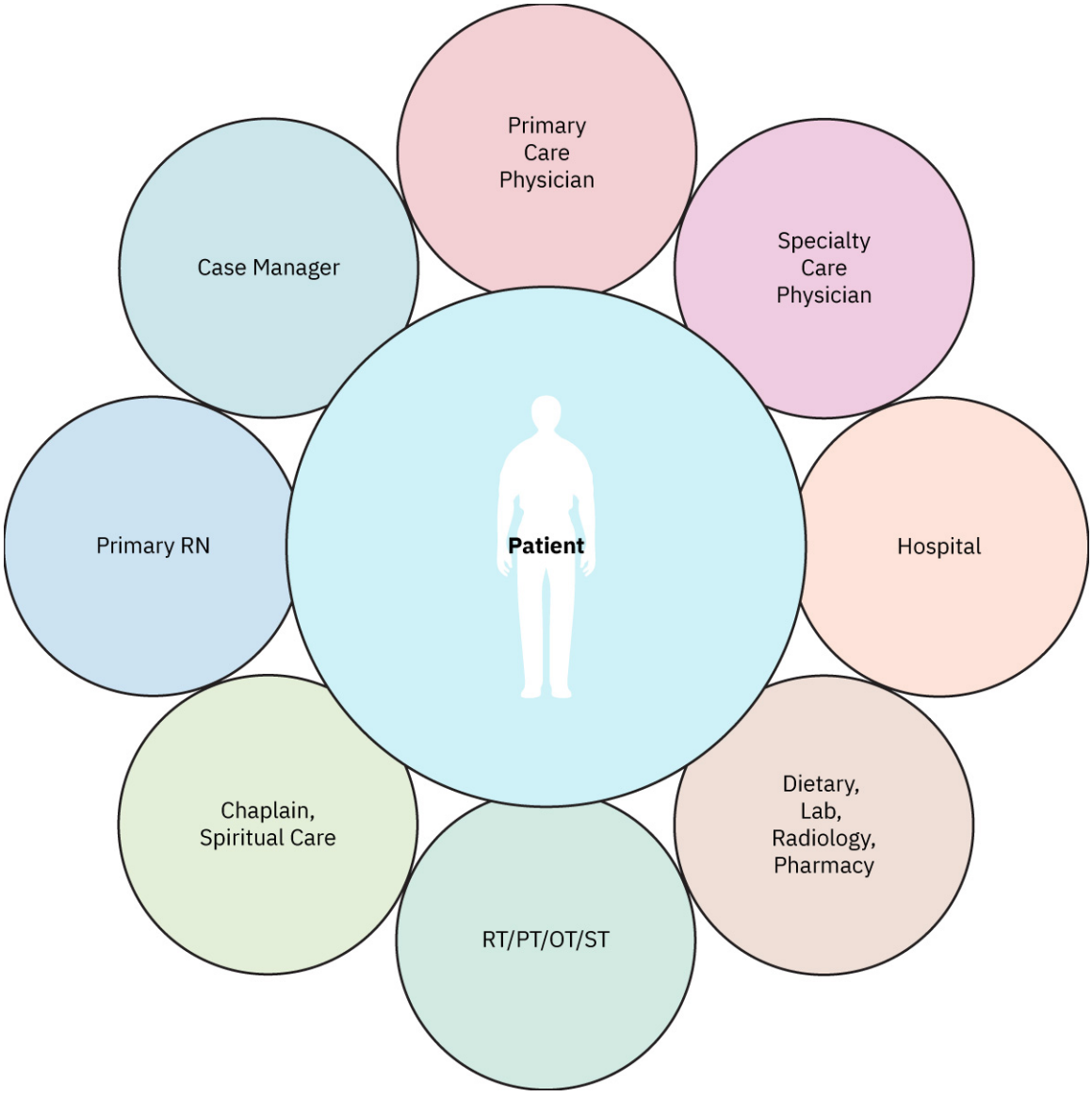


FIGURE 19.26 These are examples of the members of an interdisciplinary care team. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Nutrition

Healthy nutrition helps to prevent obesity and chronic diseases, such as cardiovascular disease. By proactively encouraging healthy eating habits, nurses provide the tools for patients to maintain their health, knowing it is easier to stay healthy than to become healthy after disease sets in. When patients are recovering from illness or surgery, nurses use strategies to promote good nutrition even when a patient has a poor appetite or nausea. If a patient

develops chronic disease, the nurse provides education about prescribed diets that can help manage the disease, such as a low-fat, low-salt, low-cholesterol diet for patients with cardiovascular disease.

Patients often need guidance from dietitians to understand, plan for, and follow their specific nutritional needs. Also, whether the patient is actively involved in dietary choices or limitations while hospitalized, the dietitian is involved in the preparation of menu items that meet the needs of all specific diets.

Similar to being aware of a patient's needs in regard to prescribed medications, it is important for nurses to understand patients' dietary requirements and restrictions. Awareness of a cardiac diet, for example, which has limitations relative to sodium and fats, helps nurses provide the correct diets as well as guide patients and families to understand choices and follow recommendations. Patients with significant respiratory illness, like late-stage emphysema, often have increased calorie needs and require supplements with meals to provide enough energy for the extra physiological needs. For those who have comorbidities like DM or renal disease, dietary restrictions and recommendations are added to their care plans, while in the hospital and on discharge. Nurses tend to be the providers of discharge education, so the ability to describe various diets and caloric needs is important.

Cardiac Rehabilitation

Patients who have substantial cardiac dysfunction, whether having had an MI, or from progressive deterioration like HF, or who are postoperative after surgery for valvular disorder or CABG, are usually prescribed cardiac rehabilitation. Depending on the length of hospitalization, the patient may be quite deconditioned, with anticipated needs for a variety of interdisciplinary therapies in order to gain some strength back and be well enough to return home. Others may not have had significant damage requiring complicated rehabilitation and various therapies. Such rehabilitation may or may not involve time as an inpatient at a dedicated rehabilitation unit or facility.

Many are able to begin their cardiac rehabilitation while inpatient and be taught exercises and activities to be done after discharge. Like physical therapy (which may also be ordered), many rehabilitation actions can be carried out at home by the patient and perhaps with assistance from a family member or friend. Often, there are outpatient visits for some time after discharge, to a cardiac rehabilitation agency, in order to check in, be evaluated, and adjust activities as indicated by patient status and tolerance.

Chest Physiotherapy

There are devices and techniques that can assist patients with maintaining pulmonary function and recuperating from illness or exacerbation of an illness. Previously introduced was the IS, which many patients receive shortly after admission, whether for a long stay in the hospital or merely an overnight stay. These devices are disposable so patients are encouraged to take the IS upon transfer or discharge and continue using it several times daily.

Other methods of chest or respiratory physiotherapy include valves like a flutter valve which use vibration or oscillation to assist with positive expiratory pressure and enhance airway clearance. There are also specialized vests that inflate and deflate and offer vibration and percussion. Percussion can also be done manually by using cupped hands and repeated dull strikes to the chest and back, or with manufactured devices that provide similar thumping to the chest and back.

LINK TO LEARNING

This video presents a demonstration of manual chest physical therapy (https://openstax.org/r/77ManualChestPT) by a respiratory therapist.

The goal of these interventions is to loosen and mobilize secretions from smaller to central airways to enable their removal by coughing or **postural drainage** (positioning the patient to use gravity to allow secretions to drain) (Figure 19.27).

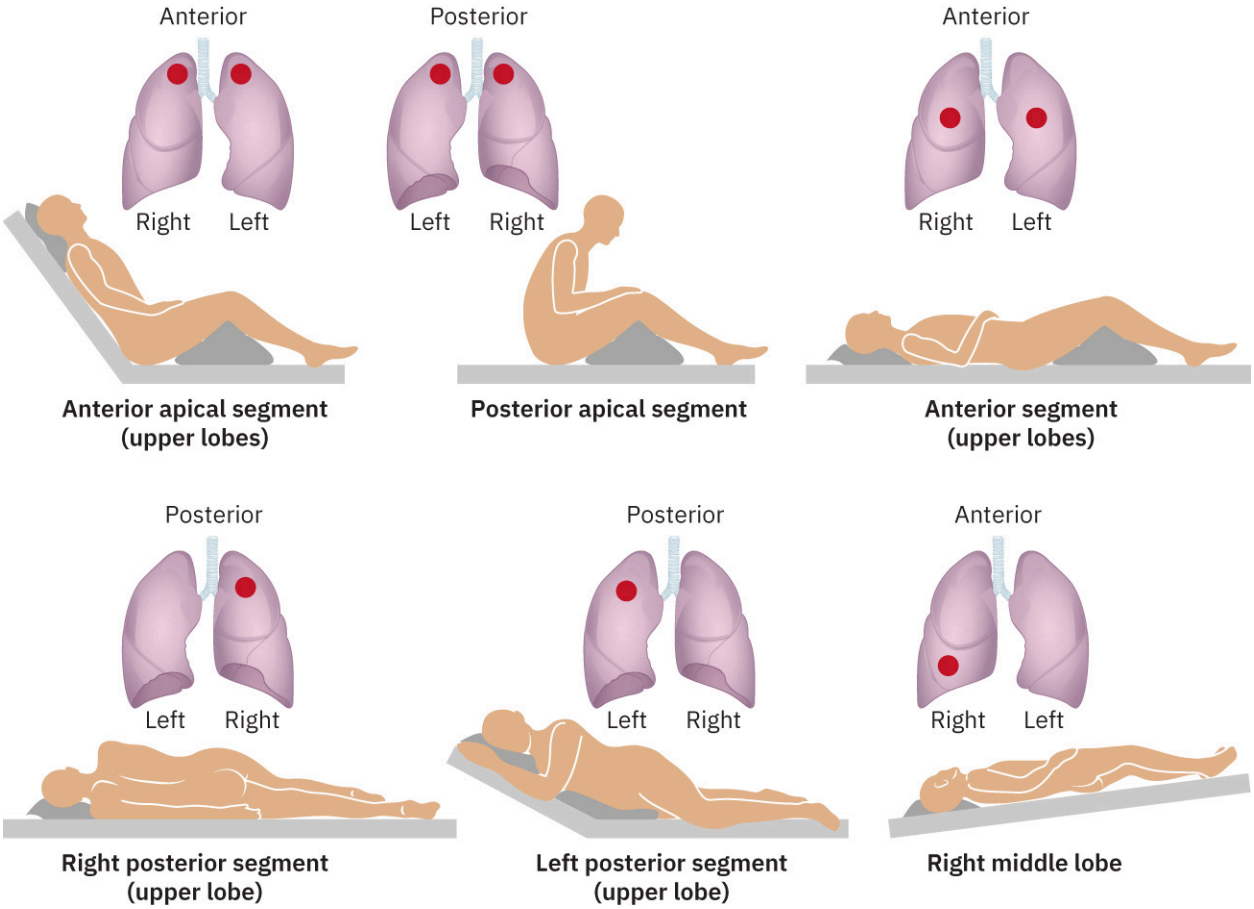


FIGURE 19.27 Postural drainage fosters drainage and removal of secretions from various locations in the lungs. (credit: reproduced by permission of Jane Whitney)

Emergency Interventions

When things go wrong with the cardiopulmonary system, the results can quickly be devastating or fatal. Of course, not all abnormalities are lethal, but an ability to recognize normal and therefore be able to identify abnormal (whether being able to define exactly what is wrong or not) is critical for nurses. It is also important to be vigilant about assessments and know what changes in a patient's status are worthy of immediate follow-up. A few of the things that require urgent or emergent interventions follow in the next and final section of this chapter.

Chest Tube Insertion

Depending on the reason for the insertion of a chest tube, it may be urgent or emergent; it is not typically a routine intervention. Emergent chest tube insertion is perhaps most commonly done for a pneumothorax; hemothorax (or the mixture of hemopneumothorax) and chylothorax are also possibilities that necessitate a chest tube. The lungs have a limited amount of space within the thoracic cage, so situations that alter the area for lungs to inflate and deflate, and those that change the normal pressure, are problematic.

The location for chest tube placement is based on radiography, as pneumothoraces are visible on chest x-rays (Figure 19.28). The nursing role includes reassuring and frequently assessing the patient, providing medication for pain and anxiety, and assisting the physician (or advanced practitioner) with the procedure, including the setup of the chest tube system. The insertion is done under sterile technique, either at the bedside or in an operating room. The flexible tubing from the chest tube system needs to be attached to the chest tube itself, so the nurse holds the clean tubing and the provider who inserted the tube inserts the tube end into the system's tubing.

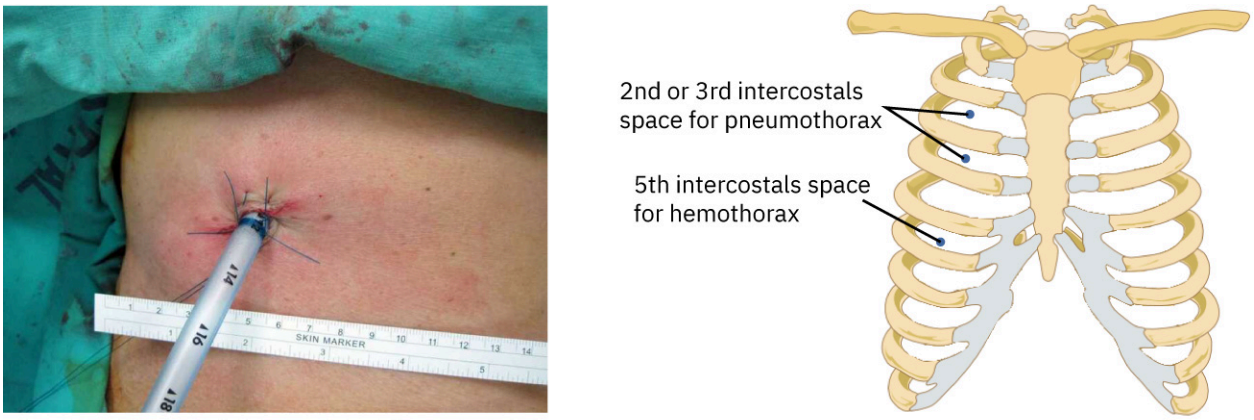


FIGURE 19.28 Chest drainage tubes are placed (a) higher to drain air and (b) lower to drain fluid. (credit a: modification of work "An inserted chest tube" by C. H. Chen, S. Y. Lee et al/Wikimedia Commons, CC BY 2.5; credit b: modification of work "Rib cage" by Mikael Häggström, Public Domain)

A related emergency that requires the insertion of a chest tube for ongoing management is a tension pneumothorax. This develops suddenly and impacts the lung or lungs, heart, and blood vessels. Without immediate intervention, it can be quickly life threatening. Since time is limited before the provider takes the time for chest tube insertion, a large gauge needle is inserted in the second intercostal space and midclavicular line to allow air to escape and the lung to reinflate.

LINK TO LEARNING

The video Chest Tubes—Nursing Management and Assessment Made Easy (https://openstax.org/r/77ChestTubes) presents more information about chest tubes.

Cardiopulmonary Resuscitation

According to the AHA (2023), high-quality CPR is the principal contributor to post–cardiac arrest survival. Nursing students, as well as nurses at all levels—from licensed practical nurses through advanced practice nurses, are normally certified as BLS providers and recertify every two years. Depending on the cause of the arrest, and the subsequent status of the patient, interventions include rescue breathing, chest compressions, and use of an automated external defibrillator (AED) or manual defibrillator. Not all actions are indicated for all patients. For example, a patient who has experienced a respiratory arrest but has a pulse does not need chest compressions, and asystole is not a shockable rhythm. If the patient is pulseless, CPR is indicated, in order to perfuse the body, particularly the brain.

LINK TO LEARNING

The animation CPR in Action (https://openstax.org/r/77CPRinAction) shows the perfusion capabilities of high-quality CPR. It also illustrates what happens when CPR is not done adequately.

Defibrillation

Based on the term itself, defibrillation is the delivery of an electric shock to stop fibrillation (ineffective quivering movement of the heart muscle). Fibrillation, though, can occur in the atria or the ventricles, and atrial fibrillation (A-fib) is not typified as a "deadly rhythm." If an electrical intervention is sought for the treatment of A-fib, it involves fewer joules of electricity and is termed **cardioversion**. Ventricular fibrillation (VF) and pulseless ventricular tachycardia (VT) are nonperfusing rhythms, and defibrillation is indicated emergently. Usually, this is delivered as part of BLS or ACLS efforts and accompanies CPR.

In acute care settings, a cart for arrest situations, also called a code, or COR-0, is present on most or all patient care units. The cart contains a hard backboard to place under the patient to enhance the quality of chest compressions,

airway devices and bag-valve masks of various sizes, emergency drugs, and a manual defibrillator/monitor. In many other settings, automated external defibrillators (AEDs) are available and can be used by laypersons, as the device offers step-by-step instructions. Those who are BLS certified have practiced with AEDs. Defibrillation delivers 150 to 300 joules (depending on the type of device), in an effort to essentially reset (depolarize) the heart and resume a more normal rhythm. Refer to the AHA's guidelines and algorithms (linked in the previous heading) for defibrillator (shock) indications and timing.

LINK TO LEARNING

A demonstration of defibrillation with an AED (https://openstax.org/r/77AEDDefibrilla) is presented in this video. Watch the rhythm examples, as they are from an actual patient. Also, the AHA guidelines and algorithms (https://openstax.org/r/77AHAGuideAlgor) may be reviewed.

Intubation

When a patient is receiving general anesthesia prior to a procedure or surgery or is experiencing respiratory failure or respiratory arrest, an ETT is inserted by an advanced practitioner, such as a respiratory therapist, paramedic, or anesthesiologist, to maintain a secure airway. The ET tube is sealed within the trachea with an inflatable cuff, and oxygen is supplied via a bag valve mask or via mechanical ventilation.

Placement is verified with a CO_2 detection device to ensure it is in the airway and not the esophagus. Auscultation should be done to verify equal, bilateral breath sounds. A chest x-ray will be ordered and performed for definitive placement confirmation and also to verify the ETT is in the optimal position. The ETT is attached to an Ambu bag, and the patient's ventilation is provided by squeezing the bag every six seconds to deliver breaths until a mechanical ventilator is available. At that point, the bag is disconnected from the ETT, and the mechanical ventilator circuit is attached. Nurses collaborate with RTs and healthcare providers regarding the overall care of the patient on a mechanical ventilator.

LINK TO LEARNING

This video shows intubation, bagging, placement detection, and attachment of the ETT to a ventilator (https://openstax.org/r/77ETTVentilator) in an emergency. Watch the technique and landmarks used with the laryngoscope, how the ETT is passed through the vocal cords, and the postintubation actions.

Mechanical Ventilation

A mechanical ventilator is a machine attached to an ETT to assist or replace spontaneous breathing. Mechanical ventilation is termed invasive because it requires the placement of a device inside the trachea through the mouth, such as an ETT. Mechanical ventilators are managed by RTs via protocol or provider order. The FiO_2 can be set from 21 to 100 percent.

Intubation and mechanical ventilation are uncomfortable and distressing to the patient, so patients are customarily sedated with an anxiolytic (e.g., lorazepam or midazolam) or anesthetic-type (e.g., propofol) medication. These drugs help the patient achieve synchrony with the ventilator, allowing the ventilator to provide all, or most of, the ventilation support. Some ventilator settings are so contrary to normal physiological breathing that patients will require continuous IV neuromuscular blockade or chemical paralysis. This drug therapy allows for complete control of breathing by the ventilator, and it is vital to provide sedation for patients on paralytics. Intubated and ventilated patients are at increased risk for ventilator-associated pneumonia (VAP), and there are nursing care actions like maintaining patients with the head of the bed at 30 degrees minimum, frequent oral care, and proton-pump inhibitor therapy in order to prevent the occurrence of VAP.

Summary

19.1 Respiratory System

The various structures of the respiratory system, from the upper to lower airway, into the lungs, and to the capillary-alveolar bed, have been identified and explored. At the capillary-alveolar bed, the primary function of the respiratory system is gas exchange. The functions of these structures have been categorized, relating specific components to the purpose relative to ventilation and perfusion. This section has delved into the physiology of the respiratory system, and how it fits in the cardiopulmonary system. Specifics as to the role this system plays in ventilation, how respiration and gas exchange transpire, and the role the lungs play in the renin-angiotensin-aldosterone system are presented. Respiration is a basic function, generated by the neurological system, with control centers within the medulla oblongata and pons. Regulation by these systems, including actions stimulating the length and depth of each breath, is controlled by opposing actions of the apneustic and pneumotaxic centers, in efforts to maintain homeostasis throughout the body.

19.2 Cardiovascular System

The cardiovascular system is structurally unique insofar as it contains the muscular four-chambered heart (the pump), fluid/blood volume (the tank), and the blood vessels (the pipes). It is an electrical system. Electrical impulses precede the muscular movement or contraction of the heart. When the signals and responses are normal, it functions impeccably. These structures and processes have been explored and analyzed in an effort to understand cardiovascular system physiology.

In the process of investigating the normal anatomy and physiology of the cardiovascular system, regulation of this complex and intertwined system has been reviewed as well. Because normal cardiovascular function is critical to the maintenance of homeostasis, and in anticipation of the next module exploring various aspects of impaired function, this section introduced several cardiovascular dysfunctions and disorders, some of which intertwine and affect one another. Hypertension and arteriosclerosis impact one another and are implicated in CAD. Sometimes, the electrical system does not function normally, causing dysrhythmias and even cardiac arrest, which have been elaborated on through the disorders and interventions.

19.3 Factors Affecting Cardiopulmonary Function

When cardiopulmonary function is not performing properly, the physiological impacts can range from asymptomatic to severe and even life threatening. Some examples of disorders and dysfunctions affecting the cardiopulmonary system have been presented and discussed. Additionally, contributors to the development of such physiological concerns, including those risk factors considered nonmodifiable, such as genetics and age, as well as lifestyle decisions and behaviors that promote or prevent the development of cardiopulmonary diagnoses are discussed. Genetic input is not something that can be erased, although some negative impacts may be slowed or prevented by positive lifestyle and behavioral actions and decisions. Similarly, negative choices and decisions can have negative physical results.

Health status is also a factor in cardiopulmonary dysfunction. Comorbidities have a negative influence on a patient's ability to physically (and perhaps mentally) come through the problems that accompany malfunctions of the cardiac or pulmonary systems. As critical as this combined system is, the impacts may not only be obvious from the primary diagnosis but may be more insidious and be based on a secondary or tertiary effect.

Finally, a variety of diagnostic tests were investigated—from laboratory blood studies like cultures to arterial or venous blood gases to analyze acid-base balance and respiratory status, to monitoring devices such as pulse oximeter and capnography. Some of the components of PFTs were presented, although this practice area is quite specialized, with many details specific to pulmonology care. Since the electrical system is so vital to cardiovascular function, electrocardiograms were explored, with a focus on the entry-level, generalist nurse.

19.4 Management of Impaired Cardiopulmonary Functioning

The nursing roles in care of the cardiopulmonary patient can be varied and may take place in varied settings. Care of chronic disorders may happen most often in outpatient settings: physician's offices, clinics, or home care. Acute care and emergent care involve inpatient settings, and recovery, either between exacerbations or complete, is likely

to entail rehabilitation. Nursing care may include total, intensive care, or focus more on maximizing an individual's recovery and return to best function.

Nurses caring for patients with cardiopulmonary dysfunction should be vigilant and compassionate in their care delivery. Patient status can change rapidly, so frequent assessment is necessary. Prevention of complications is important; therefore, helpful practices like assertive pulmonary toilet should be employed to prevent atelectasis and possibly pneumonia. The importance of pain and anxiety control and other comfort measures cannot be diminished throughout the provision of care.

The nurse is not alone in the provision of cardiopulmonary care but is a member of an interdisciplinary team. Team members work in concert to coordinate the various aspects of patient status and goals, as well as the different care available through specialists in medicine, nursing, and other care providers. Cardiopulmonary emergencies benefit from the fast identification of the circumstance and immediate collaboration and action of the interdisciplinary team. The nurse works very closely with advanced practitioners—physicians, nurse practitioners, and physician's assistants—collaborating during routine and emergent care. The professional interaction during emergencies offers respect and recognition for all team members, from frequent nursing assessment to chest tube placement, or necessary advanced airways and mechanical ventilation. Respiratory therapists assist with intubations and set up and manage ventilators; radiology personnel take and read x-rays; and entire collaborative teams manage arrest situations in an organized manner to maximize the patient's outcome. Throughout a patient's journey, all sorts of multidisciplinary players contribute their expertise through varied therapies and support.

Key Terms

advanced cardiac life support (ACLS) enhanced training and skills beyond basic life support (BLS), primarily involving the addition of resuscitation and cardiac support medications
afterload the force the ventricles must generate to pump blood against the resistance in the vessels
arteriosclerosis stiffening of the arterial walls
artery a blood vessel that carries blood away from the heart
atelectasis the collapse of alveoli in the lungs, resulting in limited air movement and decreased gas exchange
atherosclerosis buildup of plaque deposits within the artery walls
automated external defibrillator (AED) an easy-to-use portable device available in many settings that can analyze a cardiac rhythm and defibrillate, if appropriate, in order to reestablish an effective cardiac rhythm
automaticity the ability of cells to initiate spontaneous action potential
bronchiectasis a chronic condition where airways are dilated and the lung walls are thickened due to inflammation and infection
capnography CO_2 monitor
cardiomyocytes heart muscle cells
cardiopulmonary resuscitation (CPR) combination of rescue breathing and chest compressions
cardiopulmonary system combination of cardiovascular and pulmonary systems
cardioversion use of low-dose electricity to convert the cardiac electrical system from a dysrhythmia (e.g., A-fib) to normal sinus rhythm
carina the ridge of cartilage at the base of the trachea that separates the openings of the left and right primary bronchi
comorbidity multiple medical diagnoses
compliance the ability of the lungs to accommodate deep and shallow breaths and maintain elastic recoil
contractility pumping action of the heart
crepitus a popping or crackling sensation when the skin is palpated; it is a sign of air trapped under the subcutaneous tissues
cyanosis a bluish or dusky discoloration of the skin and mucous membranes caused by hypoxia
dysrhythmia a rhythm abnormality
ejection fraction (EF) the percentage of blood within the ventricle that is expelled during a single systolic contraction
electrocardiogram the visual interpretation of the electrical impulses involved in the cardiac cycle
epiglottis a flexible piece of cartilage that covers the opening of the trachea during swallowing to prevent ingested material from entering the trachea

esophagus part of the gastrointestinal tract: tubular structure adjacent to trachea which transports food and fluid boluses from the mouth to stomach
expiration the act of exhalation or breathing out
false vocal cords mucosal tissue located within the glottis; also known as vestibular folds
fibrosis abnormal scar tissue
gas exchange the transfer of oxygen and carbon dioxide; takes place at the alveolar-capillary bed
glottis the opening between vocal folds; includes true vocal cords and the opening between them
hypercapnia an elevated blood CO_2
hyperventilation rapid, deep breathing
hypoxemia decreased partial pressure of oxygen in the blood (PaO_2)
hypoxia a reduced level of tissue oxygenation
inspiration the movement of air into the lungs
intravascular volume the amount of fluid within the blood vessels
ischemia a condition in which oxygen-rich blood flow is restricted or reduced in a part of the body
isoelectric line the flat horizontal line on ECG paper, reflecting no electrical voltage (positive or negative)
laryngopharynx lower portion of the throat, located behind the larynx
larynx tubular airway structure at the superior part of the trachea that connects the pharynx to the trachea and helps regulate the volume of air that enters and leaves the lungs; contains the vocal cords
mediastinum the space within the thoracic cavity, medially between the lungs
metabolic syndrome a group of disorders including high triglycerides, low high-density lipoprotein (HDL), insulin resistance, hyperglycemia, hypertension, and central obesity
nasal turbinates folded mucosal tissues offering protection, warmth, and humidity to the nasal cavity; also known as conchae
nasopharynx superior part of pharynx, connecting nose and trachea
oropharynx middle portion of pharynx, including tonsils and base of tongue, connecting to trachea
perfusion vascular circulation powered by the pumping action of the heart that delivers oxygen and other nutrients to body tissues
pharynx muscular tube that connects the nasal cavity and mouth to the voice box (larynx) and the esophagus (food pipe); also known as the throat
postural drainage use of gravity/positioning to enhance drainage of respiratory secretions
preload the stretch on the ventricles prior to contraction
respiration the action of breathing, including inhalation and exhalation
respiratory ventilation the act of breathing; associated with oxygenation
rhythm strip a tracing of the electrical cycles as seen from a selected lead, usually representing six seconds
sinuses cavities located bilaterally in various areas of the skull; identified by the nearby bones
spirometry pulmonary function test measuring the amount and speed of air movement on inhalation and exhalation
stroke volume the volume of blood pumped out of the left ventricle of the heart during each systolic cardiac contraction
subcutaneous emphysema air trapped in the subcutaneous tissue
surfactant a phospholipid compound that reduces surface tension of alveoli, thereby preventing alveolar collapse (atelectasis)
tachycardia heart rate faster than 100 beats per minute
tachypnea a respiratory rate that exceeds 20 breaths per minute
tidal volume length and depth of breaths
trachea the lowest structure of the upper airway, adjacent to the esophagus, that connects the lung bronchi and the larynx and provides a route for air to enter and exit the lungs; also known as the windpipe
true vocal cords structures within the glottis with muscular attachments to the thyroid and laryngeal cartilage; movement at the inner aspects produces sound production mechanism
valve promotes the unidirectional flow of blood toward the heart and prevents backflow in a vein
vein a blood vessel that returns blood to the heart
venous reserve percentage of venous blood located in venous networks within the liver, bone marrow, and integument

ventilation the movement of air in and out of the lungs

Assessments

Review Questions

1. What laboratory result is indicative of hypercapnia?
   a. PaO_2 68 mm Hg
   b. $PaCO_2$ 24 mm Hg
   c. HCO_3 24 mEq/L
   d. $PaCO_2$ 50 mm Hg

2. Diffusion works by which method of molecular movement?
   a. Molecules move from the intravascular space to the surrounding tissue.
   b. Movement of molecules is from interstitial to intravascular space.
   c. Molecular movement is from high to low concentration along a gradient.
   d. Molecules are moved across a filter by expenditure of ATP.

3. What substance is a powerful vasoconstrictor, synthesized by reactions of the kidneys and the lungs?
   a. aldosterone
   b. angiotensin II
   c. renin
   d. angiotensin I

4. What substance reduces alveolar surface tension, thereby preventing the collapse of alveoli?
   a. surfactant
   b. macrophage
   c. bradykinin
   d. prostaglandin

5. What patient's respiratory status would a nurse in the emergency department be *most* concerned about?
   a. 68-year-old with fifty-pack-year smoking history
   b. 52-year-old with brainstem infarction
   c. 45-year-old with right lower lobe pneumonia
   d. 34-year-old with latent tuberculosis

6. A nursing student who is preparing to educate a patient on the use of the incentive spirometer practices by telling the preceptor the patient will be told to use what technique?
   a. "Inhale through the mouthpiece like a thick milkshake through a straw."
   b. "Blow into the mouthpiece as hard as you can for as long as you can."
   c. "Breathe in and out through the mouthpiece quickly ten times in ten seconds."
   d. "Cough into the mouthpiece to see if the regulator rises to the goal."

7. Norepinephrine enhances perfusion by what mechanism?
   a. dilates blood vessels
   b. produces hypotension
   c. causes vasoconstriction
   d. normalizes temperature

8. The combined processes of cellular respiration and gas exchange are referred to by what terminology?
   a. ventilation
   b. perfusion
   c. internal respiration
   d. Kreb cycle

9. The impulse of the normal cardiac electrical cycle travels from the SA node to the AV node, then to which structure?
   a. Purkinje fibers
   b. bundle of His
   c. ventricular wall
   d. interventricular septum

10. A nurse anticipates what symptom from a patient who has low CO?
   a. clammy skin
   b. clear mentation
   c. bradycardia
   d. robust pedal pulses

11. Metabolic syndrome is associated with what combination of diagnoses?
   a. hyperglycemia, central obesity, hypertension
   b. high triglycerides, high HDL, hyperglycemia
   c. hypertension and severe obesity
   d. high triglycerides, low HDL, hypoglycemia

12. Acid-base balance is reflected by what factor?
   a. $PaCO_2$
   b. pH
   c. PaO_2
   d. HCO_3

13. A nurse is educating a patient about lifestyle choices; what behavior is of most concern for respiratory implications?
   a. sedentary activity level
   b. high sodium intake
   c. 150 minutes of moderate walking
   d. smoking

14. The amount and rate of inspiration and expiration of air are measured by what test?
   a. oximetry
   b. capnography
   c. spirometry
   d. PEFR

15. The telemetry nurse notices a patient's HR has slowed to 45 beats/minute; upon reviewing the continuous ECG monitor, no P-waves are visible, but the QRS complexes are regular. The nurse prepares to call to inform the cardiologist of what suspected issue?
   a. The patient is in HF.
   b. An MI is occurring.
   c. A-fib has developed.
   d. The SA node is not firing.

16. A nurse reads a postintubation chest x-ray report that indicates a patient has subcutaneous emphysema in the anterior right chest, near the clavicle. What assessment finding should the nurse anticipate in this region?
   a. no breath sounds
   b. crepitus
   c. alkalosis
   d. wheezing

17. A patient is admitted for an acute-on-chronic exacerbation of emphysema. What powerful class of drugs does the nurse expect to be prescribed to treat the acute inflammatory process?
   a. decongestant
   b. expectorant
   c. corticosteroid
   d. antitussive

18. An unresponsive patient who is not breathing and whose cardiac rhythm is identified as VF is a candidate for what emergency intervention?
   a. cardioversion
   b. O_2 by CPAP
   c. IV sedation
   d. defibrillation

19. A patient with secretions in bilateral anterior upper lobes of the lungs has been taking guaifenesin, has undergone chest physiotherapy to include percussion of the upper anterior chest, and is now to be positioned for postural drainage. In what position will the nurse place the patient?
   a. Trendelenburg
   b. supine and flat
   c. prone
   d. high Fowler

Check Your Understanding Questions

1. How does the pneumotaxic center affect the respiratory rate?

2. What is meant by the term *automaticity*?

3. What dietary patient teaching should the nurse provide to a patient recently diagnosed with hypertension?

4. Which three techniques are helpful for removal of excess CO_2 and promotion of airway clearance?

Reflection Questions

1. A nursing student notices an ICU nurse pays closer attention to a patient's cardiac index (CI) than CO on the monitor. Why is the nurse focusing more on the CI?

2. Describe the benefit of the traffic light system for patient education regarding peak flow results.

3. Consider the members who make up an interdisciplinary healthcare team. Describe which team members are likely to be involved in a cardiopulmonary arrest situation and reflect on the interaction of roles and how the players collaborate toward positive outcomes.

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #4: Part 1.
Based on this Unfolding Case Study and the formula for cardiac output, what do you think is happening with the patient based on her presenting vital signs?

2. Refer to Unfolding Case Study #4: Part 2.
What risk factors might be present that are contributing to the patient's condition?

What Should the Nurse Do?

An unresponsive patient has been brought to the emergency department, and an ABG is performed. Results indicate a pH of 7.24 and CO_2 of 52. The nurse notes the patient's respiratory rate is 26.

1. Based on the definition of hyperventilation, is this patient hyperventilating?

2. Why is the patient tachypneic?

3. A patient who experienced a MI with significant myocardial tissue damage two weeks ago now has a

diagnosis of HF. The nurse notes these recent test and hemodynamics results: T: 98.8°F (37.1°C), HR 122, BP 86/48, RR 16, CO 3.9, CI 1.8. Echocardiogram report includes bilateral ventricles with minimal wall motion and low SV. What results would illustrate signs and symptoms associated with HF?

4. A patient presents to the ED with complaint of 10/10 chest pain. The receiving nurse notes the patient is ashen and diaphoretic. Vital signs are as follows: temperature 98.8°F (37.1°C), HR 112, BP 84/56, RR 24, SaO_2 94 percent on 2 L O_2 by nasal cannula (NC). As the leads are being placed for a twelve-lead ECG, the patient says to the nurse, "Please don't let me die!" and loses consciousness. The nurse checks for a carotid pulse, but there is none, so the code button is pushed to activate the code team. While awaiting the team's arrival and the code cart, which action should the nurse take first?

Competency-Based Assessments

1. A nurse is caring for a patient awaiting cardiac catheterization who had 9/10 chest pain, reduced to 4/10 on a nitroglycerin IV drip. Which patient assessment findings should the nurse consider to determine whether to increase the rate of nitroglycerin? *Select all that apply*.
   A. temperature
   B. BP
   C. HR
   D. pain scale
   E. respiratory rate

2. The new graduate nurse prepares to place leads for continuous three-lead cardiac telemetry monitoring: in addition to the ground, at which locations should leads be placed?
   a. right arm and both legs
   b. both arms and left leg
   c. left and right second intercostal space
   d. xiphoid process and left arm

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CHAPTER 20

Fluid, Electrolyte, and Acid-Base Balance

FIGURE 20.1 Successful regulation of fluid and electrolytes is a vital part of maintaining homeostasis within the human body. (credit: "U.S. Navy Sailors spend time working in Valleywise Medical Center supporting the community 220222-A-TV877=1003," Navy Medicine/ Flickr, Public Domain)

CHAPTER OUTLINE

20.1 Fluid and Electrolyte Balances

20.2 Acid-Base Balances

20.3 The Nurse's Role in Patient Care Management

INTRODUCTION Understanding fluid, electrolyte, and acid-base balance is one of the most important concepts in nursing. Without stability in all three of these areas, cellular process cannot occur normally, and life may cease to exist. A normal fluid balance is needed to deliver oxygen and other nutrients to target tissues and to remove cellular waste. Keeping electrolytes within a narrow range is vital for muscle contractions, nerve impulses, a stable acid-base balance, and control of fluid within the body. Acid-base levels affect the function of enzymes and nearly all cellular processes, including immune function, neuronal excitability, and myocardial blood flow. Given the fact that all body systems are affected by fluid, electrolytes, and acid-base balance, it is imperative that nurses be knowledgeable about these topics (Quade et al., 2021).

20.1 Fluid and Electrolyte Balances

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the principles of fluid and balances in the body
- Identify principles of electrolytes and balances in the body
- Explain the regulation mechanisms of fluid and electrolyte balance

The principle of fluid and electrolyte balance is one of the cornerstones of nursing practice. The human body must

maintain strict balance between fluid levels and electrolyte concentrations in order for physiological processes to occur normally. To maintain this balance, there are multiple regulatory mechanisms that restore fluid and electrolyte balance. However, those regulatory mechanisms sometimes fail. Nurses must be knowledgeable about the signs and symptoms of a fluid and electrolyte imbalance so that they can intervene early and prevent serious complications.

Principles of Fluids and Balances in the Body

To ensure **homeostasis** and acid-base balance, the human body must maintain a consistent balance of fluid and electrolytes. Homeostasis refers to the process by which the human body maintains its balance by adjusting to internal and external stimuli. When homeostasis is not maintained, the patient is at risk for organ system dysfunction or even death. Nurses must recognize subtle signs of fluid and electrolyte imbalances. By doing so, they can intervene early and prevent patient complications.

Composition of Body Fluids

Body fluid is composed of water and solutes. A **solute** is any substance that is dissolved in a solution. Examples of solutes in body fluid are proteins, electrolytes, and metabolites. There are two main compartments of body fluid in the body: the intracellular compartment and the extracellular compartment. Approximately two-thirds of body fluid is found in the intracellular space and one-third is in the extracellular compartment (Figure 20.2) (Tobias & Mohiuddin, 2022).

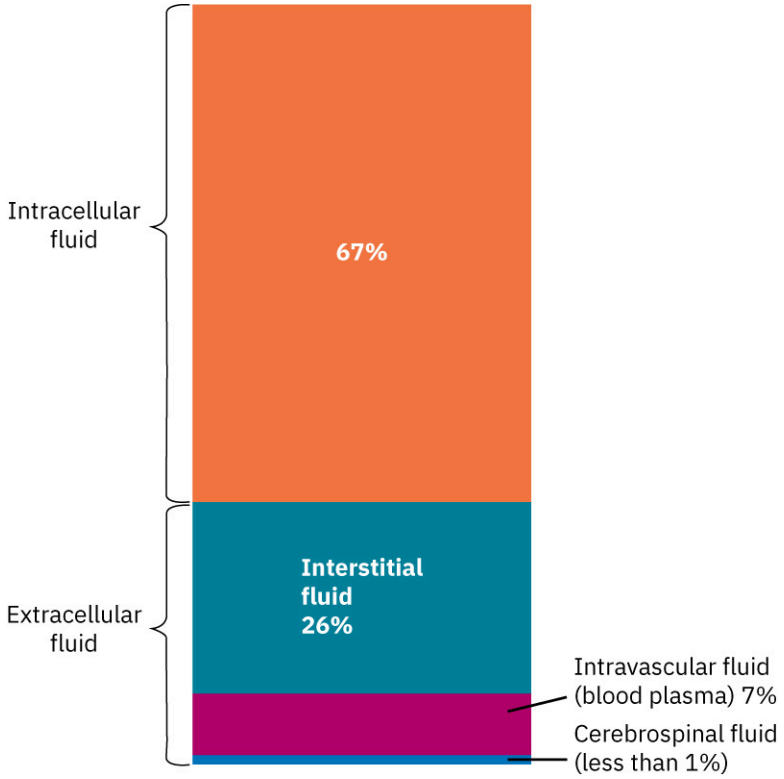

FIGURE 20.2 Although cerebral spinal fluid (CSF) is extremely important in protecting the brain and spinal cord, it makes up less than 1 percent of total body fluid. (credit: modification of "Cellular Fluid Content" by "Welcome1To1The1Jungle"/Wikimedia Commons, CC BY 3.0)

Intracellular Fluids

The **intracellular fluid** is the body fluid found inside the body's cells. Within this space, multiple chemical reactions occur. Therefore, it is important to maintain consistent solute concentrations. Alterations in solute concentration can change the acid-base balance inside the cell, which affects the structure and function of enzymes. An **enzyme** is a protein that catalyzes chemical reactions. When enzymes do not function normally, chemical reactions that normally take place inside the cells are significantly impacted (Brinkman & Sharma, 2023).

Extracellular Fluids

The **extracellular fluid** is the body fluid found outside of cells. It is subdivided into three categories: interstitial fluid,

blood plasma, and transcellular fluid. The fluid that surrounds the cells is called **interstitial fluid**. Intravascular fluid, also known as **blood plasma**, is the liquid component of blood. It is whole blood minus the red blood cells, white blood cells, and platelets (Tobias & Mohiuddin, 2022). The fluid within epithelial-lined spaces is called **transcellular fluid**. Examples of transcellular fluid include cerebrospinal fluid, ocular fluid, and joint fluid. Transcellular fluid makes up less than 1 percent of total body fluid (Chen & Khalili, 2023).

Body Fluid Balance

Maintenance of fluid balance is necessary for optimal health. Nurses must recognize fluid imbalances because health problems can result from a patient having too much or too little fluid. Certain physiological conditions, such as renal disease and cardiac disease, can cause an excess accumulation of fluid, known as **hypervolemia**. On the other hand, decreased oral intake or excessive fluid loss can cause a negative fluid balance, known as **hypovolemia**. An optimal fluid balance for cellular processes is a net even, or **euvolemic**, fluid balance (Simpson & McIntosh, 2021).

In addition to problems related to total body fluid balance, fluid can be in the wrong compartment. For example, the patient can have an excess of extracellular fluid. A primary sign of excess extracellular fluid is **edema**, or swelling, caused by the accumulation of fluid in the body's tissues. Extracellular fluid can also shift into the intracellular space, causing an excess of intracellular fluid. This process is seen in conditions such as cerebral edema. Having excess fluid in brain cells causes impaired neurological function. Fluid distribution in the body is largely determined by the solute concentration in both intracellular and extracellular fluid. Having a higher solute concentration in one compartment draws fluid into that compartment to maintain an equal solute concentration in both compartments (Simpson & McIntosh, 2021).

Fluid Volume Deficit

Also referred to as hypovolemia or dehydration, **fluid volume deficit** is a medical condition in which fluid loss exceeds fluid intake. A fluid volume deficit can occur in any age group, but children under the age of two and older adults are at greater risk. Common causes of fluid volume deficit include vomiting, diarrhea, fever with excessive sweating, and inadequate oral intake. Nurses must recognize signs of dehydration to intervene early. Possible signs of dehydration in infants and young children include crying without tears, no wet diapers for three hours or more, irritability, sunken eyes, and a sunken fontanel. Mild cases of fluid volume deficit can be treated with oral rehydration. More severe cases require intravenous fluid administration.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Recommend Laboratory Analysis

The nurse is admitting a 9-month-old infant with a three-day history of vomiting and diarrhea. When completing the admission assessment, the nurse notes the infant's eyes are sunken and anterior fontanelle (or fontanel) is depressed. Recognizing that the infant's physical assessment is concerning for dehydration, the nurse analyzes other cues to see if additional diagnostic tests may be warranted. The nurse considers possible treatment options for dehydration and determines intravenous fluid may be needed. The nurse reviews the medical orders and notes that the infant is ordered a clear liquid diet, and no baseline laboratory values were requested. The nurse pages the on-call provider to discuss the patient's clinical status. During the conversation, the nurse recommends sending a basic metabolic panel to monitor the patient's hydration status and placing a peripheral IV.

Fluid Volume Overload

Also referred to as hypervolemia, **fluid volume overload** is a medical condition in which an excessive amount of fluid is retained in the intravascular fluid compartment. Certain medical conditions place patients at risk for developing fluid volume overload. These conditions include heart failure, kidney failure, cirrhosis, and pregnancy. Patients with fluid volume overload often present with pitting edema, ascites, and dyspnea and crackles in the lung fields. Treatment of fluid volume overload often involves restricting sodium and fluid intake. It may also include diuretic use to help remove excess fluid.

CULTURAL CONTEXT

Preference for Traditional Medicines

Heart failure is a common chronic condition that often improves with diet and lifestyle modifications such as sodium restriction and fluid restriction. When providing education about heart failure management, nurses should be cognizant of how cultural preferences influence the patient's response to education about diet and lifestyle modification. Many ethnic groups in the United States may prefer traditional medicine practices and be more likely to adhere to diet and fluid recommendations if the practitioner takes into consideration their cultural preferences. For example, many people in the Hispanic/Latino community may use traditional remedies such as herbal teas or treatments derived from *curanderismo* (traditional folk healing). If a practitioner acknowledges and integrates these practices, such as recommending safe herbal teas that complement medical treatments, patients may be more receptive to following dietary and fluid intake guidelines. Similarly, Chinese patients may rely on traditional Chinese medicine (TCM), which includes practices such as acupuncture, tai chi, and the use of specific herbs and foods for their medicinal properties. Practitioners who understand and respect TCM can provide dietary recommendations that align with these practices, such as suggesting foods that balance yin and yang, thereby increasing patient adherence to medical advice. Nurses should be knowledgeable about the diet and traditional medicine beliefs of the patient population they serve. By doing so, their patients are more likely to be receptive to the education (Kulakaç et al., 2022).

Principles of Electrolytes and Balances in the Body

Electrolytes are different from other solutes because they have an electrical charge, either positive or negative, when dissolved in water. The electrical charge of electrolytes is important for multiple cellular processes, including initiation of muscle contractions, initiation of nerve signals, maintenance of acid-base homeostasis, and distribution of fluid across different compartments. There are multiple regulatory systems within the human body that maintain electrolytes within a narrow range so that they are able to fulfill their function in maintaining homeostasis.

Electrolyte Composition of Body Fluids

Body fluid composition is maintained in a normal physiological range by regulatory mechanisms that control water and solute concentrations in both the intracellular and extracellular spaces. There is a narrow range of normal electrolyte values that body fluid composition should stay within, and slight abnormalities can have serious consequences. For this reason, it is important for nurses to know normal electrolyte ranges, understand the cause of electrolyte imbalances, recognize the signs and symptoms of an imbalance, and identify appropriate treatments (Table 20.1).

Electrolyte	Functions in the Body	Normal Adult Range
Bicarbonate	Maintains acid-base homeostasis	22–29 mEq/L
Calcium	Necessary for muscle contractions, nerve impulses, blood clotting, and healthy bones and teeth	8.6–10.2 mg/dL
Chloride	Helps maintain fluid balance and is an important component of stomach acid	96–106 mEq/L
Magnesium	Necessary for muscle and cardiac contractions, bone strength, and muscle formation	1.5–2.4 mEq/L
Phosphate	Essential for energy production, bone and teeth formation, and cell signaling	3.4–4.5 mg/dL

TABLE 20.1 Common Electrolytes in the Human Body and Their Function

Electrolyte	Functions in the Body	Normal Adult Range
Potassium	Helps maintain fluid balance, controls heart contractions, and regulates heart rhythm	3.5–5.1 mEq/L
Sodium	Regulates fluid balance and necessary for nerve and muscle contractions	135–145 mEq/L

TABLE 20.1 **Common Electrolytes in the Human Body and Their Function**

LIFE-STAGE CONTEXT

Dehydration Risk in Children Under the Age of 2

Infants and young children under the age of 2 are at a higher risk of dehydration than other age groups. Children in this age group have immature immune systems and are more susceptible to infections, such as gastroenteritis, which can cause vomiting and diarrhea. Children under the age of 2 also have a higher metabolic rate, which results in more insensible fluid loss. Lastly, they are unable to communicate their needs to hydrate themselves (Vega & Avva, 2024).

Sodium

Sodium (Na^+) is the most abundant electrolyte in the extracellular fluid compartment. The concentration of sodium plays an important role in maintaining an appropriate fluid balance in the intravascular and interstitial spaces. Sodium ions play a pivotal role in regulating extracellular fluid volume and are essential for generating the **action potential**, which is the voltage difference across a cell membrane. The action potential is determined by the balance of ions between the intracellular and extracellular fluid. Action potentials are vital for the proper functioning of neurons, pacemaker cells in the heart, muscles, and nerves.

The normal serum sodium range is 135 to 145 mEq/L. A common phrase in fluid and electrolyte physiology is "water follows sodium." A high serum sodium levels pulls fluid out of the intracellular space and a low serum sodium level moves fluid into the intracellular space, causing cells to swell. The brain cells are particularly sensitive to these fluid shifts in response to changes in serum sodium levels. Signs of **hypernatremia**, or an elevated serum sodium level, include mental confusion, irritability, seizures, severe thirst, and dry mucous membranes. Signs of **hyponatremia**, or a low serum sodium level include headache, confusion, nausea, seizures, and coma (Allen & Sharma, 2023; Barker & VonColln-Appling, 2023).

PATIENT CONVERSATIONS

Resistance to Diet Modifications

Scenario: Julian is a 19-year-old with type 1 diabetes, hypertension, and kidney disease. He receives health care at a family practice clinic that provides services to the uninsured. Over the last six months, his blood pressure has increased; however, he is resistant to taking new medications or making any diet or lifestyle changes. He came to the clinic today to meet with the nurse case manager for the diabetes team.

Nurse: Hi, Julian. My name is Rebecca. I'm a nurse who helps patients who have diabetes.

Patient: Hi, Rebecca. It's nice to meet you. I'm really stressed out because I lost my insurance and it's hard for me to buy my medications.

Nurse: That sounds really stressful. We have a prescription assistance program. Often, we can provide you with samples of the medications that you need until we can work out a permanent solution. In the meantime, I'd like to talk about other things you can do to help manage your condition, such as diet and exercise modification.

Patient: What do you mean? I'm a type 1 diabetic. I need insulin! Why are you bothering to talk to me about stupid

stuff like diet?

Nurse: I understand that you need insulin, and I'll make sure you leave the clinic today with the medicine you need. However, with the kidney disease and high blood pressure along with the diabetes, lifestyle modifications are oftentimes needed in addition to medications. Has anyone talked to you about the effect of sodium on blood pressure and kidney disease?

Patient: No. And I don't see why it matters. Having a chronic illness sucks. It's not my fault I'm a diabetic.

Nurse: Of course, it's not your fault. I'm not judging you or trying to make you feel bad. I just want to make sure you understand what's going on inside your body so that you can make the best decisions for yourself.

Patient: Hmmm, okay.

Nurse: High blood sugar and high blood pressure both negatively impact your kidneys. When you add a high-salt diet on top of that, it can make the kidney damage worse. You've just started showing signs of kidney disease and I want to help you protect your kidneys to minimize potential harm to your body. Does that make sense?

Patient: I guess so.

Nurse: Okay, let's talk about some things you can do at home. First of all, limiting your salt intake is important. Salt draws fluid into your bloodstream and makes your blood pressure higher. If you cut back on processed foods that contain a lot of salt—such as canned soups, bacon, chips, frozen pizzas, Ramen noodles, and things like that—you might feel better and see improvements in your blood pressure. Also, it would be great to exercise three times per week. You don't need to join a fancy gym or anything, you can just go for a thirty-minute brisk walk or maybe ride your bike. How does trying those things sound to you?

Patient: I don't really see why exercising and decreasing my salt intake is important for a diabetic, but I could try.

Nurse: Trust me, those small lifestyle changes will help. I'd like to see you back in the clinic in two weeks for another blood pressure check and to track your progress with exercise and diet. Now I'm going to talk to your provider to make sure I have the most updated information for your prescription medications. How do you feel about the plan?

Patient: Okay. I was scared about not being able to afford my insulin. If you can help with that I'll try to limit my salt intake and think about the exercise.

Nurse: Great. I know managing diabetes is stressful. I'll make sure you have the insulin sorted out before you leave today, and I'll see you back in my office in two weeks. Deal?

Patient: Yeah, thanks for your help.

Potassium

Potassium (K^+) is the most abundant electrolyte within the intracellular fluid. Serum potassium levels are maintained inside the cell via active transport using the sodium–potassium pump. Serum potassium levels are regulated by the hormone aldosterone in the kidneys. Normal potassium levels are needed for cardiac function, neural function, and muscle contractility (Sur & Mohiuddin, 2022).

The normal serum potassium range is 3.5 to 5.1 mEq/L. An increased serum potassium level greater than 5.1 mEq/L is referred to as **hyperkalemia**. Signs of hyperkalemia, or an elevated potassium level, include irritability, gastrointestinal cramping, diarrhea, and peaked T waves on an electrocardiogram. If hyperkalemia worsens, the patient may progress to cardiac dysrhythmias or cardiac arrest (Barker & VonColln-Appling, 2023). Common causes of hyperkalemia are kidney failure, metabolic acidosis, use of potassium-sparing diuretics, and/or administration of potassium supplements. Mild hyperkalemia often involves adjustments to medications and decreasing potassium oral intake. For more severe cases, sodium polystyrene (Kayexalate) is often administered either orally or rectally. Kayexalate binds potassium so it can be excreted via the gastrointestinal tract. For severe symptomatic hyperkalemia, temporary hemodialysis may be used (Sur & Mohiuddin, 2022).

Hypokalemia refers to a decreased serum potassium level or a level less than 3.5 mEq/L. Potential causes of hypokalemia include excessive vomiting, diarrhea, use of potassium-wasting diuretics, and a low potassium diet.

Signs of **hypokalemia**, or having a low serum potassium level, include muscle weakness, lethargy, and a thready pulse (Cleveland Clinic, 2022). Treatment of hypokalemia revolves around replacing the missing potassium. Mild hypokalemia is often treated with oral potassium supplements. More severe cases may require intravenous potassium administration. Because potassium is excreted by the kidneys, it is imperative to confirm that the patient has adequate urine output prior to giving a potassium replacement (Barker & VonColln-Appling, 2023).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: What To Do If a Patient Requires Intravenous (IV) Potassium Supplements

Disclaimer: Always follow the agency's policies.

Steps	Description/Rationale
Assess the patient's fluid status and renal function.	IV potassium should only be given to patients who are well-hydrated and who have normal renal function. Patients who are dehydrated or have decreased renal clearance of potassium could develop life-threatening hyperkalemia during IV potassium administration.
Assess and document the patient's IV access.	Potassium salts are highly caustic to veins. Ideally potassium should be administered via a central line. If it is not infused via a central line, it should be infused via a large, high-flow vein.
Place the patient on a bedside cardiac monitor and record a set of baseline vital signs prior to administration.	Intravenous potassium administration can cause cardiac arrhythmias. Continuously monitor the patient to prevent complications.
Verify the dose of IV potassium ordered with a second nurse.	An accidental overdose of potassium can be life-threatening. Always double-check the dose of potassium ordered with a second RN. Both RNs should document the administration on the medication administration record (MAR).
Start the infusion of potassium slowly, at a maximum rate of 20 mEq/hr.	Rapid administration of potassium can cause cardiac arrest.
After the infusion is complete, send a follow-up serum potassium level. Make sure the blood is not drawn from the same line used to infuse the potassium.	Following up on the patient's potassium level is important to ensure the patient's safety. High potassium levels are associated with cardiac arrhythmias and cardiac arrest. The post-infusion level must be drawn from a different line because potassium can stick to IV tubing and could alter the results of the follow-up potassium level.

Calcium

Calcium (Ca^{2+}) is more common in the extracellular fluid than in the intracellular fluid. However, most of the total body calcium is stored in the bones. Calcium is important for bone and teeth structure, nerve transmission, and muscle contraction. Serum calcium levels are regulated by parathyroid hormone, dietary intake, and physical activity. Physical activity promotes the incorporation of calcium into bones, contributing to bone density, whereas extended periods of immobility may lead to the release of calcium from bones into the bloodstream. Dietary sources of calcium include dairy products, green leafy vegetables, and whole grains.

The normal serum calcium range is 8.6 to 10.2 mg/dL (Barker & VonColln-Appling, 2023; Drake & Gupta, 2024). Having an elevated serum calcium level is known as **hypercalcemia**. Possible causes of hypercalcemia are prolonged immobilization that causes calcium to leach out of bones into the serum. It can also be caused by certain types of cancer, such as parathyroid tumors, that increase the secretion of parathyroid hormone (PTH). Hypercalcemia primarily affects the gastrointestinal and musculoskeletal systems. Symptoms of hypercalcemia include nausea, vomiting, constipation, and skeletal muscle weakness. Mild hypercalcemia may be treated with dietary modifications such as decreasing intake of calcium and increasing intake of phosphorus, which binds to calcium and makes it inactive. Patients with limited mobility and hypercalcemia may benefit from weight-bearing exercise to stop the leaching of calcium from the bones into the serum. More severe or chronic hypercalcemia may require hemodialysis or surgical removal of the parathyroid gland (Barker & VonColln-Appling, 2023).

Having a low serum calcium level, known as **hypocalcemia,** can be caused by hypoparathyroidism, vitamin D deficiency, and or renal disease. Without adequate levels of PTH, not enough calcium is reabsorbed by the kidneys. Vitamin D deficiency causes hypocalcemia because vitamin D is necessary for absorption of dietary calcium from the gastrointestinal tract. In patients with renal disease, the kidneys may excrete too much calcium, resulting in hypocalcemia. The primary symptom of hypocalcemia is **paresthesia,** or numbness and tingling sensation. Hypocalcemia paresthesia is felt in the lips, tongue, hands, and feet. Patients with hypocalcemia may also experience muscle cramps and **tetany**, or involuntary muscle contractions. **Chvostek's sign,** an involuntary twitching of the facial muscle when the facial nerve is tapped, is a classic sign of hypocalcemia (Omerovic & M Das, 2023). **Trousseau's sign**, or the involuntary spasm of the hand when a blood pressure cuff is inflated above the diastolic blood pressure for three minutes, is also a classic sign of hypocalcemia (Patel & Hu, 2023). Most cases of hypocalcemia can be treated with dietary modifications. Patients are encouraged to increase calcium and vitamin D intake and decrease phosphorus intake. Severe cases of hypocalcemia may be treated with intravenous calcium replacements (Drake & Gupta, 2024).

LINK TO LEARNING

This video about Chvostek's and Trousseau's signs (https://openstax.org/r/77chvostek) helps you gain an understanding of how to elicit these signs.

Magnesium

Magnesium (Mg^{2+}) is an important electrolyte for cardiac, nerve, and muscle function. Approximately 50 percent of the body's magnesium is stored in the bones. The remaining magnesium is primarily stored in the intracellular fluid. The normal serum magnesium level is 1.5 to 2.4 mEq/L (Barker & VonColln-Appling, 2023). Maintaining serum magnesium levels is necessary for normal cardiac function, nerve stimulation, muscle contractions, and immune health.

Having an elevated serum magnesium level is known as **hypermagnesemia**. Many cases of hypermagnesemia are caused by medication misuse, such as taking excessive magnesium supplements or using magnesium-containing laxative or antacids. It can also be caused by renal failure. Patients presenting with hypermagnesemia may have bradycardia, lethargy, hyporeflexia, muscle weakness, and tremors. Severe cases may lead to cardiac arrest. Mild cases of hypermagnesemia can be treated by increasing fluid intake and limiting oral intake of magnesium. In severe cases, dialysis is needed to lower magnesium levels (Barker & VonColln-Appling, 2023).

Having a low serum magnesium level is referred to as **hypomagnesemia**. The most common cause of hypomagnesemia is inadequate dietary intake of magnesium. Patients with alcohol use disorder are at high risk for hypomagnesemia because they tend to have a poor diet and have impaired nutrient absorption from the gastrointestinal tract. It can also be secondary to loop diuretic use, which causes the excretion of magnesium in the urine. Common signs and symptoms of hypomagnesaemia include vomiting, lethargy, weakness, and leg cramps. Severe cases can lead to cardiac dysrhythmia, or an abnormal heart rhythm or heart rate. Mild cases of hypomagnesemia can be treated with increasing oral intake of magnesium. More severe cases require IV replacement of magnesium (Allen & Sharma, 2023).

Chloride

Chloride (Cl^-) is the second-most common electrolyte in the extracellular fluid. It plays a key role in regulation of body fluids, electrolyte balance, and acid-base balance. Chloride is almost always bound to other electrolytes, such as sodium, which makes it unusual for a patient to have an isolated chloride abnormality. If the serum chloride level is out of range, most often another electrolyte, such as sodium, is also out of range. The presence of a chloride deviation is most often associated with an underlying acid-base imbalance. The normal serum chloride range is 96 to 106 mEq/L (Wu & Yan, 2023).

Having an elevated serum chloride level, known as **hyperchloremia**, can occur when water loss exceeds sodium and chloride losses. Because chloride is an anion that is commonly used in chemical reactions, hyperchloremia is also seen in patients with acid-base imbalances. Symptoms of hyperchloremia are linked to the underlying cause of the electrolyte imbalance. The treatment is to treat the underlying cause (Song et al., 2022).

Having a low serum chloride level, known as **hypochloremia**, is usually caused by nasogastric suctioning, vomiting, or the excessive use of loop diuretics. Loop diuretics excrete both potassium and chloride and gastric contents contain hydrochloric acid (HCL). Therefore, losing large amounts of gastric contents causes hypochloremia. There have also been cases of hypochloremia related to malnutrition (Signorelli et al., 2020). There are no specific symptoms of hypochloremia. The treatment is to fix the underlying cause of the electrolyte disorder (Signorelli et al., 2020).

Bicarbonate

Bicarbonate (HCO^{3-}) is one of the major anions, or negatively charged electrolytes, in the extracellular fluid. Bicarbonate is a base (a molecule that can donate a hydroxide ion (OH^-) in chemical reactions). Its main function is to act as a buffer and uphold homeostasis in **pH**, which refers to the concentration of hydrogen ions in a given solution. Bicarbonate is generated spontaneously from carbon dioxide and water, or via the catalytic activity of the enzyme carbonic anhydrase. The kidneys help maintain optimal bicarbonate levels by either excreting or reabsorbing bicarbonate. The normal serum bicarbonate range is 22 to 29 mEq/L (Moustafa et al., 2022).

Phosphate

Phosphate (PO_4^{3-}) is an important electrolyte in the human body that is needed for energy production, cell membrane formation, and deoxyribonucleic acid (DNA). Bones contain about 85 percent of the body's phosphate. The remaining 15 percent is found in the intracellular fluid compartment. The body obtains phosphate from dietary intake. Foods high in phosphate include dairy products, egg yolk, and chocolate. The kidneys regulate phosphate levels by excreting phosphate in the urine.

The normal serum phosphate range is 3.4 to 4.5 mg/dL (Lewis, 2023; Sharma et al., 2024). Having an elevated serum phosphorus level is known as **hyperphosphatemia**. Having elevated phosphate levels does not cause any symptoms. However, because phosphate levels and calcium levels are inversely related, patients with hyperphosphatemia may develop symptomatic hypocalcemia. Mild hyperphosphatemia can be treated with decreasing oral intake of phosphorus. Patients may also be prescribed phosphorus-binding agents that bind phosphate and help with excretion. As a last resort, hemodialysis can be used to correct hyperphosphatemia.

Having a low serum phosphate level is referred to as **hypophosphatemia**. Chronic hypophosphatemia can be caused by parathyroid gland tumors, vitamin D deficiency, prolonged use of phosphate binders, and malnutrition. Acute hypophosphatemia can be the result of burns, diuretic use, and diabetic ketoacidosis. Mild hypophosphatemia is usually asymptomatic. However, severe cases can cause muscle weakness, seizures, and even death. The primary treatment of hypophosphatemia is to treat the underlying cause. If needed, phosphorus supplements can be given both orally and intravenously (Sharma et al., 2024).

LINK TO LEARNING

West Coast University provides a concise review of the principles of fluid and electrolyte balances (https://openstax.org/r/77flelectrol) in the human body.

Regulation of Fluid and Electrolyte Balance

The fluid compartments of the body are interdependent. Homoeostasis of the different compartments depends on their interactions with each other. Fluid and electrolytes can move between the compartments by passive or active transport. Active transport requires energy expenditure and passive transport does not. The movement of solutes through a transmembranous protein (a gatekeeper that controls what gets into and out of a cell) using energy expenditure is called **active transport**. The movement of solvents and solutes across cell membranes based on the concentration gradients, or the process of substances moving from an area of high concentration to an area of low concentration, is known as **passive transport**. Passive transport is subdivided into two categories: osmosis and diffusion. Through the principles of active and passive transport, the human body maintains fluids, electrolytes, and other solutes in optimal concentrations for chemical reactions and cellular processes to occur (Chen & Lui, 2023).

Osmosis

The passage of a solvent, or a liquid, through a semipermeable membrane from an area of lower solute concentration to an area of higher solute concentration is called **osmosis**. The solvent passes through the membrane from the solution with the higher concentration of solutes to the side with the lower concentration until the two solutions are equal in concentration. The rate of osmosis largely depends on the osmotic pressure, which is determined by the concentration of solutes. The higher the osmotic pressure, the faster the fluid moves. The rate of osmosis is also dependent on the permeability of the membrane and the electric potential across the cell membrane (Lopez & Hall, 2023).

Diffusion

The passage of solutes (e.g., electrolytes, proteins, and metabolites) through a semipermeable membrane that separates solutions with two different solute concentrations is called **diffusion** (Figure 20.3). It is very similar to osmosis in that the diffusion rate is driven by the concentration of solutes. However, it differs from osmosis in that diffusion is the passive transport of solutes, instead of solvents (liquids). Solutes move via diffusion from the solution with the higher concentration to the solution with the lower concentration until the two solutions have equal concentrations (Lopez & Hall, 2023).

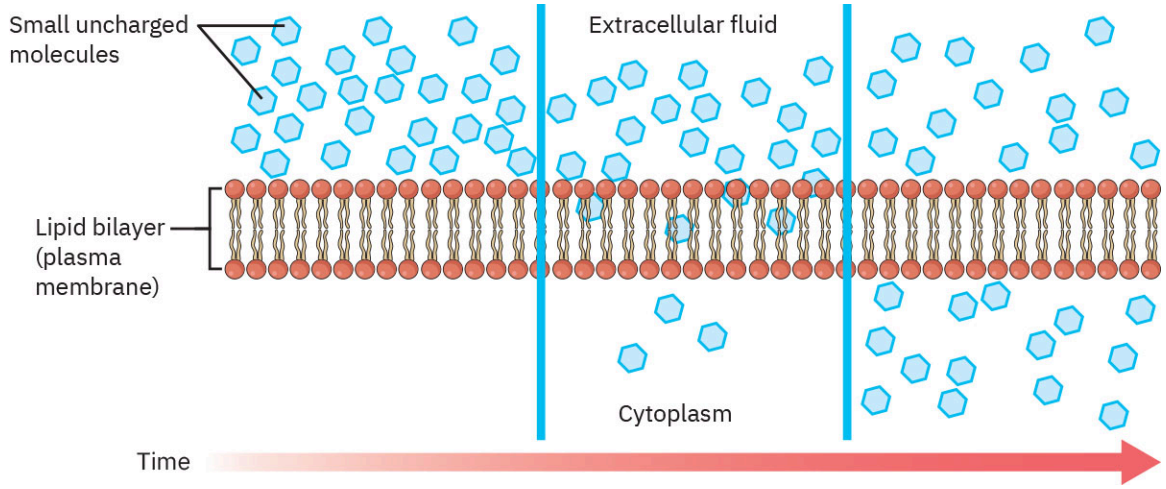

FIGURE 20.3 The structure of the cell membrane allows diffusion of uncharged substances, such as oxygen and carbon dioxide, to pass through the cell membrane down their concentration gradient in a process known as diffusion. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Active Transport

The phospholipid layer and the electrochemical gradient of cell membranes prevent the movements of some substances across the membrane. Active transport, or the movement of solutes through a transmembrane protein using energy expenditure, is the mechanism that cells use to overcome the impediment posed by the cell membrane, or to move solutes against a concentration gradient. By active transport, cells accumulate needed resources inside the cells. Examples of solutes moved via active transport include electrolytes, sugar, and amino acids (Chen & Lui, 2023). An example of active transport is the sodium–potassium pump. The sodium–potassium pump is located on the outer plasma membrane of cells and maintains a higher concentration of sodium extracellularly and a high concentration of potassium intracellularly. Without the sodium–potassium pump, the

concentrations of sodium and potassium would equalize across the cell membrane through the process of diffusion (Pirahanchi & Aeddula, 2023).

Capillary Filtration

The process of delivering oxygen and other nutrients and removing cellular waste through the capillary system is called **capillary filtration**. Capillaries are the smallest blood vessels in the circulatory system. They connect arteries, which deliver oxygen and nutrients to target tissue, to veins, which transport waste products back to the heart and lungs. Capillaries form a bed, or network, of multiple capillaries. One end of the capillary bed is the arterial side, and the other end is the venous side. The pressure on the arterial side is greater, which pushes nutrients and oxygen from the arterial capillary bed into the surrounding tissue. The pressure on the venous side of the capillary bed is lower, which causes waste products to be reabsorbed from the tissue into the capillary bed (Pias, 2021).

LINK TO LEARNING

This video reviews how the capillary bed helps deliver oxygen and remove waste products (https://openstax.org/r/77capilbed) in the body.

Body Systems and Organs

In addition to active and passive transport, various body systems are responsible for regulating fluid and electrolytes to maintain body homeostasis. Hormones also play an integral role in stimulating various organ systems to either excrete or reabsorb electrolytes. Total body fluid is regulated by the renal system. In response to pressure in the renal tubules, the kidneys suppress or excrete antidiuretic hormone. When total body fluid is down, or the patient is hypovolemic, more antidiuretic hormone (ADH) is released, which causes the kidneys to reabsorb more water. When fluid volume in the renal tubules is high, the kidneys suppress ADH, resulting in hypervolemia and more dilute urine. Table 20.2 explains how different body systems regulate serum electrolyte levels.

Electrolyte	Primary Fluid Compartment	Body System and Hormones that Regulate Serum Levels	Signs and Symptoms of Excess	Signs and Symptoms of Deficit
Sodium (Na^+)	Extracellular	Renal system Aldosterone	Confusion, irritability, seizures, thirst, dry mucous membranes	Headache, confusion, seizures, coma
Potassium (K^+)	Intracellular	Renal system Aldosterone, insulin, epinephrine, and glucocorticoids	Irritability, gastrointestinal cramping, peaked T waves on ECG, cardiac arrest	Muscle weakness, lethargy, thready pulse, flattened or inverted T waves on ECG, U wave on ECG, ST segment depression on ECG
Calcium (Ca^{2+})	Extracellular	Skeletal system Parathyroid hormone, vitamin D, and calcitonin	Nausea, vomiting, constipation, skeletal muscle weakness	Muscle tingling, muscle cramps, tetany

TABLE 20.2 Electrolyte Regulation in the Human Body (Sources: Ryan & Kovacs, 2020; Merrill & Chambliss, 2020; Ito et al., 2024.)

Electrolyte	Primary Fluid Compartment	Body System and Hormones that Regulate Serum Levels	Signs and Symptoms of Excess	Signs and Symptoms of Deficit
Magnesium (Mg^{2+})	Intracellular	Renal system Parathyroid hormone and vitamin D	Bradycardia, lethargy, hyporeflexia, muscle weakness	Nausea, vomiting, tremors, tetany, dysrhythmias
Chloride (Cl^-)	Extracellular	Renal system Aldosterone	Dependent upon the primary electrolyte that is causing the chloride excess	Dependent upon the primary electrolyte that is causing the chloride deficiency
Bicarbonate (HCO_3^-)	Extracellular	Renal System Aldosterone	Confusion, numbness in the face, hands, or feet, nausea, vomiting	Increased heart rate, headache, deep breathing
Phosphate (PO_4^{3-})	Intracellular	Renal system and gastrointestinal system Parathyroid hormone and vitamin D	Bone pain, loss of appetite, weakness, irritability	Muscle cramps, bone and joint pain, rash, itchy skin

TABLE 20.2 Electrolyte Regulation in the Human Body (Sources: Ryan & Kovacs, 2020; Merrill & Chambliss, 2020; Ito et al., 2024.)

20.2 Acid-Base Balances

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the principles of acid-base balance
- Identify the principles of acid-base imbalance
- Explain the regulation of balance systems

Understanding principles of acid-base balance is an essential concept in nursing. Many patients are at risk for acid-base imbalance because of chronic diseases such as kidney disease, lung disease, cardiac disease, and endocrine disorders. If acid-base homeostasis is not maintained, the patient can experience severe consequences or even death. Given the severity of potential complications, nurses must be knowledgeable about acid-base disorders, recognize the symptoms of an imbalance, and know how to intervene if acid-base homeostasis is not maintained.

Principles of Acid-Base Balance

Ensuring that the acid-base balance of human blood remains within a normal range is crucial for maintaining health. Many enzymes and cellular processes do not function normally if the blood's level of acid or base is too high or too low. Having an uncontrolled acid-base imbalance can even lead to death. There are regulatory systems within the body that correct imbalances to bring the acid-base level back into normal range. It is vital for nurses to understand the basic principles of the acid-base balance so that they can intervene early if there is an abnormality (Lewis, 2023).

Acid

An **acid** is a molecule that can donate a hydrogen ion (H^+) in chemical reactions. There are multiple acids in the

human body that maintain the acid level at a specific concentration for enzymes to work. For example, pepsin is an enzyme that breaks down protein in the small intestine. To be activated, pepsin must be in an acidic environment. The stomach secretes HCL to activate pepsin when we eat. In this case, HCL is isolated to the gastrointestinal tract and does not affect the acid-base balance of the body as a whole (Patricia & Dhamoon, 2022).

The acid level in the blood is vitally important for homeostasis. The molecule in the human blood that regulates acid levels is $PaCO_2$, or the partial pressure of carbon dioxide. The normal $PaCO_2$ level is 35 to 45 mm Hg. The act of breathing involves the exhalation of carbon dioxide (CO_2). Consequently, the respiratory system plays a role in controlling the level of $PaCO_2$ in the bloodstream (Lewis, 2023).

Base

Just as the acid level in the blood is vital to homeostasis, so is the concentration of base. A **base** is a molecule that donates hydroxide ions (OH^-) in chemical reactions. In the human body, base is represented by the bicarbonate ion (HCO_3^-). The kidneys regulate the bicarbonate level by either excreting bicarbonate in the urine or reabsorbing it back into the bloodstream. The normal serum bicarbonate range is approximately 22 to 29 mmol/L (Hopkins et al., 2022); however, reference ranges may vary slightly by laboratory.

pH

The pH, or potential of hydrogen, serves as the indicator for the acid-base balance in a solution. It is a numerical representation of the concentration of hydrogen ions within that particular solution. The typical pH range for arterial blood falls between 7.35 and 7.45. A pH below 7.35 indicates **acidosis**, signifying an abundance of hydrogen ions in the blood. Conversely, a pH exceeding 7.45 suggests **alkalosis**, indicating a shortage of hydrogen ions in the blood (Hopkins et al., 2022). Symptoms of mild alkalemia are related to the underlying cause of the imbalance (Lewis, 2023). Extended or severe alkalemia results in a relative hypocalcemia, as ionized calcium tends to bind more readily to proteins in an alkalotic environment (Hopkins et al., 2022). Symptoms of acidosis are related to the underlying cause. If the acidosis is mild, the patient may be asymptomatic. However, extended or severe acidosis causes potassium ions to shift out of cells to buffer the net influx of positive hydrogen ions, resulting in systemic hyperkalemia (Mount, 2024). The pH of blood and the concentration of available hydrogen ions is determined by the balance of carbon dioxide (CO_2) and bicarbonate (HCO_3^-). The most accurate way to measure the blood pH is through an arterial blood gas sample. Venous blood has considerably less oxygen and more carbon dioxide than arterial blood because venous blood returns cellular waste to the heart and lungs to expel carbon dioxide and pick up oxygen. Although it is also possible to monitor pH via a capillary blood gas or a venous blood gas, both of those tests tend to report more acidotic results. The type of blood gas sample must be considered when interpreting results (Figure 20.4) (Castro & Keenaghan, 2024).

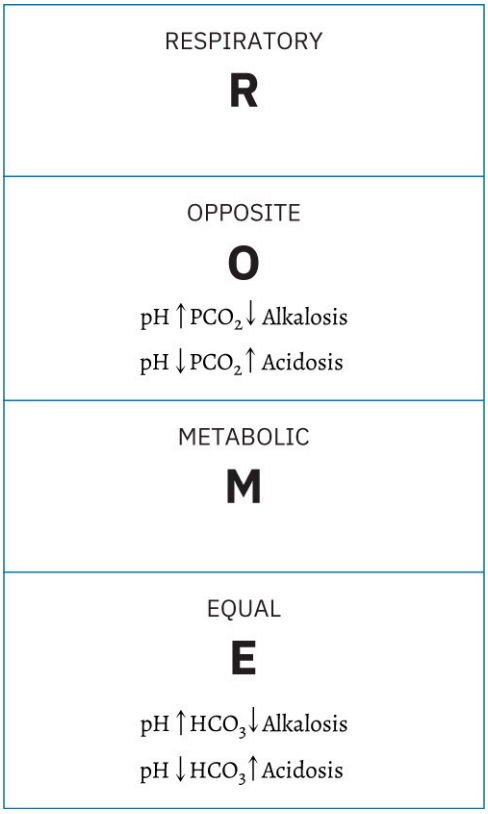

FIGURE 20.4 When interpreting arterial blood gas samples, many students find it helpful to remember that in a respiratory imbalance, pH and CO_2 move in opposite directions (Respiratory Opposite). In metabolic imbalances, pH and HCO_3^- move in the same direction (Metabolic Equal). (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: How to Draw a Capillary Blood Gas Sample

Disclaimer: Always follow the facility's policies.

Steps	Rationale/Description
Choose the puncture site. For infants 0–12 months, puncture the outer aspect of the heel. For adults and children over age 1, puncture the outer aspect of the finger.	A capillary blood gas is a less invasive procedure than an arterial blood gas sample, which makes it a good option for infants and young children whose veins and arteries can be difficult to access. In adults, capillary blood gas sampling can be used when venous or arterial access is difficult, for noncritical assessments, in outpatient settings without ABG equipment, based on patient preference for less invasive procedures, or where ABG equipment is unavailable. However, it is important to use an appropriately sized lancet and to puncture the appropriate body part to avoid patient harm.
Attach the cap to one end of the capillary.	Capillary blood gas samples are collected in clear glass tubes. If you do not place a cap on one end of the tube, the blood will leak out while collecting the sample.

Steps	Rationale/Description
Clean the puncture site with an alcohol pad and firmly support the site (either the finger or the heel) with your nondominant hand.	Use the nondominant hand to stabilize the puncture site so that the dominant hand is free to puncture and draw the blood.
Puncture the site and wipe away the first drop of blood.	The first draw of blood can be contaminated with the alcohol that was used to clean the site, which can lead to inaccurate results.
Place the uncapped end of the tube in the center of the drop of blood. Allow the blood to flow freely into the tube without putting excessive pressure on the lanced site.	Applying excessive pressure on the finger or heel can lead to inaccurate results.
Once the capillary tube is filled with blood, run the blood gas analysis. Some units have a blood gas analysis machine on the unit. If it needs to be sent to the lab, it must be sent on ice and as a STAT lab.	If a blood gas sample cannot be run immediately, it should be stored on ice. Leaving a blood gas sample at room air temperature leads to inaccurate results.

Principles of Acid-Base Imbalance

Acid-base imbalances can potentially have a profound impact on patients' health and well-being (Figure 20.5). Understanding acid-base imbalances is vital to quality nursing care because many patients are at risk for acid-base imbalances. If nurses understand the physiology behind the imbalance, they can recognize the cues early and intervene before the patient suffers severe complications. Acid-bases imbalances fall into two general categories: metabolic imbalances and respiratory imbalances. If an imbalance occurs in one system, the other system will compensate in order to bring the blood pH back into normal range.

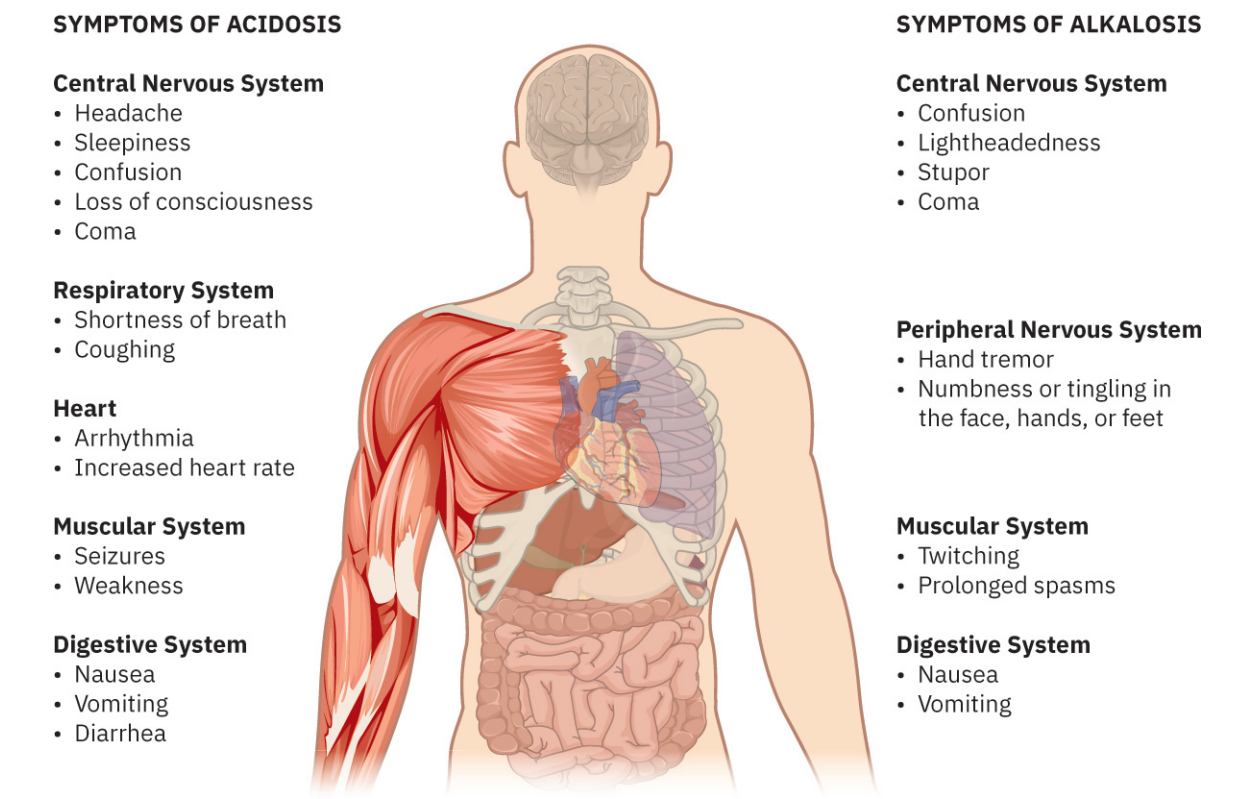

FIGURE 20.5 Symptoms of acidosis and alkalosis affect multiple organ systems. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Principles of acid-base balance in the blood (https://openstax.org/r/77acid-base) is crucial to understanding homeostasis.

Metabolic Acidosis

Acidosis, pH less than 7.35, is any process that increases the concentration of hydrogen ions in a solution. An increase in the hydrogen ion concentration as a result of an abnormally low serum bicarbonate level (HCO_3^-), or a serum bicarbonate level less than 22 mEq/L is known as **metabolic acidosis** (Figure 20.6). Metabolic acidosis is never a benign process and signifies an underlying medical problem that needs to be addressed (Burger & Schaller, 2023).

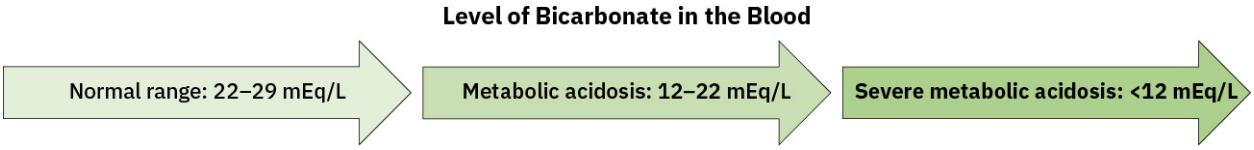

FIGURE 20.6 The level of bicarbonate in the blood determines the severity of metabolic acidosis. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The root cause of metabolic acidosis is divided into four categories: an increase in acid production, a decrease in acid excretion, acid ingestion, and renal or gastrointestinal bicarbonate loss. Another way to separate metabolic acidosis is whether or not an **anion gap** (the concentration of unmeasured serum anions) exists. Having a large number of unmeasured anions indicates that an acid has been added to the system (Burger & Schaller, 2023).

Bicarbonate and chloride are the most proliferative anions, or negatively charged ions, in the human body. To maintain homeostasis, the human body has regulatory mechanisms to keep the number of anions and cations, or positively charged ions, approximately equal. Sodium, the most common extracellular cation, is equal to bicarbonate and chloride plus the sum of the unmeasured anions. If there are a large number of unmeasured anions

in the plasma, the patient has an anion gap metabolic acidosis. The formula for calculating the anion gap is:

$$\text{Anion gap} = \text{Sodium} - (\text{Chloride} + \text{Bicarbonate})$$

A normal anion gap ranges from 4 to 12 mmol/L. Therefore, having a gap greater than 12 mmol/L indicates that the patient has a large number of additional anions in the plasma, indicating an acid has been added to the system. A common cause of an anion gap metabolic acidosis is an elevated lactate level. However, there are many other causes. A useful mnemonic to help a nurse remember the causes of an anion gap is the acronym CAT MUDPILES. Each letter in CAT MUDPILES stands for a specific acid that could be ingested or produced to cause a metabolic acidosis.

- C: cyanide or carbon monoxide poisoning
- A: arsenic
- T: toluene
- M: methanol, metformin
- U: uremia
- D: diabetic ketoacidosis (DKA)
- P: paraldehyde
- I: iron
- L: lactate
- E: ethylene glycol
- S: salicylates (Burger & Schaller, 2023)

Differentiating the type of metabolic acidosis helps determine the underlying problem that needs to be addressed. For example, if a patient presents with anion gap metabolic acidosis, the nurse must consider the possibility that the patient ingested a toxin, poison, or medication. Determining the nature of the anion gap helps guide treatment. Because metabolic acidosis is never a benign clinical state, nurses must understand the causes of metabolic acidosis so that they can make informed decisions about patient care.

The etiology of a nonanion gap metabolic acidosis is bicarbonate loss. Diarrhea and renal tubular acidosis are the two most common causes of nonanion gap metabolic acidosis. Patients with diarrhea lose bicarbonate in their stool. Patients with renal tubular acidosis excrete an excessive amount of bicarbonate in their urine. Once a probable cause of a patient's metabolic acidosis has been identified, appropriate steps can be taken to correct the underlying problem (Burger & Schaller, 2023).

REAL RN STORIES

Missed Diagnosis

Nurse: Liu, BSN
Clinical setting: Medical-surgical unit
Years in practice: 3
Facility location: Inner city of a large metropolitan area in Colorado

We serve a diverse population, but many of our patients are people with lower incomes. Our hospital is the only hospital in the city that accepts Medicaid. One day I received report from the emergency department (ED) for a new patient who I was admitting to the unit for dehydration secondary to acute vomiting and diarrhea. When the ED nurse gave me report, I thought it was odd that the patient was tachypneic. The reported respiratory rate was 40 breaths per minute. I asked why, and the reporting nurse just brushed me off because the patient's breath sounds were clear, and she had oxygen saturations greater than 92 percent on room air.

I admitted the patient to the unit and immediately noted that she was teary-eyed and anxious. I sat down with her for a few minutes so I could see what was going on. During our conversation she confessed that she had attempted suicide the night before by taking an entire bottle of aspirin. She lied about having vomiting and diarrhea because she was embarrassed.

I paged the on-call resident and informed him of the patient's confession. The resident placed the patient on a 1:1

staffing protocol, ordered a psychiatric consult, and also reexamined the patient's laboratory values. On closer review, the resident noted that the patient had a significant anion gap. A STAT arterial blood gas sample was ordered, and the resident ordered a toxicology consult regarding the aspirin ingestion.

I discussed the case with the resident, who reminded me that respiratory system compensates for the metabolic system. Because the patient had taken so many aspirin, she developed anion gap metabolic acidosis. The respiratory system compensated for the metabolic acidosis by increasing the respiratory rate to blow off more carbon dioxide and bring the pH back up. The aspirin ingestion explained the patient's tachypnea without any associated lung pathology. After reviewing the case with the resident and making sure the 1:1 staffing ratio was in place for the patient, I felt more comfortable and was confident the patient would get the care she needed.

Metabolic Alkalosis

Alkalosis— when the pH is greater than 7.45—is any process that causes a net increase in bicarbonate ions in the plasma. A net increase in bicarbonate ions due to loss of hydrogen ions or retention of bicarbonate ions by either the renal or gastrointestinal systems is called **metabolic alkalosis** (Figure 20.7). There are three broad categories that describe how a patient develops metabolic alkalosis: gastrointestinal loss of hydrogen ions, renal loss of hydrogen ions, and retention or addition of bicarbonate (Brinkman & Sharma, 2023).

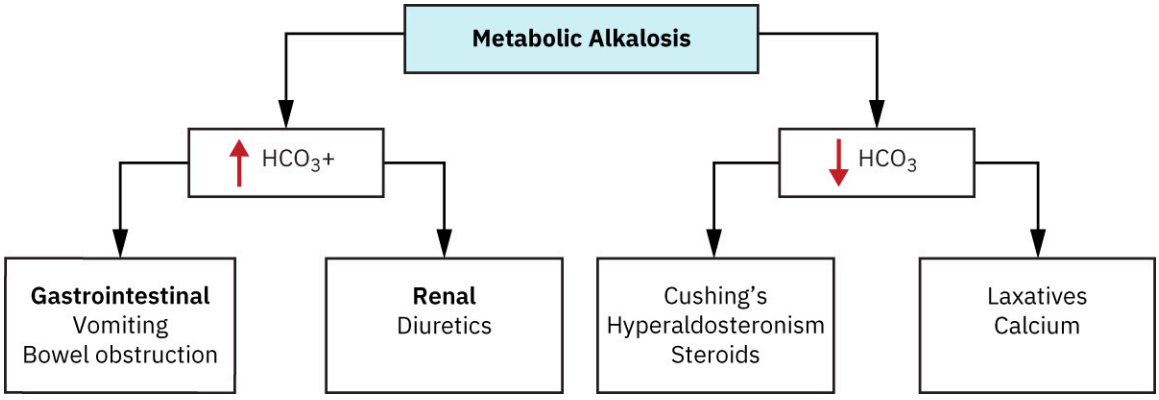

FIGURE 20.7 Metabolic alkalosis is the most common acid-base disorder in hospitalized patients. Identifying and treating the root cause, either hydrogen ion loss or bicarbonate ion gain, is essential because the risk of mortality increases as pH increases (Tinawi, 2021). (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Gastrointestinal loss of hydrogen ions can occur as a result of vomiting or gastric suctioning. The stomach contents contain a high concentration HCL. When a patient loses a large quantity of these gastric secretions, this correlates to a relative increase in bicarbonate in the blood. Having a relative increase in bicarbonate in the blood is the cardinal feature of metabolic alkalosis (Brinkman & Sharma, 2023).

Renal loss of hydrogen is another common cause of a metabolic alkalosis. Aldosterone triggers the reabsorption of sodium into the bloodstream via a 1:1 exchange for excreting hydrogen ions into the urine. Pathologies that increase the production of aldosterone increase renal loss of hydrogen ions. For example, loop and thiazide diuretics can create a secondary hyperaldosteronism that leads to excess urine excretion of hydrogen. Genetic defects, such as Bartter syndrome or Gitelman syndrome, can also cause excessive hydrogen ion loss in the urine (Brinkman & Sharma, 2023).

The retention or addition of bicarbonate in the blood can be caused by a variety of different processes. One of the most common is overuse of antacids, which contain alkaline substances to neutralize acids. Also, because the renal system buffers for the respiratory system, patients with respiratory acidosis will develop compensatory metabolic alkalosis. As the carbon dioxide level rises in the blood, the kidneys compensate by reabsorbing bicarbonate to keep the total pH within normal limits (Brinkman & Sharma, 2023).

Metabolic alkalosis is a common diagnosis among hospitalized patients. If not corrected, it can lead to decreased myocardial contractility, arrhythmias, decreased cerebral blood flow, confusion, and even death. Given the potentially dire consequences if the condition is left uncorrected, nurses must closely monitor their patients and intervene early. Nursing knowledge of complex physiological problems, such as hospitalization-induced metabolic alkalosis, enables nurses to be better advocates for their patients (Brinkman & Sharma, 2023).

Respiratory Acidosis

Having a blood pH less than 7.35 with a concurrent increase in carbon dioxide (CO_2) is called **respiratory acidosis**. Carbon dioxide levels are normally maintained in a tight window of 35 to 45 mm Hg because chemoreceptors in the medulla sense an increase in CO_2 and trigger the patient to breathe more frequently. However, if ventilation is disrupted for some reason, the lungs are not able to exhale excess CO_2 and the patient develops respiratory acidosis (Patel & Sharma, 2023).

Respiratory acidosis is subdivided into three subcategories: acute; chronic; and acute and chronic. In acute respiratory acidosis, there is a sudden rise in carbon dioxide levels. This can be caused by an acute respiratory pathology pneumonia. It can also be caused by problems with the central nervous system (CNS), which can include things such as a stroke or the use of CNS depressants such as opioids. Acute respiratory acidosis can also be the result of diaphragm weakness. Patients with myasthenia gravis and Guillain-Barré syndrome can develop acute muscle weakness that affects their ability to breathe or ventilate (Patel & Sharma, 2023).

Chronic respiratory acidosis occurs in patients with long-standing ventilation issues. As a result of consistently elevated carbon dioxide levels, a patient's chemoreceptors become less responsive to carbon dioxide. Patients with chronic ventilation problems, such as patients with chronic obstructive pulmonary disease (COPD), can develop a new baseline range of CO_2 that is higher than the CO_2 of patients without chronic ventilation issues.

Patients with chronic respiratory acidosis can also have what is called an “acute and chronic” respiratory acidosis. This occurs when a patient has chronic respiratory pathology and develops an acute ventilation problem that makes the acidosis worse. For example, when a patient with COPD develops pneumonia, the result is an acute and chronic respiratory acidosis (Patal & Sharma, 2023).

Respiratory Alkalosis

A systemic acid-base disorder that is caused by a reduction in carbon dioxide, which produces an elevation in pH above 7.45, is called **respiratory alkalosis**. It may be caused by a hyperventilation disorder in which the patient breathes too quickly and exhales an excess amount of CO_2. Respiratory alkalosis may also occur as compensation for an underlying process, such as metabolic acidosis. Finally, respiratory alkalosis may be accidentally induced as part of medical treatment. Patients who are on mechanical ventilation need to have their carbon dioxide levels monitored regularly to ensure that the ventilator settings are appropriate. If the respiratory rate on the ventilator is too high or if the tidal volume is excessive, the patient may develop respiratory alkalosis (Singh Gill, 2019).

REAL RN STORIES

Treating Respiratory Alkalosis

Nurse: Bob, RN
Clinical setting: Outpatient community health
Years in practice: 15
Facility location: Inner city of a large metropolitan area in California

We serve a diverse population, but many of our patients are experiencing homelessness. Our clinic is as an access point for multiple community services including food stamps, Medicaid enrollment, and housing assistance. Frequently in the mornings, there is a long line of people out front hoping to get a walk-in appointment in the clinic. One morning, as I walked by the line of patients, I noticed a middle-aged woman sitting on the ground, crying hysterically. She was taking deep, labored breaths and her hands trembled as she sobbed. Seeing that she was in distress, I stopped to help.

The first thing I did was confirm that she did not have any immediate or life-threatening injuries. Then I sat with her for a minute to help her calm down. I took my brown paper lunch bag out of my backpack and asked her to place it over her nose and mouth. By doing so, she inhaled the carbon dioxide that she was exhaling with every labored breath. At my request, she covered her nose and mouth for six breaths and then removed the bag. Then I encouraged her to practice taking slow, calm breaths with me. We placed the paper bag over her nose and mouth a second time and she left it there for another six breaths.

By rebreathing her own exhaled carbon dioxide, the woman started to feel less shaky and calmed down. I sat with her for a few more minutes to make sure she was feeling better and then walked her up to the front of the line so that she could be evaluated by the triage nurse at our clinic.

Regulation of Balance Systems

Nurses must have a firm understanding of the mechanisms that regulate acid-base homeostasis because many patients have impaired renal, respiratory, and metabolic function that can interfere with the regulation of pH. If the blood pH is not maintained between 7.35 and 7.45, complications can occur. If there are large deviations from this pH range, severe complications are likely. A pH greater than 7.8 or less than 6.8 is often associated with death. To maintain homeostasis, the human body has multiple regulatory systems that bring the pH back into the needed physiological range. The regulatory balance systems that control blood pH are the chemical buffer system, the respiratory regulatory system, and the renal regulatory system (Davies et al., 2019).

LINK TO LEARNING

To prevent deviations in the body's pH, there are several buffer systems that regulate acid-base levels. Review the regulation of acid-base systems (https://openstax.org/r/77regacidbase) with this video.

Chemical Buffer Systems

Excess acids or bases must be neutralized to maintain the blood pH within a normal physiological range and protect cells. One of the primary ways of regulating this balance is through the chemical buffer system. As acids or bases enter the bloodstream, excess amounts are modified or neutralized by the chemical buffer system. Then, either the respiratory regulatory system or the renal regulatory system is activated to complete the process of eliminating the excess acid or base. The chemical buffer system has three pathways: the carbonic acid–sodium bicarbonate system, the phosphate buffer system, and the protein buffer system.

Carbonic Acid–Sodium Bicarbonate System

The carbonic acid–sodium bicarbonate system is the most widely mobilized buffer system in the human body, accounting for more than 50 percent of all chemical buffering (Figure 20.8). This buffering pathway takes place in the extracellular fluid compartment. Carbon dioxide, CO_2, is produced as a result of normal cellular metabolism and enters the bloodstream. In the bloodstream, CO_2 combines with water and forms carbonic acid. The carbonic acid molecule is a weaker acid than CO_2 and does not cause cellular damage. The carbonic acid molecule is transported in the bloodstream to the lungs, where it disassociates back into CO_2 and water. The CO_2 is then exhaled by the lungs. Any remaining excess CO_2 is converted back into carbonic acid and transported via the circulatory system to the kidneys. In the kidneys, the carbonic acid is separated into H^+ ions and bicarbonate. At this point, the kidneys sense which molecule is in excess and excrete that substance while retaining the other. For example, if the patient is acidotic, the kidneys excrete hydrogen ions and reabsorb bicarbonate ions to be reused for further buffering.

$$NaHCO_3 + HCl \longrightarrow H_2CO_3 + NaCl$$

(sodium bicarbonate) + (strong acid) ⟶ (weak acid) + (salt)

$$H_2CO_3 + NaOH \longrightarrow NaHCO_3 + H_2O$$

(weak acid) + (strong base) ⟶ (sodium bicarbonate) + (water)

FIGURE 20.8 The carbonic acid–sodium bicarbonate system is a chemical buffer system that helps regulate the pH of bodily fluids. This system involves a dynamic balance between carbonic acid (H_2CO_3) and bicarbonate ions (HCO_3^-) in response to changes in hydrogen ion (H^+) concentration. The carbonic acid–sodium bicarbonate buffer system is the most common buffer system used in the human body. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Phosphate Buffer System

In contrast to the carbonic acid–sodium bicarbonate buffer system, the phosphate buffer system neutralizes excess acid or base in the intracellular fluid, not the extracellular fluid (Figure 20.9). It is one of two buffering systems that work inside of cells to maintain intracellular acid-base homeostasis. In this system, dihydrogen phosphate acts as a

hydrogen ion donor to neutralize excess base, and hydrogen phosphate acts as an ion acceptor to neutralize excess acid. With this buffering system, the acids and bases still exist inside the cells, but the phosphates hold onto the ions and prevent them from altering the cell's pH.

$$HCl + Na_2HPO_4 \longrightarrow NaH_2PO_4 + NaCl$$

(strong acid) + (weak base) ⟶ (weak acid) + (salt)

$$NaOH + NaH_2PO_4 \longrightarrow Na_2HPO_4 + H_2O$$

(strong base) + (weak acid) ⟶ (weak base) + (water)

FIGURE 20.9 Phosphates are found in the blood in two forms: sodium dihydrogen phosphate ($Na_2H_2PO_4^-$), which is a weak acid, and sodium monohydrogen phosphate ($Na_2HPO_4^{2-}$), which is a weak base. Because phosphates exist as both an acid and a base, they can buffer both types of molecules. This equation shows how the weak base accepts hydrogen ions to buffer acidosis and the weak acid donates hydrogen ions to buffer alkalosis. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Protein Buffer System

The protein buffer system is the most important buffer system in the intracellular fluid. It accounts for 75 percent of buffering that occurs intracellularly. Almost all proteins can act as buffers. The building blocks of proteins are amino acids, which contain both a positively charged amino group and a negatively charged carboxyl group (Figure 20.10). Because amino acids contain both a positively and negatively charged group, they can buffer both acids and bases. The positively charged amino group acts as a hydrogen ion donor that neutralizes excess base, and the negatively charged carboxyl group acts as a hydrogen ion acceptor that neutralizes excess acid.

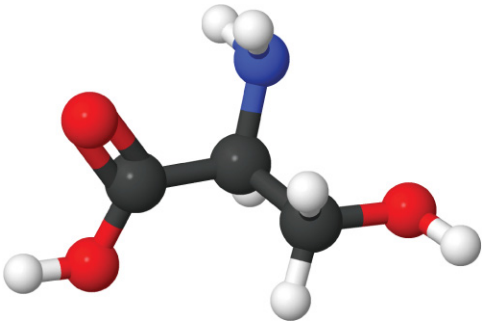

FIGURE 20.10 Amino acids have both a positive and negative charge, which enables them to buffer both acids and bases. In this model, the red end is negatively charged, meaning it accepts hydrogen ions from acids to buffer against acidosis. The white end is positively charged, meaning it donates hydrogen ions to buffer against alkalosis. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Respiratory Regulation System

The respiratory system plays a crucial role in regulating acid-base balance by regulating the exhalation and retention of carbon dioxide, CO_2 (Figure 20.11). Carbon dioxide reacts with water in the blood to form carbonic acid, which is the primary acid in the blood. In the lungs, carbonic acid disassociates back into carbon dioxide and water. Increasing the rate and depth of respirations allows the body to exhale more CO_2, which lowers the net carbonic acid level in the blood. On the other hand, taking shallow breaths or holding your breath retains CO_2, which causes the carbonic acid level in the blood to rise.

The respiratory regulation system acts as a counterbalance to the renal regulation system. If an acid-base imbalance develops as a result of a renal problem, the patient's respiratory system adjusts the depth and rate of respiration to compensate.

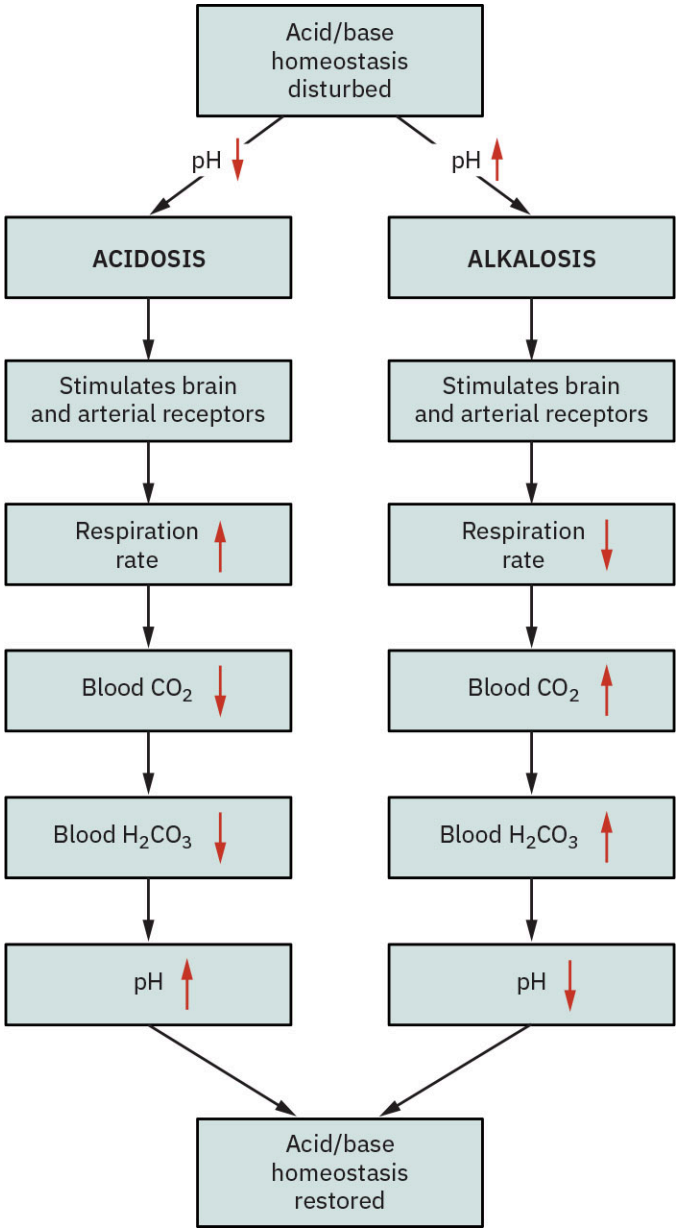

FIGURE 20.11 The respiratory system regulates pH by removing CO_2 from the bloodstream. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Renal Regulation System

The renal system regulates acid-base balance by controlling serum levels of bicarbonate, HCO_3^- (Figure 20.12). Bicarbonate is a base, and alterations in excretion or reabsorption of bicarbonate cause acid-base imbalances. If the kidneys excrete an excess of bicarbonate in the urine, the patient develops metabolic acidosis. On the other hand, if the kidneys retain too much bicarbonate, the patient develops metabolic alkalosis. Common causes of metabolic acidosis include chronic diuretic use, chronic renal insufficiency, and elevated blood ketone levels.

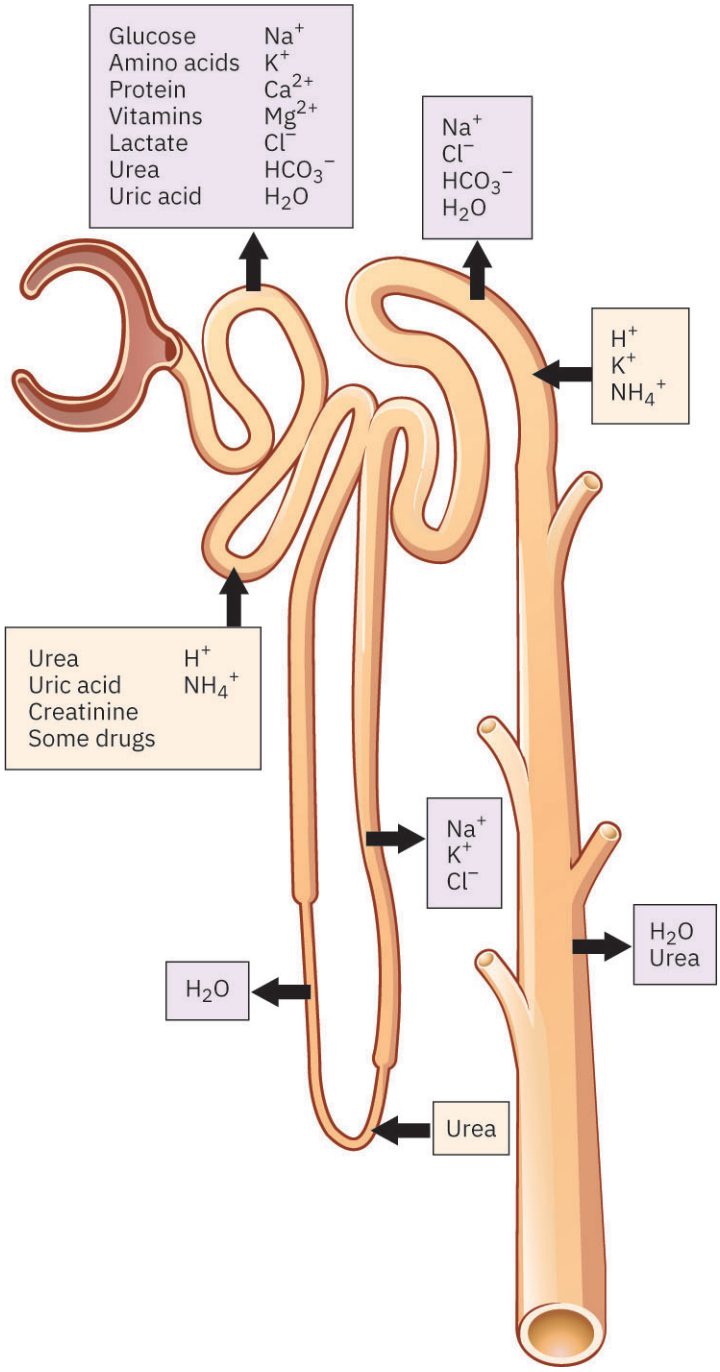

FIGURE 20.12 Through the secretion and reabsorption of bicarbonate, an electrolyte, the renal system regulates the blood pH. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The renal system acts as a counterbalance to the respiratory system. If a patient develops respiratory acidosis, their body senses the increase in acid through the use of chemoreceptors, which stimulates the kidneys to reabsorb more bicarbonate. On the other hand, if a patient develops respiratory alkalosis, that stimulates the renal system to excrete more bicarbonate. Having less bicarbonate in the blood offsets the decrease of carbon dioxide, which is bound with water to form carbonic acid in the blood.

20.3 The Nurse's Role in Patient Care Management

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize cues for fluid, electrolyte, and acid-base balance when providing patient care
- Identify nursing tasks to prevent fluid, electrolyte, and acid-base imbalances

The human body has multiple mechanisms in place to maintain a narrow range of fluid balance, electrolytes, and acid-base levels. If any of these components of homeostasis is out of the normal range, the patient is at risk for organ dysfunction, and if left untreated, even death. It is imperative that nurses recognize subtle changes in fluid imbalance, electrolyte levels , and acid-base homeostasis so they can intervene early and prevent patient complications. To accomplish these goals, nurses are constantly evaluating their patients and updating their plan of care as their clinical condition changes. In contrast to other healthcare disciplines, bedside nurses are in a unique position to pick up on trends early in the patient's clinical course and adjust the plan of care as needed.

Recognizing Cues of Fluid, Electrolyte, and Acid-Base Balances

Nurses use cues to recognize change in clinical status. Subjective or objective data points that are observed by the nurse are known as **cue**s. Patient cues can be an indicator of a clinical improvement or a deterioration. Common cues that nurses integrate in their clinical judgement are changes in vital signs, changes in mental status, and the presence or absence of pain (Burdeu et al., 2020). Cues for fluid, electrolyte, and acid-base balance are specific to the type of imbalance that is occurring. For example, cues for a fluid imbalance include a change in the patients' weight, urine output, and skin turgor, whereas cues for an electrolyte imbalance include mental status changes, changes in muscle tone, and cardiac arrhythmias. Cues for acid-base imbalances can be seen in the two body systems that regulate acid-base levels: the respiratory system and the renal system. Nurses should also consider the possibility of gastrointestinal loss of acid (through vomiting) and base (due to diarrhea) when considering cues of acid-base imbalances.

Nurses complete a **focused assessment**, or the collection of relevant information pertaining to a change in the patient's clinical status, to monitor a condition that could potentially lead to a complication. For example, if a patient has new onset abdominal pain, the nurse completes a focused assessment of the abdomen. This exam includes a description of the pain, where the pain is located, if the pain radiates, if there are unusual abdominal exam findings, and if there are factors that either alleviate or exacerbate the pain. This same model of thinking about a focused assessment can be applied to patients experiencing fluid, electrolyte, or acid-base imbalances (Toney-Butler & Unison-Pace, 2022).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: What To Do If Your Patient Has Dilutional Hyponatremia

Steps	Description/Rationale
Confirm the diagnosis.	Hyponatremia can be caused by excess free water, which causes dilutional hyponatremia, or sodium loss. The treatment is different depending on the cause. Understanding the patient's physiology is necessary to provide safe nursing care.
Perform an hourly neurological exam.	Hyponatremia can cause mental confusion. Closely monitoring for subtle neurological changes can provide cues to if the patient's clinical status is changing.
Monitor input and output closely.	The kidneys, in conjunction with aldosterone, regulate serum sodium levels. Changes in urine output and total fluid balance can have a significant impact on serum sodium levels.

Steps	Description/Rationale
Anticipate an order to restrict fluids.	Patients with dilutional hyponatremia have excess free water in their serum. The first line of treatment is to limit fluid intake. If fluid restriction does not fix the hyponatremia, diuretics to help remove excess water may be prescribed.
Anticipate sending frequent serum sodium levels.	Patients with dilutional hyponatremia can become severely ill if their hyponatremia does not resolve. To monitor the patient's response to treatment, it is normal to check the serum sodium level frequently until the hyponatremia resolves (Workeneh et al., 2023).

The metrics that nurses monitor in response to a change in clinical status depends on the type of imbalance noted. For example, with both a fluid volume deficit and a fluid volume excess, nurses need to pay close attention to intake, output, and daily weights. On the other hand, with an acid-base imbalance, the key assessment to monitor is the patient's blood gas. Table 20.3 summarizes key assessment criteria to consider for different fluid, electrolyte, and acid-base imbalances.

Imbalance	Key Assessment Criteria
Fluid volume imbalances	• Intake/output; net fluid balance • Daily weights • Skin condition (i.e., edema, skin turgor) • Serum electrolytes
Sodium	• Serum sodium level • Intake/output; net fluid balance • Neurological status
Potassium	• Serum potassium level • Intake/output; net fluid balance • Heart rate; cardiac arrhythmias
Calcium	• Serum calcium level • Heart rate; cardiac arrhythmias • Muscle tone
Magnesium	• Serum magnesium level • Muscle tone
Respiratory acidosis or alkalosis	• Arterial blood gas • Respiratory rate; work of breathing; breath sounds
Metabolic acidosis or alkalosis	• Arterial blood gas • Renal function; basic metabolic panel • Intake/output; net fluid balance

TABLE 20.3 Fluid, Electrolyte, and Acid-Base Imbalances and Parameters

An **arterial blood gas** is a blood test that measures the levels of oxygen (measured partial pressure [PaO_2] and calculated saturation [SaO_2]) and carbon dioxide ($PaCO_2$) in the arterial blood, as well as the pH and levels of bicarbonate ions (HCO_3^-) (Table 20.4). It is a crucial diagnostic tool used to assess a patient's acid-base balance and oxygenation status. Nurses play a vital role in obtaining ABG samples, ensuring accurate collection and handling, and interpreting the results in collaboration with healthcare providers.

Parameter	Normal Range
pH	7.35 – 7.45
PaO_2	75 – 100 mm Hg
$PaCO_2$	35 – 45 mm Hg
HCO_3^-	22 – 29 mEq/L
SaO_2	95 – 100%

TABLE 20.4 Arterial Blood Gas Values

Nurses monitor these parameters closely, recognizing deviations from normal ranges that may indicate respiratory acidosis or alkalosis, metabolic acidosis or alkalosis, or hypoxemia, which is defined as low oxygen levels in the blood. Hypoxemia can lead to compensatory mechanisms such as increased respiratory rate or cardiac output, which may affect acid-base balance. ABG results provide important cues to guide nursing interventions, such as adjusting oxygen therapy, ventilatory support, or administering medications to correct acid-base imbalances. See (Table 20.5) for a quick reference for interpreting ABG values.

Parameter	Interpretation
pH	< 7.35: acidosis; > 7.45: alkalosis
PaO_2	Low: hypoxemia; High: hyperoxemia
$PaCO_2$	High: respiratory acidosis; Low: respiratory alkalosis
HCO_3^-	High: metabolic alkalosis; Low: metabolic acidosis
SaO_2	< 95%: hypoxemia

TABLE 20.5 Interpreting Arterial Blood Gas Values

Prioritizing Patient Care

By recognizing cues, nurses are able to identify patients who are at risk for clinical deterioration and prioritize their care. Prioritization of patient care revolves around ensuring patient safety. If a patient is currently stable but demonstrating cues of a worsening clinical status, the nurse must prioritize that patient. Prioritization of patient care includes monitoring the patient more frequently, sending labs to follow a concerning trend, addressing complaints of pain, and addressing any other changes in clinical status (Déry et al., 2019).

REAL RN STORIES

Recognizing Cues of Acid-Base Imbalance

Nurse: Matteo, BSN
Clinical setting: Medical unit
Years in practice: Six months

Facility location: Teaching hospital affiliated with a large medical school in the Midwest

We serve a diverse population; many of our patients are people with lower incomes and speak limited English. Approximately three months after completing new graduate orientation, I admitted an 18-year-old with Down syndrome for treatment of a viral upper respiratory infection (URI). When the patient arrived to the unit from the emergency department (ED), he had mottled extremities, delayed capillary refill, and moderate respiratory distress. His oxygen saturation was 88 percent on 1 L of oxygen via nasal canula. According to the report I received from the ED nurse, the patient would intermittently have periods of respiratory distress that improved with nasal suctioning.

I placed the patient on a bedside cardiac monitor, transitioned him to humidified oxygen, and completed a focused assessment of his respiratory and cardiac systems. The patient was tachycardic; however, his blood pressure was normal. He was mottled in bilateral lower extremities and his capillary refill was greater than three seconds. His respiratory exam was significant for tachypnea, diffused wheezing, nasal flaring, and supraclavicular and intercostal retractions. I immediately paged the on-call resident regarding the patient's exam findings.

The resident came to assess the patient and recommended giving an albuterol nebulizer followed by deep nasal suctioning. After completing the ordered treatments, the patient's exam minimally improved. However, the resident wanted to monitor the patient before trying any additional treatments. I called the charge nurse and asked for assistance in managing this patient's care. The charge nurse came to the bedside and recommended placing an IV, ordering baseline labs, and obtaining a chest x-ray. I called the resident back to express my concerns and suggested the additional diagnostic tests.

The resident ultimately agreed to order more diagnostic tests including a capillary blood gas, a basic metabolic panel, a complete blood count, and a chest x-ray. The capillary blood gas was significant for a pH of 7.28, $PaCO_2$ of 70 mm Hg, and a HCO_3^- of 30 mEq/L. The chest x- ray showed diffuse bronchial thickening. Based on the capillary blood gas and physical exam findings, the decision was made to transfer the patient to the intensive care unit (ICU) for an escalation in respiratory support.

Potential versus Actual Problems

The importance of recognizing cues cannot be understated. Recognizing cues of possible clinical deterioration and intervening early prevents a potential problem from becoming an actual problem. Consider the following example: A patient is dehydrated and presents with no urine output for more than eight hours. Routine laboratory studies show that the patient has mild metabolic acidosis and a serum potassium of 5.2 mEq/L. At the time the patient presents for medical care, they have an actual problem of dehydration and low urine output. However, if the low urine output and elevated potassium level are not addressed, then the patient is at risk of developing hyperkalemia with associated cardiac arrhythmias. In this situation, it is imperative the nurse recognize the cue of possible future deterioration given the fact that the patient has inadequate urine output and a slightly elevated serum potassium level.

Impact on Other Areas of Functioning

Fluid, electrolyte, and acid-base imbalances can impact other areas of functioning. The human body has mechanisms in place to maintain homeostasis; however, those mechanisms only provide a solution in acute clinical situations. They do not prevent problems from developing if the patient has a chronic condition that affects fluid, electrolyte, or acid-base imbalances.

All areas of homeostasis are impacted by chronic conditions. For example, a patient with end-stage renal disease will have electrolyte abnormalities because the kidneys are unable to filter fluid and solutes normally. Patients with chronic fluid volume excess with edema will ultimately develop decreased mobility and impaired skin integrity, whereas patients with fluid volume deficit are at risk for orthostatic hypotension, dizziness, and electrolyte abnormalities resulting in chronic fatigue and mental confusion. Lastly, patients with chronic acid-base imbalances develop alternation in the regulatory system that counterbalances the root cause of their imbalance. For example, a patient with chronic metabolic alkalosis will develop a lower respiratory rate to retain more carbon dioxide and offset the alkalosis.

Preventing Fluid, Electrolyte, and Acid-Base Imbalances

The keys to preventing fluid, electrolyte, and acid-base imbalances are recognizing which patients are at risk for

those imbalances, screening for abnormalities, and intervening early if there are indications of a problem. Young children and older adults are at an increased risk for these imbalances because of their metabolic rates, ratio of fluid-to-body surface area, and increased risk of organ dysfunction related to their age. Also, certain medical conditions such as cancer, cardiovascular disease, and kidney disease place patients at an increased risk for developing an imbalance. Patients with known risk factors should have routine laboratory work done to screen for abnormalities. Intervening early can prevent more serious complications (Shrimanker & Bhattarai, 2023).

Nursing Interventions

Nursing interventions for patients who have a fluid, electrolyte, or acid-base imbalance depend on the abnormality being treated and the root cause of the problem identified. Nursing interventions include education about diet modifications, monitoring the patient's vital signs and weight, reviewing laboratory values, adjusting the patient's respiratory support, and administering medications and intravenous fluids. Specific examples of appropriate nursing interventions for different diagnoses may include the following:

- Electrolyte and fluid volume excess secondary to chronic kidney disease:
  - developing a dietary plan
  - educating the patient about which foods to avoid or minimize
  - recommending a daily fluid intake
  - monitoring the patient's weight
  - reviewing laboratory values
- Respiratory acidosis secondary to an acute illness:
  - sending and reviewing serial ABG samples
  - making adjustments to the patient's respiratory support according to the ABG result
- Electrolyte and fluid volume deficit secondary to diarrhea:
  - sending and reviewing chemistry analysis to evaluate electrolytes and renal function
  - infusing intravenous fluids (IVFs) to correct fluid volume deficit
  - making recommendations to adjust IVFs based on laboratory results
  - monitoring patient's vital signs and weight

Age-Related Considerations

Both older adults and young children are at higher risk for fluid, electrolyte imbalances, and acid-base imbalances. Patients in both age groups require more monitoring to enable nurses and other healthcare professionals to intervene early if an imbalance develops. Young children under the age of two are at an increased risk for imbalances because they have a higher metabolic rate, an increased rate of insensible fluid losses, and an inability to communicate their needs. Young children also have an immature immune system and are more prone to gastrointestinal illnesses that cause fluid loss (Vega & Avva, 2024). On the other hand, older adults are at increased risk for electrolyte and acid-base imbalances secondary to chronic disease, medication use, and decreased muscle mass that can impair breathing.

LIFE-STAGE CONTEXT

Electrolyte and Fluid Balance in Older Adults

Older adults' risk for dehydration is multifactorial. For many it is related to a decreased thirst sensation. Older adults are also more likely to be disabled or experience cognitive impairment, such as dementia or delirium, and forget to drink adequate water (Li et al., 2023). Furthermore, many older adults take medications, such as diuretics, that increase their fluid loss or affect their judgement (Masot et al., 2018).

Patient Education

Patient education is an important factor in preventing fluid, electrolyte, and acid-base imbalances. Many patients who develop an imbalance have risk factors. Identifying those risk factors and providing anticipatory guidance helps prevent complications.

For example, nurses play a crucial role in educating older adults and the parents of young children about the increased risk of fluid and electrolyte imbalances in these age groups. Nurses also play a pivotal role in making sure

that patients who are taking medications that could cause an imbalance know what side effects to look for and when to seek medical attention. Patients with chronic disease such as congestive heart failure, renal disease, or COPD need to understand how their chronic illness affects fluid, electrolyte, and acid-base imbalances.

PATIENT CONVERSATIONS

What If Your Patient Is Reluctant to Go to the Emergency Department for an Evaluation?

Scenario: A telephone triage nurse at an outpatient pediatrician's office takes a phone call from a mother requesting an order for rectal Zofran to help her daughter stop vomiting.

Nurse: Thank you for calling Dr. Smith's after-hours line. My name is Serena, I'm a registered nurse, and this is a recorded line. How can I help you?

Patient: Hi, Serena. My name is Heidi; I'm Eleni Papadopoulos's mom. She has been vomiting nonstop all day. I can't even get her to hold down sips of water. When my son was her age, the doctor gave me a prescription for Zofran and that really helped. Can the doctor call something like that in for me tonight?

Nurse: I'm sorry to hear Eleni isn't feeling well. Before we jump to prescribing a medication, I'd like to get some more information from you. Can you tell me Eleni's date of birth so that I can look up her chart?

Patient: Sure. It's 2/4/2022.

Nurse: Great. I found her chart. It looks like she's been healthy, no major illness or past medical history. How long has she been vomiting? Are there any other symptoms such as a fever or diarrhea?

Patient: She woke up around midnight vomiting and has been vomiting off and on for the past twelve hours. At first, she was only vomiting food, but for the past five or six hours I can't get her to keep anything down. She spiked a temperature up to 103°F (39.4°C). I gave a dose of Motrin three hours ago and her temperature has come down a little. Now she's grabbing her stomach and crying and won't let me give her anything to eat or drink.

Nurse: I see. Abdominal pain, fever, and vomiting could be a lot of different things. Because of her age she's at risk for dehydration and could get worse quickly. Because it is after our office hours, it is best for you to take her to the emergency department so she can be seen by a provider who can figure out what is going on.

Patient: I know it's nothing serious. If I could just get her to stop vomiting, I'm sure she would be fine. Can't you page the on-call provider and ask for a prescription?

Nurse: Your daughter's symptoms concern me. It is best for her to be seen in the emergency department. She could have a serious infection that requires antibiotics. Also, she's at risk for dehydration and may need intravenous fluid.

Patient: This is ridiculous! She's just got a stomach bug. I can't afford an emergency room visit for something as simple as a stomach bug.

Nurse: It may be a stomach bug; however, it could also be something more serious. Children under the age of 2 can get behind on their fluid intake and get sick quickly. What you are describing to me sounds serious. If she's not taking any fluids by mouth, she could easily need IV fluids to get through this illness. I strongly encourage you to take her to the emergency department. Zofran is not a magic pill that will make her feel better. Something has triggered the fever, abdominal pain, and vomiting, and she needs to see a provider to get checked out.

Patient: I see. I certainly don't want her to get any worse. I'll get her ready and take her in.

Nurse: I'm glad to hear that. I'll let the on-call provider know that you're on the way to the emergency department so they can follow up with the emergency room provider. I hope she feels better soon.

Evaluation of Outcomes

Evaluation of patient outcomes is a critical step in providing optimal patient care. To successfully measure **patient outcomes**, the nurse must set measurable goals that can be met within a specific time frame. Once a goal, or outcome, has been established, evaluation of the outcome requires critical thinking by the nurse. The nurse must analyze the reassessment data and determine if the expected outcome was met. If the expected outcome was not

met or was only partially met, the nurse needs to modify the nursing intervention in order to meet the patient's clinical goals. Having measurable outcomes and analyzing those outcomes improves patient care and ensures the patient's clinical goals are being met (Rørtveit et al., 2020).

Examples of measurable goals for patients at risk for fluid, electrolyte, or acid-base imbalances include the following:

- Patient will have a net even fluid balance within the next twelve hours.
- Patient's serum sodium level will increase by 1 mEq/L every eight hours until within normal limits.
- Patient's $PaCO_2$ will increase by 5 mm Hg within the next two hours.
- Patient will decrease sodium intake by 50 percent within the next two weeks.

Summary

20.1 Fluid and Electrolyte Balances

The human body regulates fluid and electrolyte balance by adjusting to internal and external stimuli to maintain homeostasis. When homeostasis is not maintained, the patient is at risk for organ system dysfunction and even death. One of the primary mechanisms by which homeostasis is maintained is through regulation of body fluid within the different fluid compartments. The two fluid compartments in the human body are the extracellular and intracellular fluid compartments. Approximately two-thirds of the total body fluid is found in the intracellular space and one-third is in the extracellular space. For cellular processes to occur normally, the balance of fluid in these two compartments must be maintained and the patient needs to have a net even, or euvolemic, total fluid balance.

Body fluid composition is maintained in a normal physiological range by regulatory mechanisms that control water and electrolyte concentrations in both the intracellular and extracellular spaces. The intracellular and extracellular spaces have different electrolyte concentration levels and there is a narrow window of normal electrolyte ranges. Slight abnormalities in electrolyte levels can have serious consequence; for this reason, it is important for nurses to recognize the signs and symptoms of an electrolyte imbalance and identify appropriate treatments for imbalances. The most common electrolytes in the human body are sodium, potassium, calcium, magnesium, chloride, bicarbonate, and phosphate.

Keeping electrolytes within a narrow range is necessary for energy production, muscle contractions, stimulation of nerve impulses, and maintenance of a normal fluid balance. Nurses need to recognize how specific changes in electrolyte levels can affect the patient's overall health. For example, signs of hypernatremia include mental confusion, irritability, and seizures. Patients with hyponatremia may present with confusion, nausea, and a headache. Normal potassium levels are needed for cardiac and muscle cell function. Signs of hyperkalemia included peaked T waves and cardiac dysrhythmias. Patients with low potassium levels may present with muscle weakness, lethargy, a thready pulse, flattened or inverted T waves, U waves, and prolonged ST segments. Normal calcium and magnesium levels are needed for nerve transmission and muscle contraction. Signs of hypercalcemia include nausea, vomiting, and muscle weakness. Signs of hypocalcemia include paresthesia and tetany. Both Chvostek's sign and Trousseau's sign are classic physical exam findings in patients with hypocalcemia. Patients with abnormal magnesium levels may present with both cardiac and neuromuscular findings. Common symptoms of hypermagnesemia include bradycardia, muscle weakness, and tremors. Patients with hypomagnesemia may present with vomiting, weakness, and leg cramps. In severe cases, patients may develop dysrhythmias.

Fluid and electrolyte concentrations are maintained in normal ranges through different regulatory mechanisms, passive transport, active transport, and capillary filtration. Passive transport is the movement of water and electrolytes using the principle of concentration gradients. Passive transport is subdivided into two subcategories: osmosis and diffusion. Osmosis is the movement of water of liquid down a concentration gradient whereas diffusion is the movement of solutes, such as electrolytes, down a concentration gradient. Active transport requires energy expenditure and move solutes against their concentration gradients. A prime example of active transport is the sodium–potassium pump, which uses energy to pump sodium to the extracellular space and potassium into the intracellular space. Sodium is the most common extracellular electrolyte and potassium is the most common intracellular electrolyte. Without active transport, the concentration of sodium and potassium would equalize across cell membranes, which would impede the conduction of action potentials and alter fluid balance concentration in both the extracellular and intracellular compartments. Capillary filtration is a regulatory mechanism that delivers oxygen and other nutrients from the arterial blood flow through the capillaries to target tissue. It is counterbalanced by capillary reabsorption, which is the removal of waster products from tissue to the capillaries into the venous blood flow.

20.2 Acid-Base Balances

Maintaining the human blood in a normal range of acid-base balance is essential for health. Many cellular processes do not function normally if the blood's acid-base levels are off. The normal pH for the human blood is between 7.35 and 7.45. If the pH is less than 7.35, the patient has an acidosis, and if the pH is greater than 7.45, the patient has an alkalosis. There are multiple processes inside the human body that help maintain the pH within this narrow window.

Understanding acid-base imbalances is a key concept in nursing because lack of acid-base homeostasis can have a profound impact on patients' health. Acid-base imbalances are broken down into two general categories: metabolic imbalances and respiratory imbalances. Within these two broad categories, acid-base imbalances are further described as either causing an acidosis or an alkalosis, making a total of four subtypes: metabolic acidosis, metabolic alkalosis, respiratory acidosis, and respiratory alkalosis.

The chemical buffer system is a key regulatory mechanism that maintains acid-base levels within a normal range in the intracellular fluid compartment and in the extracellular fluid compartment. The carbonic acid–sodium bicarbonate buffer system is the most widely used buffer system in the human body, accounting for 50 percent of all chemical buffering. However, this buffer system only maintains acid-base balance in the extra cellular fluid compartment.

In the intracellular fluid compartment, there are two different buffering systems: the phosphate buffering system and the protein buffering system. The protein buffering system is more common than the phosphate buffering system. Almost all proteins can act as a chemical buffer because amino acids, which are the building blocks of protein, have both a positive and negative end. By having both electrical charges on one molecule, proteins can neutralize both acids and bases. The phosphate buffering system uses two different molecules: dihydrogen phosphate and hydrogen phosphate. Dihydrogen phosphate neutralizes excess base whereas hydrogen phosphate neutralizes excess acid.

In addition to chemical buffers, there are two systems in the human body that plan an integral role in regulating acid-base homeostasis: the respiratory system, and the renal system. The respiratory system helps maintain acid-base balance by either exhaling or retaining carbon dioxide. Carbonic acid reacts with water to form carbonic acid, which is the most common acid in the bloodstream. The renal system regulates acid-base balance by either reabsorbing or excreting bicarbonate. Bicarbonate is a base. The renal system compensates for the respiratory system if there is an acid-base imbalance that is caused by a respiratory problem. Likewise, the respiratory system compensates for the renal system if there is an alteration in serum bicarbonate levels.

20.3 The Nurse's Role in Patient Care Management

Recognizing cues about fluid, electrolyte, and acid-base imbalances is a cornerstone of providing safe nursing care. By recognizing cues, nurses can intervene early before serious complications occur. The cues that alert nurses to an impending imbalance depend on the alteration that the patient is facing. Nursing interventions to prevent fluid, electrolyte, and acid-base imbalances should target the specific imbalance the patient has or is at risk of developing. Nurses are also responsible for patient education and evaluating patient outcomes.

Key Terms

acid a molecule that can donate a hydrogen ion (H^+) in chemical reactions
acidosis having a blood pH less than 7.35
action potential the voltage across a cell membrane that is determined by the ratio of ions in the intracellular and extracellular fluid
active transport the movement of solutes through a transmembrane protein using energy expenditure
alkalosis having a blood pH greater than 7.45
anion a negatively charged electrolyte
anion gap the concentration of unmeasured serum anions; having a large number of unmeasured anions indicates an acid has been added to the solution
arterial blood gas a blood test that measures the levels of oxygen, carbon dioxide, pH, and bicarbonate ions (HCO_3^-) in the arterial blood
base a molecule that can donate a hydroxide ion (OH^-) in chemical reactions
blood plasma (also, intravascular fluid) the liquid component of blood
capillary filtration the process of delivering oxygen and other nutrients and removing cellular waste through the capillary system
cation a positively charged ion
Chvostek's sign an involuntary twitching of the facial muscle when the facial nerve is tapped
concentration gradient the process of substances moving from an area of high concentration to an area of low concentration

cue a subjective or objective data point that is observed by the nurse
diffusion a transport process that involves molecular movement involving a concentration gradient
edema swelling caused by excessive buildup of fluid in tissue spaces or a body cavity
enzyme a protein that catalyzes chemical reactions
euvolemic at net even fluid balance
extracellular fluid the body fluid found outside of cells; subdivided into three categories: interstitial fluid, blood plasma, and transcellular fluid
fluid volume deficit (also, hypovolemia or dehydration) a medical condition in which fluid loss exceeds fluid intake
fluid volume overload (also, hypervolemia) a medical condition in which an excessive amount of fluid is retained in the intravascular fluid compartment
focused assessment the collection of relevant information pertaining to a change in the patient's clinical status
homeostasis the process by which the human body maintains balance by adjusting to internal and external stimuli
hypercalcemia an elevated serum calcium level (> 10.2 mEq/L)
hyperchloremia an elevated serum chloride level (> 106 mEq/L)
hyperkalemia an elevated serum potassium level (> 5.1 mEq/L)
hypermagnesemia a high serum magnesium level (> 2.4 mEq/L)
hypernatremia an elevated serum sodium level (> 145 mEq/L)
hyperphosphatemia an elevated serum phosphorus level (> 4.5 mg/dL)
hypervolemia an excess of body fluid
hypocalcemia a low serum calcium level (< 8.6 mg/dL)
hypochloremia a low serum chloride level (< 96 mEq/L)
hypokalemia a low serum potassium level (< 3.5 mEq/L)
hypomagnesemia a low serum magnesium level (< 1.5 mEq/L)
hyponatremia a low serum sodium level (< 135 mEq/L)
hypophosphatemia a low serum phosphorus level (< 3.4 mg/dL)
hypovolemia a deficit of body fluid
interstitial fluid the fluid that surrounds cells
intracellular fluid the body fluids found inside the body's cells
metabolic acidosis an increase in the hydrogen ion concentration as a result of an abnormally low serum bicarbonate level (HCO_3^-)
metabolic alkalosis a net increase in bicarbonate ions due to loss of hydrogen ions or retention of bicarbonate ions by either the renal or gastrointestinal systems
osmosis the passage of a solvent (liquid) through a semipermeable membrane from an area of lower solute concentration to an area of higher solute concentration
paresthesia a sensation of numbness and tingling
passive transport the movement of liquid and solutes across cell membranes using principles of concentration gradients
patient outcome a measurable goal that can be met within a specific time frame
pH the concentration of hydrogen ions in a given solution
respiratory acidosis having a blood pH less than 7.35 with a concurrent increase in carbon dioxide (CO_2)
respiratory alkalosis a systemic acid-base disorder that is caused by a reduction in carbon dioxide and a pH greater than 7.45
solute any substance that is dissolved in a solution
tetany involuntary muscle contractions
transcellular fluid the fluid within epithelial-lined spaces
Trousseau's sign an involuntary spasm of the hand when a blood pressure cuff is inflated above the diastolic blood pressure for three minutes; a classic sign of hypocalcemia

Assessments

Review Questions

1. What statement describes distribution of fluid balance in the human body?

a. Approximately two-thirds of body fluid is found in the extracellular space.
b. Total body fluid is split evenly between the intracellular space and the extracellular space.
c. Transcellular fluid makes up about 25 percent of total body fluid.
d. The intracellular space has the highest percentage of total body fluid.

2. While assessing a new patient admission, the nurse notes that the patient has ascites and crackles in the lung fields. What fluid imbalance should the nurse suspect?
a. hypervolemia
b. fluid volume deficit
c. increased transcellular fluid
d. euvolemia

3. What physical exam finding would the nurse expect in a patient experiencing hyponatremia?
a. confusion
b. thirst
c. muscle twitching
d. tachycardia

4. What suggestion from a nursing student would be appropriate for a patient experiencing hypercalcemia?
a. Limit fluid intake to concentrate the urine and encourage urinary excretion of calcium.
b. Stop eating dried fruit and nuts to prevent excess calcium intake.
c. Increase weight-bearing exercises to stop leaching of calcium from the bones.
d. Decrease foods high in phosphorus to prevent phosphorus from binding to calcium.

5. What statement correctly describes the process of active transport?
a. Active transport is dependent on solutes moving down a concentration gradient.
b. Through active transport, the concentration of sodium and potassium remains equal across cell membranes.
c. Oxygen and other nutrients are delivered via the capillary bed using active transport.
d. Active transport uses energy expenditure to move solutes from an area of lower concentration to higher concentration.

6. What statement describes why it is important to maintain the blood pH within a narrow range?
a. Alterations in the blood pH leads to increased vascular permeability and capillary leak.
b. Many cellular processes do not function normally if there is an acid-base imbalance.
c. Having an acid-base imbalance speeds up the body's metabolism, requiring patients to consume more energy.
d. Failure to maintain acid-base homeostasis results in accumulation of intracellular fluid.

7. What comment by a nurse explains why patients with acidosis are at risk for developing hyperkalemia?
a. Intracellular potassium shifts into the extracellular space to counterbalance the net influx of positive hydrogen ions.
b. Prolonged acidosis causes cells to lyse, releasing intracellular potassium into the extracellular fluid compartment.
c. Potassium-containing acids interact with bases, releasing potassium.
d. Acidosis shifts potassium from the muscles into the bloodstream to bind to bicarbonate.

8. What is one cause of metabolic acidosis?
a. gastrointestinal loss of bicarbonate
b. carbon dioxide retention secondary to hypoventilation
c. increased secretion of hydrogen ions into the urine
d. loss of HCL from the gastrointestinal tract

9. What happens to the patient's blood acid level if the patient takes deeper, faster breaths?
    a. The patient develops respiratory acidosis.
    b. The patient's blood acid level will not change.
    c. Respiratory alkalosis will develop.
    d. The patient's blood pH will increase.

10. What is a cue that a patient has developed hyperkalemia?
    a. mental confusion
    b. increase thirst
    c. cardiac arrhythmias
    d. paresthesia

11. The nurse anticipates what change in urine output in a patient with a fluid volume deficit?
    a. decreased urine output
    b. no change in urine output
    c. presence of blood in urine
    d. increased urine output

12. What nursing intervention would the nurse use to prevent electrolyte abnormalities in a patient with chronic kidney disease?
    a. dietary education
    b. education on electrolyte supplements
    c. administration of intravenous fluid
    d. daily weights

Check Your Understanding Questions

1. Explain the difference between osmosis and diffusion.
2. Explain what happens to the blood pH if the kidneys reabsorb an excess amount of bicarbonate.
3. What is the formula to calculate a patient's anion gap, and what does an anion gap greater than 12 indicate?

Reflection Questions

1. Explain why it is important for nurses to understand acid-base physiology.
2. Describe appropriate patient education about how vomiting causes an acid-base imbalance.
3. Why is it imperative for nurses to recognize cues when assessing patients' fluid, electrolyte, and acid-base levels?

What Should the Nurse Do?

1. What should the nurse do if they triage a patient with a seven-day history of diarrhea who presents with dry mucous membranes and mental confusion?
2. What should the nurse do if a patient is ordered an IV potassium replacement, and their urine output has declined over the last four hours?
3. Peggy is a 74-year-old patient with chronic renal disease who presents to the emergency department with fluid overload, a headache, and peaked T waves on the cardiac bedside monitor. A basic metabolic panel is drawn that shows the following: a sodium level of 128 mEq/L, a potassium level of 6 mEq/L, a BUN of 40 mg/dL, a creatinine level of 2 mg/dL, a chloride level of 85 mEq/L, and a calcium level of 8 mg/dL. Which electrolyte abnormality should the nurse associate with the patient's peaked T waves? Why would this electrolyte abnormality cause this finding?
4. A patient who is sedated and on mechanical ventilation has a routine arterial blood gas (ABG) drawn that shows the following:

- pH: 7.5
- $PaCO_2$: 28 mm Hg
- HCO_3^-: 23 mEq/L

What acid-base imbalance is the patient experiencing? What should the nurse do to correct the acid-base imbalance?

Competency-Based Assessments

1. Use the internet to research dietary practices to improve electrolyte abnormalities in patients with renal disease. Describe common dietary guidelines for patients with chronic kidney disease.

Marika, a 45-year-old patient, presents to the emergency department with complaints of persistent vomiting, diarrhea, and abdominal pain for the past 24 hours. She reports feeling weak and lightheaded.

Laboratory Results:

- pH: 7.28
- $PaCO_2$: 32 mm Hg
- HCO_3^-: 18 mEq/L
- sodium (Na^+): 140 mEq/L
- potassium (K^+): 3.2 mEq/L
- chloride (Cl^-): 96 mEq/L

2. Identify whether each lab is normal or abnormal.
3. Based on the lab results, does Marika's pH suggest acidosis or alkalosis?
4. According to Marika's labs, which acid-base balance is she experiencing?
5. Many patients with chronic obstructive pulmonary disease (COPD) have chronic respiratory acidosis. Spend fifteen minutes reviewing COPD signs and symptoms. What trends in acid-base imbalance would nursing expect in a patient with COPD who presents with a productive cough and fever?
6. A patient with chronic kidney disease presents to the emergency department with a decrease in urine output from baseline and evidence of fluid overload. An electrolyte panel is sent that shows the following: Na^+ of 130 mEq/L, K^+ of 5.4 mEq/L, Ca^+ of 10.2 mg/dL, and a phosphate level of 4.3 mmol/L. Based on the laboratory values, what is the highest priority for this patient?

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CHAPTER 21
Nutrition

FIGURE 21.1 Proper nutrition, which includes a balanced diet, is linked to improved health and bodily functioning. (credit: "Fresh cut fruits and vegetables.jpg" by Peggy Greb, U.S. Department of Agriculture, Public Domain)

CHAPTER OUTLINE

21.1 Nutritional Concepts
21.2 Factors Affecting Nutrition
21.3 Specialized Diets
21.4 Nutritional Assessment

INTRODUCTION Good nutrition is essential to healthy living and disease prevention. Nutritious meals provide nutrients to power all the cells of the body and enable biochemical processes that humans need to engage in an active, satisfying life. While nutritional needs across a person's life span vary, the need for quality, nutrient-rich food never changes. Regardless of their cultural, religious, or economic background, everyone benefits from healthy lifestyle choices and dietary patterns.

Unfortunately, unhealthy dietary patterns not only risk immediate health needs but are also associated with the development of chronic disease. In the United States, 60 percent of the population has been diagnosed with at least one chronic medical condition due to unhealthy dietary practices (USDA, 2020). Whether it is diabetes, heart disease, obesity, or eating disorders, no one is immune from the consequences of poor nutrition. Nurses are on the forefront of health promotion; thus, it is essential for nurses to have a clear understanding of the relationship between food and health. Nurses must teach the importance of good nutrition and understand how specialized diets are used to promote optimal health. Most importantly, nurses must be competent in the skill of nutrition assessment and evaluation across a person's life span.

21.1 Nutritional Concepts

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain how nutrition supports energy production
- Recognize nutrients used for energy in the body
- Recall nutrients used for regulation in the body
- Describe optimal nutritional status for proper bodily functioning

The science of nutrition has impacted clinical care in significant ways. As scientists learn more about the roles and uses of nutrients in health and medicine, new and improved nutritional guidelines and recommendations are developed. The **dietary reference intake (DRI)** are scientifically developed reference values that set baseline standards and guide recommendations for daily nutritional intake. The U.S. Department of Agriculture (USDA) uses **recommended dietary allowances (RDAs)**, which provide general guidelines for consuming the nutrients that make up a healthy diet each day. RDAs help guide mealtime planning and food choices and aid in the development of food labels. They are based on DRIs to guide nutrition policy in the United States. **reference daily intake (RDI)** is the average daily intake of a population. It is important for nurses to develop a sound understanding of nutrition science and clinical judgment skills regarding the implementation of healthy dietary practices. This section provides an overview of nutrient metabolism and regulation.

Energy Production

Human life cannot exist without energy. Energy fuels all the physiological demands of the human body. It is required for cellular growth, development, and regulation. It powers musculoskeletal movement, cognitive function, and neuromuscular reflexes. All living cells in the human body depend on energy derived from adenosine triphosphate (ATP). ATP is a molecule that releases energy when converted to adenosine diphosphate (ADP). This stepwise process is known as **cellular respiration**. Energy-rich nutrients (carbohydrates, fats, and proteins) are chemically broken down to provide ATP. ATP is then oxidized and converted to ADP, carbon dioxide, and water. Energy release in the form of ADP fuels all cellular functions within the body. To meet the body's metabolic demands, carbohydrates, proteins, and fats must be consumed and either digested or stored to meet the ongoing energy demands of the body.

Metabolic Requirements

The process by which substances are chemically broken down to meet the body's nutrient and energy needs is **metabolism**. The energy needs of the body require the consumption and metabolism of carbohydrates, proteins, and fats in significant quantities. These three energy-rich nutrients provide a consistent amount of energy per gram of nutrient. The **calorie** is a unit of measure for energy. Both carbohydrates and proteins provide four calories of energy per gram of nutrient, while fats provide nine calories per gram. The rate at which calories burn is called the basal metabolic rate (BMR). A high metabolic rate burns calories faster than a slow metabolic rate. Many factors influence metabolic rates, including age, sex, activity level, genetics, and overall fitness. Underlying medical conditions also significantly affect both metabolic rates and needs. Nutritional wellness occurs when cells burn calories efficiently and excess energy is stored effectively, thus achieving metabolic homeostasis.

The goal of metabolic homeostasis is to balance caloric intake with caloric need. Metabolic imbalance negatively impacts overall wellness and can occur when either too many or too few calories are consumed to meet the body's immediate needs. When calories consumed exceed caloric need, excess energy is stored as fat, which can lead to weight gain and the development of obesity, metabolic syndrome, and other chronic medical conditions. Caloric deficits can be just as detrimental. When caloric need outweighs caloric intake, a caloric deficit occurs, and the body turns to energy stores to meet energy needs. Carbohydrates, stored as glycogen in the liver, are metabolized first, followed by energy stored in fat cells. If a caloric deficit is prolonged and starvation ensues, the body will metabolize proteins, which can lead to life-threatening medical conditions and death. Metabolic homeostasis is essential to healthy living.

Body Weight Standards

Across a person's life span, body weight is greatly affected by caloric imbalances. Overconsumption and underconsumption of calories can result in body weight alterations that negatively impact overall health. Thus, it is

important for individuals to achieve and maintain an ideal body weight. The measure of **ideal body weight (IBW)** correlates with positive health benefits. An individual's IBW is influenced by individual characteristics such as height, weight, body frame, age, and sex. General guidelines have been developed using these characteristics to identify IBW standards. IBW can be a helpful tool when analyzing nutritional health based on generalized standards.

The measure of **body mass index (BMI)** is a commonly used tool that analyzes height and weight to provide a measurement relative to generalized standards. The Centers for Disease Control and Prevention (CDC) classifies BMI into the following categories: underweight, healthy weight, overweight, and obese (Table 21.1). A calculated BMI is based on an individual's height, weight, age, and sex and can be a helpful tool in determining an individual's relative fitness and overall wellness. Since body fat distribution can naturally differ by ethnicity, and other factors (such as exercise) can impact BMI, it should not be used as the only determination of nutritional and related health. There are many BMI calculators available on the web.

BMI	Weight Status
Below 18.5	Underweight
18.5–24.9	Healthy weight
25.0–29.9	Overweight
30.0 and above	Obese

TABLE 21.1 BMI Interpretation for Weight Status (Centers for Disease Control and Prevention, 2022.)

LINK TO LEARNING

BMI is a tool commonly used to provide a measurement relative to the IBW standard. The CDC provides a BMI calculator (https://openstax.org/r/77BMIcalc) to make calculating BMI easy.

Waist circumference is another commonly used measure. Waist circumference is a relative indicator of excess fat storage deposited in the midsection; it is often used as a relative measure to gauge overall caloric balance. Growth charts are used to analyze body height and weight standards across the continuum of growth and development in children through adulthood. The CDC and the World Health Organization (WHO) have developed growth charts for use in clinical settings to track physical growth trends.

LINK TO LEARNING

The CDC has developed growth charts (https://openstax.org/r/77growthcharts) to track physical growth trends in infants and children. These charts are used to promote pediatric health.

Growth charts for infants include measurements of length, weight, and head circumference; charts for children and adolescents include measures of weight and height. Growth charts trend measurements according to percentiles, which compare a measure to an average. Thus, for a child in the fiftieth percentile for weight, 50 percent of children will be above and 50 percent of children will be below that child's measure. Growth and BMI charts are useful tools for studying trends involving growth, development, and general nutrition.

Caloric Requirements

Energy is measured in calories. The energy-rich nutrients (carbohydrates, fats, and proteins) provide a substantial number of calories per unit of weight: Carbohydrates provide 4 cal/g, proteins provide 4 cal/g, and fats provide 9 cal/g. The USDA provides guidance on daily dietary recommendations including energy requirements. According to the USDA, human energy requirements range between 1,000 and 3,200 calories per day depending on the

individual. Individual estimates of energy needs vary based on a variety of characteristics including age, sex, height, weight, health status, and level of physical activity.

LIFE-STAGE CONTEXT

Caloric Needs of Older Adults

People age 65 years and older are considered older adults. Older adults are more likely to experience chronic illness and disease. They have lower caloric needs than younger people, though they still need a diet full of nutrient-dense foods because their nutrient needs increase. The caloric needs of older adults decrease due to decreases in activity, metabolic rates, and muscle mass. Chronic disease and medication can contribute to decreased nutrient absorption.

Protein and vitamin B12 are commonly underconsumed in older adults. Protein is necessary to prevent loss of muscle mass. Vitamin B12 deficiency can be a problem for older adults because absorption of vitamin B12 decreases with age and with certain medications. Adequate hydration is also a concern for older adults because feelings of thirst decrease with age, which can lead to poor fluid intake. Additionally, older adults may be concerned with bladder dysfunction so they may consciously choose to limit fluid intake. Loneliness, diminished ability to chew and swallow, and poverty can also decrease dietary intake in older adults. Organizations such as Meals on Wheels, local senior centers, and other community programs can provide socialization and well-balanced meals to older adults.

Nutrients for Energy

Carbohydrates, proteins, and fats are energy-rich nutrients consumed on a daily basis to meet the body's caloric needs. Each of these three nutrients is considered a **macronutrient** because large quantities of each are consumed daily to meet the body's energy needs. Each of these energy-rich nutrients is metabolized at the cellular level to release energy used to fuel cellular functions. Carbohydrates break down into sugars for quick release of energy to meet immediate caloric needs. Excess sugars are converted to glycogen and stored in the liver; they can be converted back to glucose for release in the bloodstream as glucose when needed. When blood glucose levels drop, fat cells, also known as lipids, break down to meet immediate caloric needs. Fat cells are complex molecules that provide a slow but very efficient release of energy. Proteins are larger molecules made up of amino acids that also provide a slow release of energy. When carbohydrate and fat energy stores are depleted, proteins are metabolized to provide needed energy. These three energy-rich macronutrients are essential to life and work in concert to meet the body's need for fuel.

Carbohydrates

A macronutrient used to fuel the immediate energy needs of the body is a **carbohydrate**. Carbohydrates are classified as simple (monosaccharides and disaccharides) or complex (oligosaccharides and polysaccharides). Simple carbohydrates are also known as sugars. Glucose, a monosaccharide, is the body's primary energy source; it is used to meet immediate energy needs. When glucose is transported into a cell, it undergoes cellular metabolism, which releases ATP and energy. Larger, complex carbohydrates are broken down by enzymes into monosaccharides to be metabolized for energy. Every gram of carbohydrate provides 4 calories of energy. Carbohydrates should make up 45 to 65 percent of a healthy diet.

Simple and complex carbohydrates differ in significant ways, though all are made up of carbon, hydrogen, and oxygen. Sugars typically taste sweet and are found in foods like honey and fruits. Complex carbohydrates are longer sugar chains that are digested in the intestines and broken down into monosaccharides that can then be used by the cells. They release energy more slowly than simple sugars. Starches, fiber, and glycogen are complex carbohydrates. Starches are polysaccharides that are digested by enzymes in the intestinal tract. Rice and potatoes are examples of starches. Dietary fiber is broken down in the large intestine by bacteria rather than metabolized by enzymes. Soluble fiber is found in fruits, vegetables, whole grains, and legumes; it helps control blood sugar by reducing absorption of postprandial blood sugar in the gut. Insoluble fiber, such as cellulose, is a bulking agent for stool.

Proteins

A macronutrient made up of amino acids is a **protein**; they are much larger molecules than carbohydrates. There are

twenty different amino acids used by the human body. Nine of these amino acids must be consumed within the diet. These are referred to as essential amino acids. The other amino acids can be synthesized within the body. All proteins are made of strings of amino acids called polypeptides. During digestion, proteins are broken down into smaller units that can then be used to make new proteins. Proteins are essential to human life. They are the main building blocks for muscle, skin, and connective tissue and are involved in the growth, maintenance, and repair of body tissues. Enzymes, hormones, and hemoglobin are proteins. While proteins are not a primary source of energy, they can be broken down for glucose metabolism if cells are starved for energy. Proteins yield 4 calories of energy for every gram of nutrient.

Dietary proteins should make up 10 to 15 percent of an individual's daily caloric intake. There are situations where protein needs are higher, such as in growing children or when a person is pregnant, lactating, or experiencing a critical illness. However, excessive dietary protein can be harmful to individuals with underlying kidney impairment. Thus, it is important to maintain a protein intake that is healthy and also balanced for individual nutritional needs. Meat, poultry, eggs, and seafood are all good sources of animal protein. Unfortunately, some of these protein sources are associated with high levels of saturated fat, which can negatively impact health and should be limited in a healthy diet. Protein from plants, such as soy products, nuts, seeds, and legumes, can supply adequate amounts of protein as well, though these sources are not metabolized as efficiently as animal protein. The USDA recommends a balanced intake of animal and plant protein. Table 21.2 compares the protein content of animal- and plant-based foods, information that is useful for developing a balanced diet while reducing saturated fat content.

Type	Source	Measure	Protein Content
Animal based	Whey powder	3 scoops	50 g
	Beef	3 oz	29 g
	Turkey	3 oz	26 g
	Lamb	3 oz	25 g
	Pork	3 oz	25 g
	Salmon	3 oz	23 g
	Chicken	3 oz	20 g
	Cod	3 oz	19 g
	Milk	8 oz	9 g
	Yogurt	4 oz	9 g
	Egg	1 whole	6 g
Plant based	Black beans	1 cup	42 g
	Peanuts	1 cup	36 g
	Pumpkin seeds	1 cup	35 g
	Almonds	1 cup	29 g

TABLE 21.2 Protein Content (Source: U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, 2024.)

Type	Source	Measure	Protein Content
	Tofu	0.5 cup	22 g
	Edamame	1 cup	13 g
	Kidney beans	1 cup	8 g
	Peas	1 cup	8 g
	Broccoli	1 cup	6 g
	Spinach	1 cup	5 g

TABLE 21.2 Protein Content (Source: U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, 2024.)

Fats

A large, complex molecule made up of fatty acids and glycerol is a **fat**. Fats, also known as lipids, are a highly efficient source of stored energy, releasing energy when needed at a very slow, measured rate. Each gram of fat releases 9 calories of energy.

Cholesterol and triglycerides are important lipids within the body. They are associated with essential functions including brain function, hormone regulation, and energy production. Adipose tissue, commonly found in subcutaneous fat, is composed of fat cells that help regulate energy supply within the body. Energy, in the form of excess blood sugar, is converted to lipids and stored as adipose tissue for future use. When glucose stores are depleted, the body turns to these fat stores for energy by breaking down the triglycerides in adipose tissue into simple sugars, which then release energy for immediate use within the body. Cholesterol is a key component of cell membranes; it is transported, along with triglycerides, throughout the body by protein-based compounds called lipoproteins. Lipoproteins, which are classified according to the ratio of lipid to protein, bind to cholesterol and triglycerides for transport through the body. Low-density lipoproteins (LDLs) are essential for healthy cellular function but in excess are associated with increased cardiovascular risk. LDL is often referred to as “bad cholesterol” and can be found in high-fat diets that contain fried foods, red meat, high-fat dairy products, and processed baked goods. High-density lipoproteins are considered “good cholesterol” and are beneficial to cell function. Examples of good cholesterol include nuts, seeds, fish, and legumes.

Lipids are either saturated or unsaturated; unsaturated fats may be monounsaturated or polyunsaturated. Saturated fats are associated with increased cardiovascular risk, leading to atherosclerosis, coronary artery disease, and stroke; they should be limited in a healthy diet. Animal products contain saturated fat, while fat derived from plants typically contains unsaturated fat. Trans fats are human-made fats derived from partially hydrogenated oil. Eliminating trans fats from the diet is recommended because these fats are associated with development of atherosclerosis and adversely affect cholesterol levels. The USDA recommends limiting the consumption of dietary fat to 28 percent or less of daily caloric intake. Saturated fat should be limited to 8 percent or less.

Nutrients for Regulation

Energy-dense macronutrients are not the only nutrients needed to regulate body function. Other nutrients, such as electrolytes, vitamins, minerals, and water, are required for growth, development, and maintenance of regulatory processes in the human body. Electrolytes, such as sodium, potassium, and calcium, are considered macronutrients because they are needed in relatively large quantities. Water is also a macronutrient. A **micronutrient** is a nutrient found in small quantities within the body but which is still necessary for physiological functions. Vitamins and minerals are examples of micronutrients. Table 21.3 lists the RDA of vitamins and minerals for children, and Table 21.4 lists the RDA of vitamins and minerals for adults.

Age	6–11 Months	1–2 Years	2–3 Years	4–8 Years	9–13 Years	14–18 Years
Calories (kCal)		800	1,000	1,200–1,400	1,600–1,800	1,800–2,200
Protein (g)	11	13	13	19	34	46–52
Carbohydrates (g)	95	130	130	130	130	130
Vitamin A (µg)	500	300	300	400	600	700–900
Vitamin D (IU)	400	600	600	600	600	600
Vitamin E (mg)	5	6	6	7	11	15
Vitamin K (µg)	2.5	30	30	55	60	75
Vitamin C (mg)	50	15	15	25	45	65–75
Thiamine (mg)	0.3	0.5	0.5	0.6	0.9	1.0–1.2
Riboflavin (mg)	0.4	0.5	0.5	0.6	0.9	1.0–1.3
Niacin (mg)	4	6	6	8	12	14–16
Vitamin B6 (µg)	0.3	0.5	0.5	0.6	1.0	1.2–1.3
Folate (µg)	80	150	150	200	300	400
Vitamin B12 (µg)	0.5	0.9	0.9	1.2	1.8	2.4
Calcium (mg)	260	700	700	1,000	1,300	1,300
Phosphorous (mg)	275	460	460	500	1,250	1,250
Magnesium (mg)	75	80	80	130	240	360–410
Iron (mg)	11	7	7	10	8	11–15
Zinc (mg)	3	3	3	5	8	9–11
Sodium (mg)	370	1,200	1,200	1,500	1,800	2,300
Potassium (mg)	860	2,000	2,000	2,300	2,300–2,500	2,300–2,600

TABLE 21.3 **Daily Nutritional Goals for Children** (Source: U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2020.)

Age	19–30 Years	31–50 Years	51+ Years
Calories (kCal)	2,000–2,400	1,800–2,200	1,600–2,000
Protein (g)	46–56	46–56	46–56
Carbohydrates (g)	130	130	130
Vitamin A (µg)	700–900	700–900	700–900
Vitamin D (IU)	600	600	600
Vitamin E (mg)	15	15	15
Vitamin K (µg)	90–120	90–120	90–120
Vitamin C (mg)	75–90	75–90	75–90
Thiamine (mg)	1.1–1.2	1.1–1.2	1.1–1.2
Riboflavin (mg)	1.1–1.3	1.1–1.3	1.1–1.3
Niacin (mg)	14–16	14–16	14–16
Vitamin B6 (µg)	1.3	1.3	1.5–1.7
Folate (µg)	400	400	400
Vitamin B12 (µg)	2.4	2.4	2.4
Calcium (mg)	1,000	1,000	1,000–1,200
Phosphorous (mg)	700	700	700
Magnesium (mg)	310–400	320–420	320–420
Iron (mg)	8–18	8–18	8
Zinc (mg)	8–11	8–11	8–11
Sodium (mg)	2,300	2,300	2,300
Potassium (mg)	2,600–3,400	2,600–3,400	2,600–3,400

TABLE 21.4 **Daily Nutritional Goals for Adults** (Source: U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2020.)

Vitamins

A **vitamin** is an essential micronutrient, vital to biochemical regulation within the human body. Vitamins are exogenous (not made by the body) and must be ingested as part of a healthy diet. They are classified by solubility. Vitamins are either absorbed and transported in water (water soluble), or they are absorbed and transported in fat (fat soluble). The body's ability to absorb both fat- and water-soluble vitamins can be affected by various medical conditions. Many drugs can interfere with absorption and metabolism of vitamins. Vitamins can be toxic if taken in excess, but vitamin deficiencies can also have detrimental effects. Therefore, scientists have determined RDA for

many vitamins to help reduce associated risks.

Vitamin C and the complex of B vitamins are examples of water-soluble vitamins: that is, they dissolve in water. Water-soluble vitamins are eliminated in the urine fairly quickly, so toxicities are rare. Deficiencies are often due to lack of access to quality food. Vitamin C is found in citrus fruits, vegetables, and potatoes. It helps regulate collagen, hormone, and amino acid production and assists with iron absorption and wound healing. The complex of B vitamins helps regulate a variety of physiological and neurological processes. Common B vitamins include B1 (thiamine), B2 (riboflavin), B3 (niacin), and B12 (cyanocobalamin). Foods rich in B-complex vitamins include meat, fish, eggs, and legumes.

Fat-soluble vitamins dissolve in lipids. Common fat-soluble vitamins include vitamin A, vitamin D, and vitamin K. Vitamin A is essential to maintain vision and healthy skin and is found in fish liver oils, egg yolks, and vegetables. Vitamin D helps build and maintain healthy bones and is not found naturally in food. Instead, vitamin D is absorbed through direct sunlight, though many fortified foods now contain vitamin D. Vitamin K promotes blood clotting and reduces bleeding risk and is found in dark green, leafy vegetables. Vitamin E is a fat-soluble vitamin with antioxidant properties, protecting cells against the effects of free radicals. Foods rich in vitamin E include vegetable oils, peanuts, and leafy greens. Many fat-soluble vitamins are stored in the liver and can have toxic effects on the body if taken in excess.

Minerals

Another essential component of physiological processing is the **mineral**. Some minerals are macronutrients, and some are micronutrients. Electrolytes are macronutrient minerals that are essential to cardiac, musculoskeletal, and neurological functions. They help maintain water balance and acid-base balance. Important electrolytes include sodium, potassium, calcium, phosphorous, and magnesium. Each of these electrolytes must be balanced within a tight therapeutic range to maintain homeostasis and avoid harmful effects.

Some minerals are micronutrients and are found in minute quantities within the body. These minerals, also known as trace minerals, have RDA to avoid toxicities. Important trace minerals include iodine, iron, and zinc. Iodine is essential to thyroid hormone production and is mainly found in sea salt. Iron is an important component of blood, specifically hemoglobin. It is found in animal products. Zinc is essential to immune and metabolic processes and can be found in many meat products.

Water

Water is an essential macronutrient that must be maintained in homeostatic balance to avoid the detrimental effects of both over- and underhydration. Two-thirds of the volume of total body water (TBW) are found inside body cells (intracellular). The other third is extracellular and found in the vascular system and interstitial fluids (Figure 21.2a). TBW is roughly 50 to 60 percent of overall body weight, but the amount is age dependent (Figure 21.2b). Water is ingested and absorbed in the digestive tract and regulated by various mechanisms: the thirst mechanism, kidney function, pituitary function, and osmosis. The body loses about a liter of fluid a day through urine, sweat, and so on. Thus, the average recommended daily intake of water is 2.5 L to maintain adequate kidney function and vital capacity.

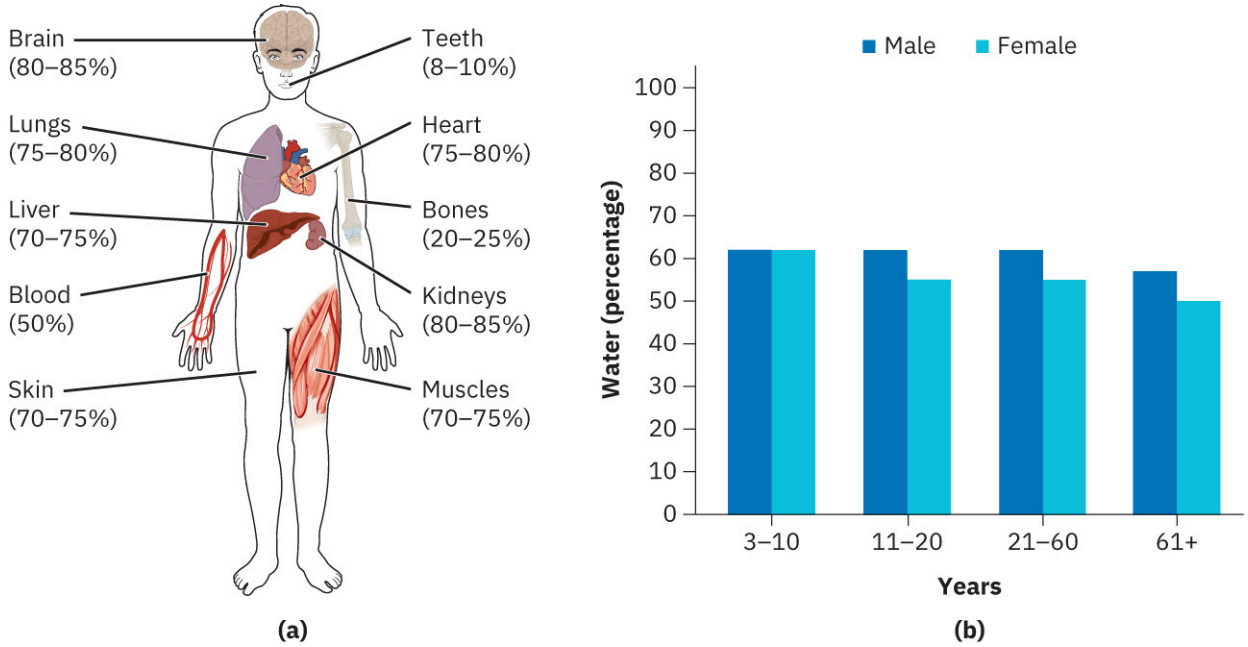

FIGURE 21.2 (a) Total body water is a critical component of a person's health. Many structures of the human body are mostly water. (b) As people age, the percentage of their bodies that consists of water decreases. (credit a: modification of work from *Anatomy and Physiology*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license; credit b: data source: Lu, H., Ayers, E., Patel, P., & Mattoo, T. K. (2023). Body water percentage from childhood to old age. *Kidney Research and Clinical Practice, 42*(3), 340–348. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Optimal Nutritional Status

The human body performs best under conditions of optimal nutrition. Nutrient deficiencies can compromise the body and affect both physical and mental functioning. Likewise, excessive nutrient intake can result in toxicity. Homeostatic balance is the goal for both macro- and micronutrients. The USDA provides recommendations for daily nutrient intake and guidance on how to support daily patterns of healthy eating to promote optimal health across the life span.

Optimal nutrition begins before birth. During pregnancy, higher levels of macronutrients are needed to support the growth and development of the fetus. Following birth, good nutrition is vital to maintaining the rapid growth and development of the infant. Throughout each life stage, (infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy/lactation, and older adulthood), optimal nutrition is foundational to healthy living and human flourishing. When optimal nutrition is not achieved, over time malnutrition occurs, which can lead to various negative outcomes depending on the nutritional deficit.

PATIENT CONVERSATIONS

What If Your Patient Is on a Fad Diet?

Scenario: Nurse is completing an admissions assessment on a patient being admitted with anemia, beginning with height and weight measurement. The patient sees that she weighs 140 pounds and smiles at the nurse.

Nurse: Ms. Erving, I see you're happy with your weight, huh?

Patient: Yes, I am! I've been on a diet for two months now, and I've lost over 30 pounds!

Nurse: Really? That's a lot of weight very quickly. What diet are you currently on?

Patient: I'm only eating fruits. It's called a fruitarian diet. I can eat all the fruit I want.

Nurse: So, you just eat fruit? Nothing else? No protein, dairy, grains, or vegetables?

Patient: Yes, that's right.

Nurse: Did you know that your body requires optimal nutrition to remain healthy? That includes a healthy balance of macronutrients and micronutrients. When your body doesn't get these important things in your diet, you can develop nutritional deficits.

Patient: I didn't know that. I thought my weight was the most important thing to be healthy, and being overweight was unhealthy.

Nurse: Sure, being overweight can be unhealthy, but you can be an average weight for your height and still be unhealthy. I saw in your initial lab tests that your calcium, iron, vitamin B12, and vitamin D are all low. Have you been feeling tired since you started your diet?

Patient: Actually, I have, but I didn't think it was related to what I was eating because fruit is healthy, and I was losing weight.

Nurse: Restricting your diet to only one food group is not a healthy way to lose weight. Your body needs a variety of vitamins and minerals to stay healthy. If it's OK with you, I'd like to have the nutritionist come and talk to you about how you can incorporate healthy foods into your diet for optimal nutrition and maintain a healthy weight.

Patient: Thank you, that would be great.

Malnutrition

An imbalance between the nutrients consumed and nutrients needed leads to **malnutrition**. These nutritional imbalances can result in both undernutrition and overnutrition and can involve both macronutrients and micronutrients. The RDA are a helpful tool to identify individuals at risk (see Table 21.3 and Table 21.4). However, malnutrition is multifactorial, and careful clinical follow-up is necessary to minimize long-term negative impacts of poor nutrition.

Undernutrition

Undernutrition is a state of malnutrition in which there is inadequate intake or impaired absorption of nutrients in the body. Undernutrition can be experienced across a person's life span. It often refers to calorie or protein deficits (macronutrient undernutrition), but it also includes deficiencies in vitamins and minerals (micronutrient undernutrition). Low calorie intake is a common cause of undernutrition and is commonly associated with poverty, homelessness, mental disorders, and cognitive disorders. Caloric intake can also be affected by medical conditions that restrict ingestion of food, such as dysphagia, or conditions that interfere with absorption in the gastrointestinal tract.

Caloric deficits result in the breakdown of fats to meet the body's energy needs. Prolonged caloric deficits will deplete fat stores and stimulate the metabolism of proteins, thus causing the breakdown of muscle and tissues. Prolonged caloric deficits can lead to starvation and the visible wasting of muscle and fat. In the same manner, poor caloric intake will lead to deficiencies in essential vitamins and nutrients. The negative impact of these deficits on the body depends on the cause and severity of the deficiency. Populations most at risk include individuals with low income and those living in poverty, those who are chronically ill, children, and older adults.

Overnutrition

The WHO now includes overnutrition as a form of malnutrition. Overnutrition results from an excessive intake of nutrients, far beyond the body's need. Overnutrition results in excessive weight gain and obesity. Obesity is associated with a BMI of thirty or higher; severe obesity is associated with a BMI of forty or higher. Increasingly, children are experiencing obesity, causing the CDC to develop growth charts for children that extend the BMI-for-age (see Link to Learning: Pediatric Growth Charts). Obesity affects many aspects of health. It is associated with low socioeconomic conditions and discrimination, as well as mental stress resulting in depression and anxiety. It is a lead indicator for the development of cardiovascular disease, metabolic syndrome, diabetes, and various respiratory and musculoskeletal disorders. The population most at risk includes individuals with low incomes and those living in poverty due to the scarcity of nutritious whole, unprocessed foods. Individuals with sedentary lifestyles are at risk as well.

Hydration

As shown in Figure 21.3, the human body maintains water homeostasis through a balance of ingestion and

elimination. Most water is ingested by drinking fluids, such as plain water, juices, and caffeinated beverages. Ingested water also comes from food, especially fruits and vegetables. Water that is visible and measurable as it is lost is called sensible fluid loss. Urination is an example of sensible fluid loss. Insensible fluid loss cannot be measured. An example of insensible loss is water vapor lost through breathing. Adequate hydration will balance the water that enters and exits the human body. An imbalance in hydration can lead to either a fluid volume deficit or fluid volume overload. Both of these conditions present problems, but for very different reasons.

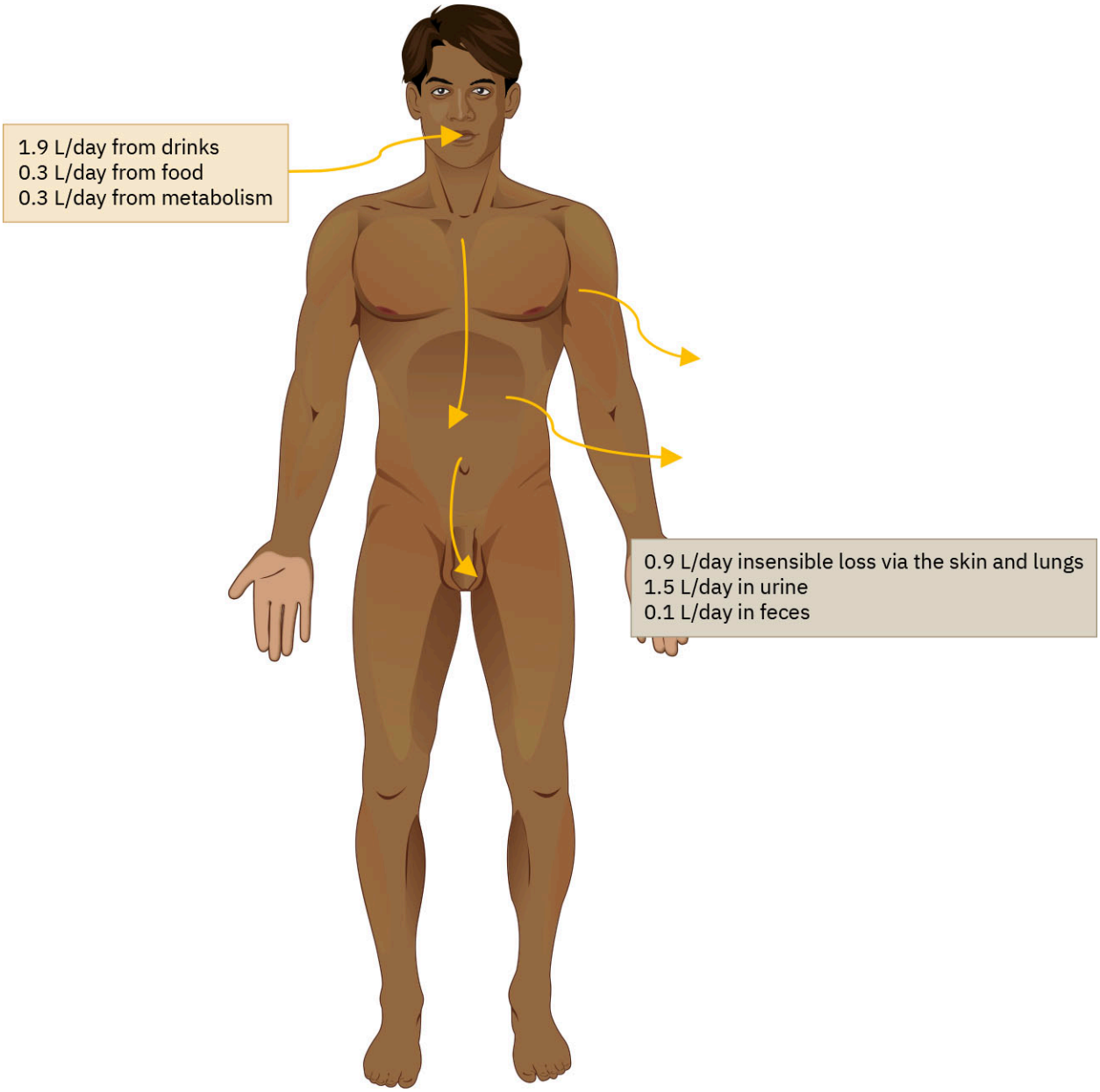

FIGURE 21.3 The human body maintains water homeostasis by ingesting and producing water and eliminating it through a number of processes. Water loss can be increased in dry climates or when a patient has diarrhea. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Dehydration

A fluid volume deficit is called **dehydration**; this occurs with inadequate water intake or excessive water loss or both. Conditions associated with dehydration include vomiting, diarrhea, prolonged fevers, and excessive sweat due to heat stroke. Some neurological conditions can impair the thirst mechanism or impair the ability to swallow, which can lead to poor fluid intake. In some cases, sodium levels are altered. Volume depletion can lead to kidney and cardiac impairment, and severe shock can result. Populations most at risk include infants and children, the chronically ill, and older adults.

Overhydration

Fluid volume overload, or overhydration, occurs with excess water intake or poor water elimination. These can lead to volume expansion affecting cardiac, respiratory, and kidney function. Impaired elimination of water in the body is a common consequence of chronic disease and is often associated with an alteration in sodium levels. The three chronic conditions that most commonly lead to overhydration are heart failure, kidney failure, and liver failure; pregnancy is another common cause of overhydration. Symptoms of fluid overload include pitting edema, ascites, and dyspnea and crackles from fluid in the lungs. Edema is swelling in dependent tissues due to fluid accumulation in the interstitial spaces. Ascites is fluid retained in the abdomen. Treatment depends on the cause of the fluid retention. Sodium and fluids are typically restricted, and diuretics are often prescribed to eliminate the excess fluid.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety

Competent nurses will employ assessment skills to identify patients in fluid overload and to detect when they are improving or deteriorating. Take the example of Nurse Rita who works at an outpatient wound care clinic. Rita is taking care of 42-year-old Mr. Mahoney who has weekly wound care dressings scheduled for the next six weeks with labs. She has been his nurse for over five years at this same clinic.

Week 1: Blood pressure 110/65, heart rate 72, lungs clear bilaterally, Respirations 12, nonpitting edema on right lower extremity. Sodium 139, Potassium 4.2, Calcium 9.

Patient is calm, cooperative, and considers himself “a funny guy. Rita you are the best nurse here.”

Week 4: Blood pressure 130/75, heart rate 80, fine crackles in bilateral lower lung bases, Respirations 16, 2 + edema on lower extremities. Pt is calm, cooperative and stated “I love your new haircut Rita.”

Week 6: Blood pressure 160/85, heart rate 80, crackles heard in lower and upper lung fields bilaterally, Respirations 32, 3+ edema on lower extremities, clear drainage from right lower leg. Sodium 120, Potassium 3.1, Calcium 9.

Reports not sleeping well at night and using three pillows or sleeping in the recliner. Out of breath all the time. Produces little urine. When Rita asks about how he is sleeping, patient states “Who are you again?”

This patient has had several changes in his assessment. The competent nurse will recognize when a patient’s assessment changes and report these findings to the healthcare team. This patient needed further assessment and interventions at each assessment to prevent further deterioration.

21.2 Factors Affecting Nutrition

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the physiological factors affecting nutrition
- Understand the sociocultural, behavioral, and lifestyle factors affecting nutrition
- Examine the psychological factors affecting nutrition

Good nutrition is associated with a high quality of life. This is true for all people, whether young or old, wealthy or poor, athletic or sedentary. Nutrient-rich foods and fluids must be available in adequate amounts to meet the specific metabolic needs of each individual. Meeting these needs is a dynamic process involving the ingestion, digestion, absorption, and metabolism of each nutrient according to its biochemical makeup. There are many factors that influence these biological processes. Some factors have direct, physiological effects on these processes, such as the stage of growth and development or the presence of underlying medical conditions. Some factors have subtler effects, such as cultural or religious influences. The meaning of food and its association with self-image can have psychological effects that influence a person’s relationship to nutrition. This module explores some of the physiological and psychological factors that positively or negatively impact nutritional health.

Physiological Factors

Nutrition impacts many physiological processes. The physiology of digestion involves the breakdown of foodstuffs

into absorbable nutrients. Digestive processes include mechanical digestion, propulsion, chemical digestion, and absorption (Figure 21.4). The process of breaking down, or metabolizing, nutrients is influenced by many factors, including the following:

- digestive organ function responsible for the breakdown, absorption, and metabolism of nutrients
- kidney function responsible for fluid balance
- cardiovascular function responsible for transportation of nutrients
- endocrine function responsible for the production of hormones that control metabolic processes
- neurocognitive function responsible for perceptions of hunger, satiety, and thirst

Bones, muscles, and sensory organs are all involved in nutrient pathways. In fact, every cell in the body utilizes nutrients. Any process that disrupts the metabolic pathways in the body has the potential to negatively impact nutritional health.

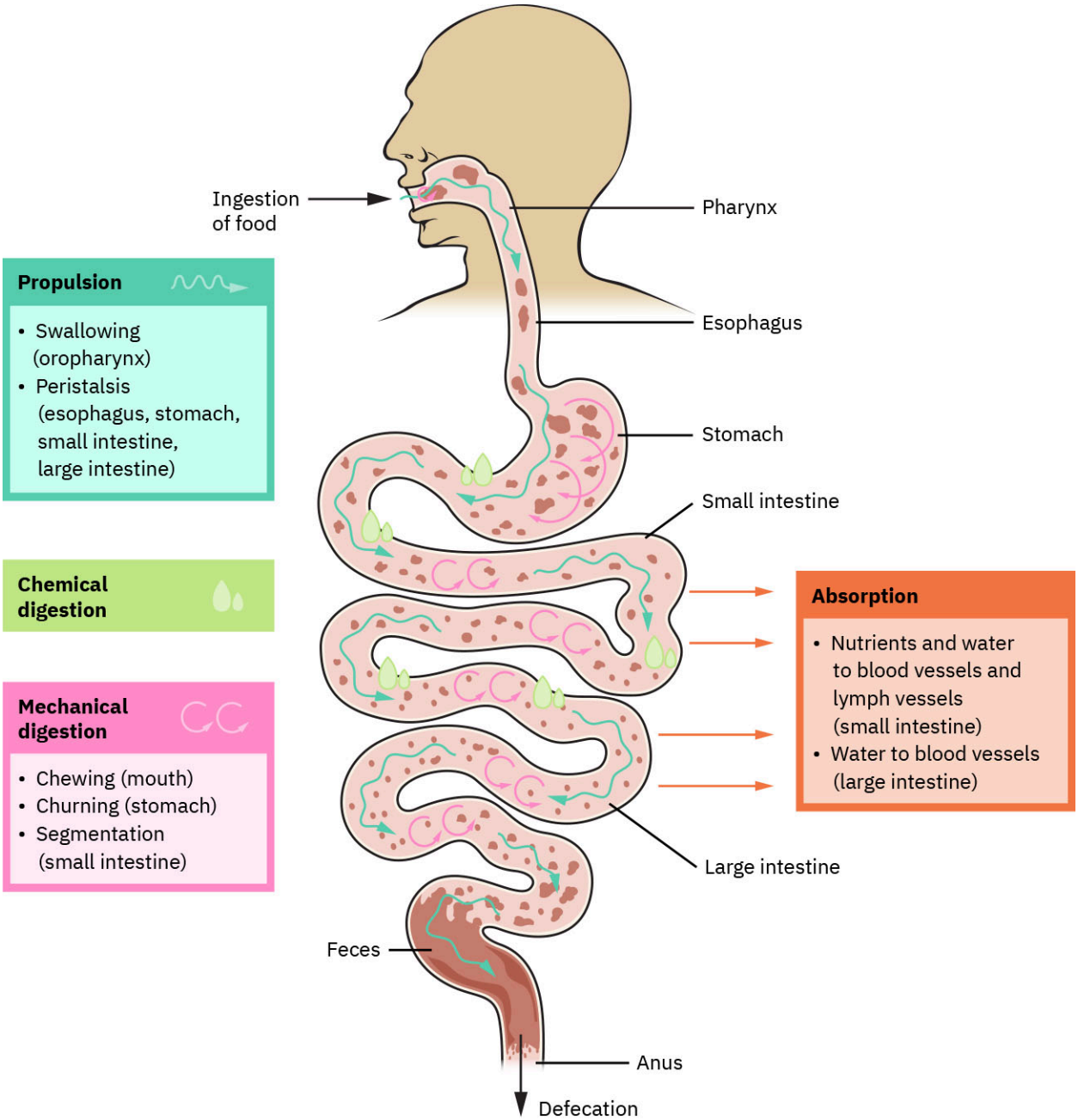

FIGURE 21.4 There are four phases of digestion, beginning with the ingestion of food and ending with the elimination of waste. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Some physiological factors have a profound effect on metabolic pathways. A person's genetic makeup, stage of growth and development, medications, and underlying medical conditions all directly impact how their body processes nutrients. Other factors, such as environment, socioeconomic conditions, and personal preferences, can directly influence food choice and nutrient availability. Consequently, it is important for the nurse to consider the holistic needs of every patient, including the many factors that influence the nutritional demands on the human body.

Developmental Level

The human body is engineered to grow and develop through structured, organized, time-sensitive processes. These processes occur naturally within the body and follow predictable patterns for physiological and cognitive maturity. Across a person's life span, nutritional requirements differ based on the unique developmental needs at each stage of development. For example, caloric needs are based on body weight, activity level, and metabolic demands. As growth and development occur, these factors change. For example, in utero body weight is low, but metabolic demands are high. At birth, growth measures, such as head circumference, length, and weight, help identify individual risk for malnutrition. As the child grows, body weight increases, activity levels vary, and metabolic demands continue.

Growth charts are tools for measuring healthy growth trends based on established height and weight norms. At each life stage, developmental markers can be tracked to help with early identification of developmental delays and abnormalities. Timely nursing intervention along the growth and development path can dramatically improve health outcomes and prevent long-term negative health effects associated with early nutritional deficits.

REAL RN STORIES

Encouraging Diet Modifications in a Family
Nurse: Julie, RN
Clinical setting: Community clinic
Years in practice: 10
Facility location: Texas

I remember when I was a student nurse, and we were assigned clinical rotations in the local community clinic. One day a mom came into the clinic to seek care for her 10-year-old. She reported her daughter had been having increased fatigue and was steadily gaining weight over the last year. The mom said, "Last year she was in volleyball and soccer and was so active; now all she wants to do is lay around watching TV and eating junk food. I am concerned she is developing unhealthy habits at an early age."

Upon further assessment, I noticed the girl's diet consisted of excessive amounts of salt, sugar, and fat. I was able to educate the mom how at this age, almost one-fourth of all American children have elevated cholesterol. We also discussed the need for increased vitamin D and calcium. I explained how these are vital requirements as her bones enlarge to prevent osteoporosis later in life. The physician ordered lab work and provided the family a referral to a nutritionist. The family and I discussed activities that sparked their interest in trying them out together, and they verbalized different diet modifications they planned to incorporate immediately. That day I left clinical feeling like I truly made a difference in this young child's life.

Age

If typical growth and development patterns occur, chronological age can predict generalized nutritional needs. Recommended DRIs provide guidelines for nutrient needs across an individual's life span. Table 21.5 provides an example. Note that the recommendations are based on weight (kilograms) and age. Consider the needs of a child versus the needs of an adult. Protein, calories, and calcium are needed in greater amounts as children grow, then level off in adulthood. There are also unique recommendations for older adults, who experience loss of muscle and bone mass and lower activity levels due to declining mobility and thus require fewer calories than their younger counterparts. Older adults also have unique dietary needs due to their higher risk of chronic disease, development of poor dentition, and socioeconomic changes that affect the type and amount of nutrients consumed.

	Age (years)						
Macronutrient	2–3	4–8	9–13	14–18	19–30	31–50	50+
Protein (g)	13	19	34	52	56	56	56
Protein (% kcal)	5–20	10–30	10–30	10–30	10–35	10–35	10–35
Carbohydrate (g)	130	130	130	130	130	130	130
Carbohydrate (%)	45–65	45–65	45–65	45–65	45–65	45–65	45–65
Fat (% kcal)	30–40	25–35	25–35	25–35	20–35	20–35	20–35
Fiber (g)	14	20	25	31	34	31	28

TABLE 21.5 Comparison of Male Macronutrient Needs: Toddler to Adult (Source: U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2020.)

Sex

Nutritional needs differ between sexes largely due to hormone differences. A chemical mediator that circulates in the body and has a specific stimulating or inhibiting action on the target organs is called a hormone. Table 21.6 lists some of the hormones that control growth and development, metabolism, adrenal function, and stress. Sex hormones are responsible for the majority of differences between the biological sexes. These differences can result in distinctive caloric and other nutritional needs, particularly beginning in adolescence. For example, females require higher levels of iron during childbearing years due to the hormonal influences of menstruation and pregnancy. Pregnancy also changes caloric needs. More information regarding specific pregnancy-related nutritional needs is provided later in this chapter.

Endocrine Gland	Associated Hormones	Chemical Class	Effect
Pituitary (anterior)	Growth hormone (GH)	Protein	Promotes growth of body tissues
Pituitary (anterior)	Prolactin (PRL)	Peptide	Promotes milk production
Pituitary (anterior)	Thyroid-stimulating hormone (TSH)	Glycoprotein	Stimulates thyroid hormone release
Pituitary (anterior)	Adrenocorticotropic hormone (ACTH)	Peptide	Stimulates hormone release by adrenal cortex
Pituitary (anterior)	Follicle-stimulating hormone (FSH)	Glycoprotein	Stimulates gamete production
Pituitary (anterior)	Luteinizing hormone (LH)	Glycoprotein	Stimulates androgen production by gonads
Pituitary (posterior)	Antidiuretic hormone (ADH)	Peptide	Stimulates water reabsorption by kidneys

TABLE 21.6 Endocrine Glands and Their Major Hormones

Endocrine Gland	Associated Hormones	Chemical Class	Effect
Pituitary (posterior)	Oxytocin	Peptide	Stimulates uterine contractions during childbirth
Thyroid	Thyroxine (T4), triiodothyronine (T3)	Amine	Stimulates basal metabolic rate
Thyroid	Calcitonin	Peptide	Reduces blood Ca^{2+} levels
Parathyroid	Parathyroid hormone (PTH)	Peptide	Increases blood Ca^{2+} levels
Adrenal (cortex)	Aldosterone	Steroid	Increases blood Na^{+} levels
Adrenal (cortex)	Cortisol, corticosterone, cortisone	Steroid	Increases blood glucose levels
Adrenal (medulla)	Epinephrine, norepinephrine	Amine	Stimulates fight-or-flight response
Pineal	Melatonin	Amine	Regulates sleep cycles
Pancreas	Insulin	Protein	Reduces blood glucose levels
Pancreas	Glucagon	Protein	Increases blood glucose levels
Testes	Testosterone	Steroid	Stimulates development of sex characteristics including a deeper voice, increased muscle mass, development of body hair, and sperm production
Ovaries	Estrogens and progesterone	Steroid	Stimulates development of sex characteristics including the development of adipose and breast tissue, and prepares the body for childbirth

TABLE 21.6 Endocrine Glands and Their Major Hormones

Pregnancy

Nutritional requirements increase during pregnancy and lactation. The growing fetus puts increased nutritional demands on the body. Increased caloric needs require a nutrient-dense diet to maximize nutrition. Prenatal vitamins are advised to meet increased requirements for micronutrients such as iron, folic acid, iodine, choline, and

vitamin D. Optimal nutritional requirements continue during lactation, when the mammary glands produce and release milk for breastfeeding. Increasing intake of pasteurized dairy, eggs, and lean proteins is a healthy way of increasing these nutrients.

Health Status

An individual's health status is greatly influenced by their overall nutritional status, and vice versa. Individuals in good health experience high levels of well-being and life satisfaction. Healthy people are physically active within their environment and engage in rewarding relationships. Physiologically, good nutrition and hydration balance lead to healthy growth and development patterns. The maintenance of a healthy body weight protects individuals by reducing the risk of chronic disease. Conversely, chronic disease states often present with significant nutritional demands that increase the risk of compromised nutritional health and negative outcomes.

Chronic illness and declining health impact nutritional status in various ways. Some chronic illnesses interfere with an individual's ability to ingest food properly. For example, a child with a cleft palate may have trouble eating enough calories, or an older adult who suffers a stroke may develop dysphagia (difficulty swallowing) and be unable to swallow food. Some chronic illnesses affect absorption of nutrients within the body. A child with cystic fibrosis may develop pancreatic insufficiency and be unable to absorb fats and proteins. Inflammatory bowel disease can result in poor vitamin B12 absorption. Many chronic diseases cause metabolic dysfunction leading to poor utilization of nutrients. Diabetes, Addison disease, and chronic kidney disease are examples of chronic diseases with significant impact on nutrient metabolism and utilization.

Every chronic disease provides a nutritional challenge. Treatment for heart disease includes restrictions on sodium and fat. Increased calcium and vitamin D are needed to treat bone disorders such as osteoporosis. Treatment for gastroesophageal reflux disease includes limiting acidic foods, spicy foods, and alcohol. There is a nutritional aspect associated with the prevention or treatment of nearly every chronic disease. Avoiding excess calories is important to both the prevention and treatment of obesity and heart disease. Controlling fat consumption reduces the risk of obesity, stroke, and heart disease. Adequate fiber in the diet reduces the risk of colon cancer. Good nutrition, as prevention or treatment, leads to better health outcomes.

Sociocultural, Behavioral, and Lifestyle Factors

Healthy lifestyles are key to wellness and reduction of chronic disease. However, lifestyles are strongly influenced by sociocultural factors that differ for different people. Culture, religion, and economic status play a significant role in food preferences and often give food and mealtimes meaning beyond the ingestion of nutrients. Environmental factors influence availability and quality of food and water. Unhealthy behaviors, such as alcohol and substance abuse, directly influence nutritional status. Many people rely on supplements to counteract the ill effects of unhealthy lifestyles and perceived nutritional deficits. In this section, we briefly explore how these sociocultural factors can influence overall nutritional health.

Culture

Cultural competence is a hallmark of patient-centered care. Culture describes the unique patterns of behavior and thought belonging to an identified group or organization. Nutrition and dietary patterns are often an integral part of cultural identity. The United States is home to a vast number of cultures. Cultural beliefs affect types of food eaten and when they are eaten. Some foods may be restricted due to beliefs or religious rituals, whereas other foods may be viewed as part of the healing process or have significant meaning to the celebrations of life. It is essential to consider cultural food preferences when planning nursing care and encourage healthy habits within the context of these foods.

CULTURAL CONTEXT

Cultural Variations

Cultural and religious beliefs often influence food selection and food intake. It is important for nurses to conduct a thorough patient assessment, including food preferences, to ensure adequate nutritional intake during hospitalization. Every culture has variations that make them unique, yet there are also similarities among many. Although a certain dish or ingredient might have originated in one country or culture, global trade has transported

fruits, vegetables, and culinary practices to the entire world. For this reason, nurses must never make assumptions about their patients' diet based on culture or ethnicity. Instead, ask every patient about their food preferences and offer as many healthy choices as possible.

Religion

Religious practices can influence nutritional intake, often due to restrictions in specific foods or meal preparation. Both Jewish and Muslim laws prohibit the consumption of pork products, and Hindu scriptures promote a vegetarian diet. Restrictions may vary even within a given religion as people practice varying degrees of strictness to dietary doctrines. Some individuals may observe food restrictions in association with specific religious celebrations. For example, Catholics may observe dietary restrictions during Lent, while practicing Muslims may fast during Ramadan. Food preparation can also be influenced by religious beliefs. Some Jewish people observe Kosher laws which govern the preparation of certain foods (e.g., beef), the prohibition of certain foods (e.g., pork and gelatin), or the combination of some food (e.g., beef served with dairy products), while some Muslim people observe Halal (the Arabic word meaning "permissible" or "lawful") which restricts the consumption of pork, alcohol, and blood products, and and calls for minimal suffering when preparing animal products. Religious practices and beliefs can be complex. It is important to support the nutritional goals of the individual patient by understanding and respecting the religious dietary practices of every patient.

Economic Status

Economic status refers to a combination of economic and social indicators that describe an individual's overall scale of wealth and status. Factors that contribute to economic status include income, educational level, occupation, and place of residence. Economic status predicts a person's ability to obtain nutritious food on a routine basis. Individuals with lower incomes have less means to obtain and prepare nutritious foods. Some individuals may live in a **food desert**: a geographical area where fresh produce and foodstuffs are either too expensive or unavailable. Federal supplemental assistance programs are available to help meet the nutritional needs of underserved and marginalized low-income populations. These include the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). There are also private organizations such as Meals on Wheels America. Individuals with higher incomes are not immune from nutrition concerns. Excess calories and intake of nutrient-poor foods can lead to obesity and other metabolic disorders due to easy access to food, especially fast food.

LINK TO LEARNING

The USDA developed a Food Access Research Atlas (https://openstax.org/r/77foodaccess) to show how food access varies for certain subpopulations in the United States. It can be used for research or community planning to increase supermarket access.

Environment

Community environments have a large impact on nutritional health. As stated earlier, food deserts can create areas of food insecurity among at-risk populations. This has its greatest impact on infants, children, and older adults, who are often dependent on others for meal preparation and shopping. Urbanization and industrial effects can have detrimental consequences on clean water supplies and spaces for meal preparation. War zones and refugee camps often deal with undernutrition and lack of access to safe, quality food and water.

Along with geographical environments, family structures within communities have a profound effect on nutritional status. People in a state of **food insecurity** have limited access to adequate food, typically due to economic or social factors. People experiencing the uncertainty of food insecurity or family discord find it difficult to maintain healthy eating routines. School lunch programs are a helpful resource to families in low-income neighborhoods. Older adults often experience isolation, which leads to poor nutrition habits and negative health trends. As patient advocates, nurses must gain understanding of federal and local nutrition assistance programs and implement timely referrals for their at-risk patients.

LINK TO LEARNING

Older adults can be an at-risk population. Medicare is a federal program that provides access to health care for older adults, but it is not meant to meet physiological needs such as food. Unfortunately, food insecurity is a significant problem among older adults. Read the USDA's Nutrition Programs for Seniors (https://openstax.org/r/77nutritionprog) and review the various programs in place to address food insecurity in the older adult population. Research one of the programs and consider how it could be incorporated into a nutrition teaching plan for an older adult.

Alcohol Use

Because alcohol is high in calories and low in nutrient value, it can negatively impact nutritional health even when consumed in acceptable levels. The use of alcohol can increase the risk of chronic disease and injury. Alcohol consumption is linked to elevated triglycerides. Excessive use of alcohol can lead to chronic nutrient deficiencies due to poor absorption of nutrients, fluid imbalance, gastrointestinal disorders, and liver disease. According to Healthy People 2030, binge drinking (consuming four or more drinks per day for females or five or more drinks per day for males) is a significant problem in the United States (CDC, 2022). The USDA recommends that males limit consumption to two drinks per day and females to one drink per day.

Overuse of Supplements

Supplementation of macronutrients and micronutrients has become increasingly popular due in part to marketing and fitness claims as well as easy access to over-the-counter supplements. Supplements are pills, capsules, and liquids that contain vitamins, minerals, amino acids, or other nutrients. The U.S. government does not require manufacturers of dietary supplements to prove their safety or efficacy, and thus the industry is poorly regulated. Even when supplements are accurately labeled and safely produced, their overuse can lead to toxicities, particularly in fat-soluble vitamins such as vitamin A and vitamin D. Large doses of vitamin C, vitamin B6, and niacin can also lead to toxicities. Performance-enhancing dietary supplements contain amino acids that in excess can cause liver and kidney impairment. It is important for nurses to be familiar with the RDI, RDA, and other standard nutrient recommendations and know how to assess for potential toxicities in patients taking supplements.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Evidence-Based Practice (EBP)

Definition: Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care.

Knowledge: Explain the role of evidence in determining best clinical practice

Action: It is important for the nurse to ask the patient about any over-the-counter supplements they may be taking. Many patients do not realize that certain supplements can interact with prescription medication or that to much supplement can cause toxicity. Completing a comprehensive health assessment ensures the nurse is providing evidence-based practice.

Medications

Some medications enhance metabolic processes and impact nutritional status in a variety of ways. For example, exogenous insulin brings needed glucose into body cells. Antiglycemic medications, such as sulfonylureas and bigaunides, assist in improving insulin sensitivity, thus improving utilization of blood glucose by the cells in the body. Thyroid hormone maintains thyroid function, which sets the body's metabolic rate. Other medications affect gastric function by lowering levels of acid production. Still other medications, such as psyllium and glycolax, alter absorption of nutrients and water in the gut. Statin drugs lower lipids levels. It is important to know how medications are used within the body and how they directly influence metabolic processes.

Many medications have an indirect effect on nutritional status. For example, diuretics are used to increase elimination of water and thus will affect body water levels as well as sodium and potassium balance. Medications

with gastric upset as a side effect can decrease nutrient intake and absorption. Some psychotropic medications interfere with appetite, leading to either weight gain or weight loss, depending on the drug. Nurses must be familiar with the side effects of all drugs administered to patients under their care, anticipating long-term effects on nutritional status.

Some nutrients interfere with the mechanism of action of different drugs. For example, vitamin K, found in green leafy vegetables, can decrease the effectiveness of some anticoagulants. In contrast, some drugs should be taken with food to increase absorption. For example, vitamin C improves the absorption of iron. The pharmacokinetics of a drug—the study of the drug's absorption, metabolism, and distribution within the body—determine the probability of a food-drug interaction. Food and drug interactions can cause deficiencies or toxicities depending on the drug and the food. Nurses must always review administration requirements for each drug, noting whether the drug should be taken with or without food.

PATIENT CONVERSATIONS

Educating a Patient About Medications Before Discharge

Scenario: The nurse is discharging his patient and reviewing the discharge paperwork with her. He notices that the patient is prescribed warfarin, a new medication that she will have to continue to take at home after discharge.

Nurse: Okay, Ms. Embiid, while in the hospital you've been taking warfarin. Do you know why you were taking this?

Patient: Oh, yes. It's to keep my blood from forming a clot, right?

Nurse: That's right. You'll have to continue to take this medication at home, and follow up with your doctor in two weeks. Do you know how to take this medication?

Patient: Well, I've been taking it at night here, so I guess I'll take it at night at home, too.

Nurse: That's right. The best way to take this medication is to take it at the same time every night. It's also very important to avoid cranberry juice and grapefruit juice and try to maintain the same level of vitamin K consumption every week.

Patient: Really? Why?

Nurse: Certain foods, such as cranberries and grapefruit, can actually increase the levels of warfarin absorbed by your body. High doses of vitamin K, found in green leafy vegetables, can decrease the effectiveness of warfarin. It's very important to maintain a consistent diet and not make any major changes without checking with your doctor.

Patient: Thanks for letting me know! I'll be sure to monitor what I eat while on warfarin.

Psychological Factors

Physiological factors, such as growth and development, health status, and medication use, have a direct effect on nutritional status within the body. Psychological factors can influence nutritional status as well. Emotional well-being is often closely associated with food preferences and intake. Self-image impacts nutritional well-being. Cultural trends in beauty and health provide context for self-image and give meaning to food and dietary traditions. Conversely, overall nutrition can have a significant impact on psychological well-being.

Food Meaning

Nutrition is a basic necessity of life. Maslow's hierarchy of needs (Figure 4.5) lists food as an essential physiological need. It is important to note, however, that food consumption is highly influenced by cultural and environmental factors that have a profound effect on psychological well-being. Thus, food to most people is more than a nutrient. Food is tied to family traditions and celebrations in life. Americans traditionally celebrate Thanksgiving with turkey and pumpkin pie. Many Italian Americans celebrate the Feast of Seven Fishes on Christmas Eve, and Jewish tradition serves challah bread at the Sabbath and potato latkes at Hanukkah. Similarly, vegans avoid meat and other animal products due to personal beliefs related to animal cruelty and exploitation. Many cultures have food traditions that transcend nutritional science, giving food meaning beyond its chemical composition.

Emotional responses are invoked when food meaning goes beyond mere nutrition. Most celebrations that involve food evoke feelings of comfort, happiness, and belonging. Memories, both good and bad, are often tied to the sight and smell of specific foods. Associations with sadness and grief can lead to food aversions, while foods tied to comfort can lead to food excesses as the desire to re-create moments of comfort and celebration override judgment. This can lead to binge eating and obesity. It is important for nurses to identify and reinforce healthy patterns of eating and recognize nutritional risks related to emotional eating habits.

Self-Image

Nutritional status is tied to weight trends, weight trends are tied to body image, and body image is tied to self-image. A person's **body image** is the perception that person has about their physical body, including any feelings associated with that perception, whereas self-image is broader, encompassing feelings about one's whole self. Individuals who maintain a healthy body weight are more likely to have a positive self-image—particularly given cultural norms, reinforced by media, that stigmatize bodies perceived to be over- or underweight. Distorted perceptions of body image can lead to severe eating disorders, such as anorexia nervosa and bulimia.

Depression

As stated earlier, food often evokes an emotional response. It can provide feelings of comfort and belonging or feelings of sadness and grief. It is easy for food to become an emotional outlet for psychological discomfort, especially when the foods consumed promote feelings of comfort and belonging. Emotional eating is common among individuals who are depressed or stressed as they seek emotional responses they find lacking elsewhere in their life. The consumption of "comfort foods" is an emotional response to stress and is common among most individuals. When the dietary pattern includes a high degree of emotional eating, negative outcomes, such as binge eating and overeating that leads to obesity, are more likely to occur. It is important to assess the underlying emotional state of individuals experiencing nutritional impairment. A holistic approach to nursing care is needed.

21.3 Specialized Diets

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine the standard dietary recommendations for optimal health
- Recognize specific therapeutic diets for diseases or conditions
- Describe consistency modification diets
- Identify what enteral nutrition is and how to administer it
- Understand what parenteral nutrition is and how to administer it

Sometimes dietary intake must be adapted to meet individual nutrient needs. This may include restricting or increasing specific nutrients in the diet. It may also include modifying the consistency of the food when there is impaired swallowing or a need to give rest to the digestive tract. Sometimes nutrition must be administered via alternate means, such as directly into the stomach or via a central line. Nurses must be skilled in identifying, implementing, and evaluating therapeutic diets of all types across a person's life span and in both acute and chronic settings.

Standard Dietary Recommendations

Good nutrition is essential to healthy living. A healthy diet is key to obtaining optimal nutrition. Holistic nursing care includes routinely assessing a patient's nutritional status and providing the patient with sound instruction and coaching regarding their dietary needs for optimal nutrition intake. This should occur in all patient care settings. Whether the patient maintains a healthy lifestyle, partakes in unhealthy dietary habits, or has a chronic illness that requires a specialized diet, nutritional health promotion must be made available to all patients. It is essential that nurses understand nutritional principles and be skilled in teaching healthy dietary habits. This section reviews the standards for a healthy diet and discusses MyPlate, an eating strategy designed by the Center for Nutrition Policy and Promotion at the USDA to simplify and standardize dietary eating patterns. Food labels and food safety concerns are also discussed.

Standards for a Healthy Diet

A healthy diet is one that meets the daily recommended intake for macronutrients and micronutrients. Based on the Healthy Eating Index, the USDA recommends the following pattern for dietary intake:

- carbohydrates: 50 to 60 percent of calories per day with less than 10 percent added sugars
- fat: 20 to 30 percent of calories per day with less than 10 percent saturated fat
- protein: 10 to 20 percent of calories per day
- fiber: 25 grams per day
- fluids: 2.5 liters per day

The USDA recommends daily allowances for sodium, calcium, and vitamins D and B12 as well. A healthy diet must take into consideration individual caloric needs. Caloric needs are based on biological sex, age, and activity level. Some diets require strict adherence to the USDA recommendations, including calorie counting; however, the average patient will benefit from teaching related to general principles. Here are some general guidelines for healthy eating:

- Eat a variety of foods, including plenty of vegetables, fruits, and whole grains.
- Choose healthy proteins such as lean meats, fish, poultry, low-fat dairy products, and legumes.
- Drink plenty of water.
- Limit salt, alcohol, saturated and trans fats, and added sugar.
- Eat whole foods as much as possible and avoid highly processed foods.

A healthy diet prioritizes the consumption of sufficient amounts of vegetables and fruits on a daily basis. Vegetables and fruits should be eaten whole whenever possible. There are different categories of vegetables: dark green, red and orange, beans, nuts and seeds (legumes), and starches such as potatoes and cassava. Fruits may be fresh or frozen, canned, or dried. It is best to limit fruit juices, which may be high in calories.

Whole grains are an important part of a healthy diet; they include products made from wheat, rice, or oats that have not been refined. Refined grains, such as white rice and white flour, are grain kernels that have been processed to remove the bran and germ covering of the grain. This refining process removes important nutrients, such as fiber, iron, and vitamins. Whole grains use the entire grain kernel and are more nutritious than refined grains.

Foods that are high in protein include animal products such as seafood, beef, poultry, and eggs, as well as plant-based foods such as beans, peas, seeds, and nuts. Protein choices should be lean and varied. Dairy is a good source of protein, vitamins, and minerals, but low-fat versions of milk, yogurt, and cheese are typically healthier choices. Fats should be limited to 20 to 30 percent of calories, with strict limits on saturated fats. Oils are liquid fats that provide important nutrients. Oils are classified as unsaturated, polyunsaturated, or saturated. A healthy diet will include unsaturated or polyunsaturated fats and limit saturated fats.

Dietary teaching for everyone should focus on developing consistent eating patterns that include healthy amounts of carbohydrates, proteins, fats, and plenty of fresh water. A healthy diet should limit added sugars, saturated fats, sodium, and alcohol. Due to the variety of foods available, dietary choices can easily be adapted to meet cultural, religious, or budgetary preferences.

MyPlate

MyPlate (Figure 21.5) is a dietary tool developed by the USDA to help individuals maintain healthy eating patterns throughout life. MyPlate uses a 9-inch plate as a visual tool for meeting the USDA's general guidelines. Using the MyPlate method, vegetables and fruits make up half the plate, grains make up roughly a quarter of the plate, and proteins make up the final quarter. A serving of low-fat dairy is included as well. A personalized MyPlate plan is based on age, sex, height, weight, and activity level. The MyPlate website and MyPlate app are available to identify calorie needs and provide simple planning recommendations based on individual needs.

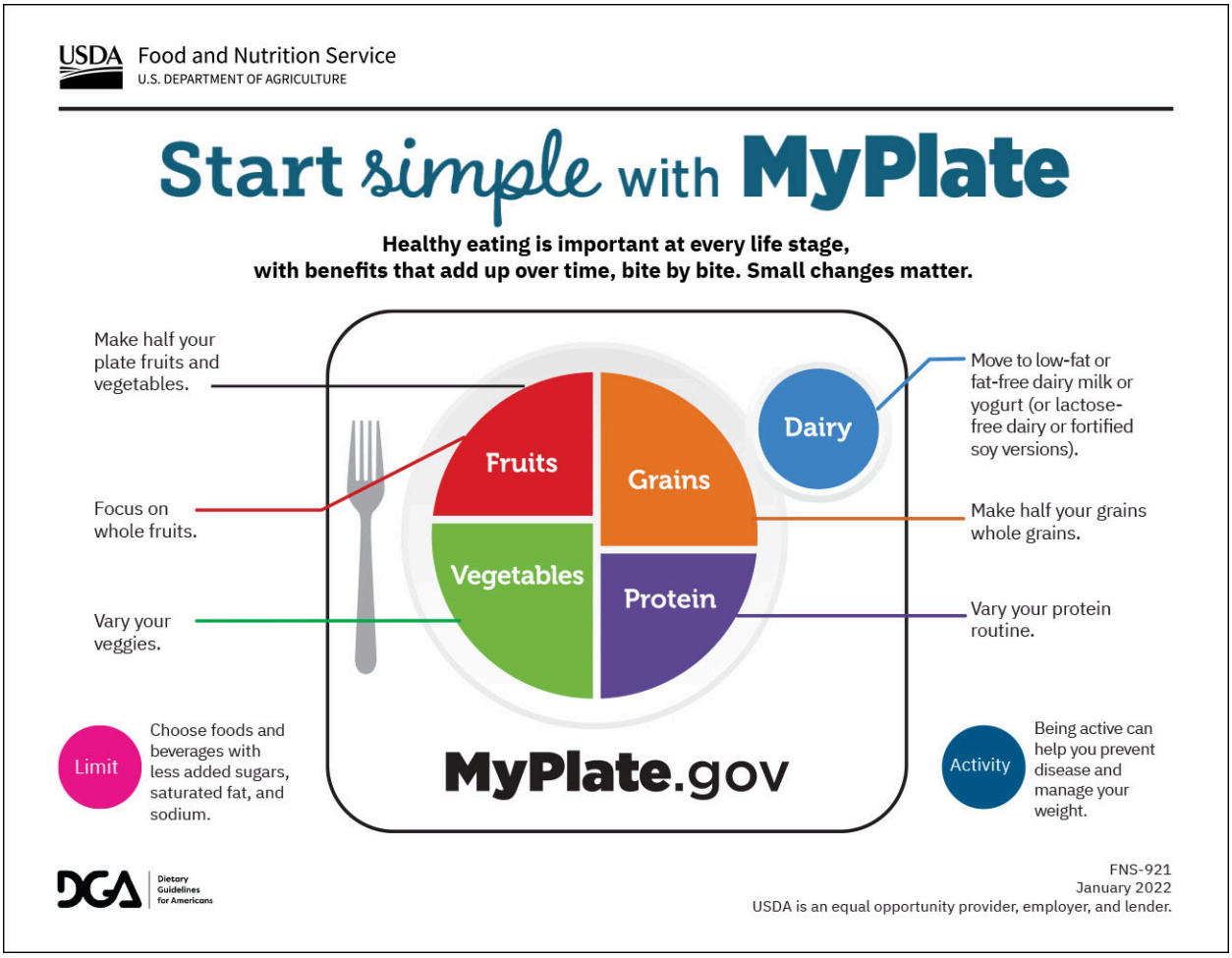

FIGURE 21.5 Through MyPlate, the USDA provides guidance on healthy eating to ensure individuals receive the RDA for each nutrient. (credit: "Start Simple with MyPlate" by U.S. Department of Agriculture, Public Domain)

LINK TO LEARNING

Go to the MyPlate website (https://openstax.org/r/77myplate2) and explore the USDA's recommendations for a nutritious diet.

Food Labeling

Scientists and government agencies have developed food labels to improve decision-making regarding nutrition intake. The USDA Dietary Guidelines provide recommended daily intakes based on DRIs for macronutrients, micronutrients, and fiber. Food labels report the recommended daily allowances for specific nutrients as a percent daily value per serving. A serving is not a regulated amount but rather a typical volume of food consumed. Food labels always identify the number of servings per container, the number of calories per serving, and the percent daily value per serving for specific nutrients.

LIFE-STAGE CONTEXT

Poor Vision and Reading Labels

The food label is a tool used to educate the public about the nutritional value of a product, but what if a person cannot read the label? It is important to remember that people often develop poor vision as they age. As nurses, we should assess our patients' vision using a Snellen chart to determine the need for a referral for further investigation by an ophthalmologist. We can educate our patients on the use of a handheld magnifier to enhance the print of

nutritional labels. We can also encourage them to use the online Myplate.org feature to predetermine which foods to purchase before shopping. Many of the healthier foods such as whole fruits, vegetables, and pure animal protein do not require food labels.

Sometimes, manufacturers will choose to include daily values per container. Labels must include, but are not limited to, the following nutrients: carbohydrates, calcium, iron, potassium, vitamin D, fat, and protein. Fats are broken down into total fat, percent saturated fat, and cholesterol. Carbohydrates are broken down into total carbohydrates, fiber, total sugar, and added sugar. In general, a serving with a percent daily value of 5 percent or less for a nutrient is considered to have a low nutrient value. A serving with a percent daily value of 20 percent or more is considered to have a high nutrient value. A law passed in 2016 required food manufacturers to update their labels. Figure 21.6 details the changes.

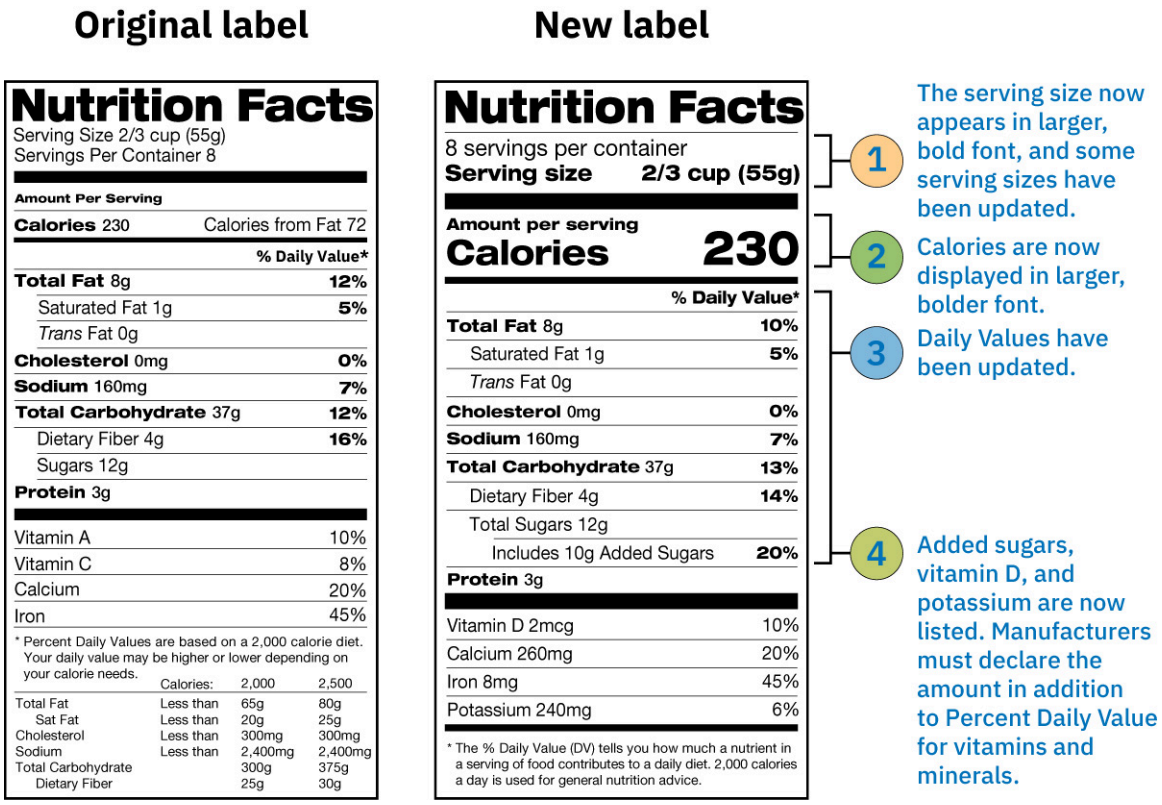

FIGURE 21.6 Updated food labels now list added sugars and potassium, clarify the meaning of percent daily value, and have been reformatted to improve readability. (credit: modification of work "What's on the Nutrition Facts Label?" by U.S. Food and Drug Administration, Public Domain)

LINK TO LEARNING

Food labels have become more sophisticated over the years, incorporating nutrition science in a way that is more relevant and easily accessible. Information on how to understand and use the Nutrition Facts label (https://openstax.org/r/77nutrifacts) is provided by the USDA.

Food Safety

Food safety is an important part of healthy living. The goal of food safety is to prevent foodborne illnesses such as bacterial infections. The following organisms are the cause of most foodborne infections: *Campylobacter*, *Salmonella*, and *Escherichia coli*. Symptoms common to these infections are nausea, vomiting, diarrhea, abdominal pain, and fever. Public health departments have foodborne surveillance programs that include a national reporting system to track outbreaks. *Salmonella*, *Shigella*, and *Listeria* are organisms commonly included in the national reporting system. *Shigella* is a highly contagious intestinal infection. *Listeria* is caused by improper processing or pasteurization and is most harmful to individuals who are pregnant, older, or immunocompromised. Surveillance

helps track infections and identify outbreaks for public health intervention.

Prevention is key to food safety and reducing the effects of foodborne illness. Whether food is being prepared in the home, a restaurant, or an institution, the same four principles of food safety apply:

1. Keep hands, utensils, and surfaces clean.
2. Separate raw meat, seafood, and eggs from other foods.
3. Cook foods to the appropriate internal temperature.
4. Chill cooked foods within two hours.

Healthy food practices are essential to good health. Nurses should reinforce these prevention strategies by encouraging good hygiene and appropriate food handling practices and providing resources for patient education.

LINK TO LEARNING

Maintaining safe practices for handling and cooking food is vital for good health. Review the recommendations for food safety (https://openstax.org/r/77foodsaferecs) provided by the CDC. What strategies would you advise for counseling patients about safe eating practices?

Therapeutic Specific Diets

Standard dietary recommendations guide individuals to make nutritious choices, maintain a healthy weight, and reduce the risk of chronic disease. The development of chronic disease affects nutritional goals and complicates nutritional intake. For example, individuals who develop diabetes or heart disease have new nutrient demands depending on the severity of the disease. Someone with diabetes may be advised to maintain stricter calorie or carbohydrate goals, while someone with heart disease will be encouraged to pursue a low-fat, low-sodium dietary pattern. Physiological conditions, such as stroke and reflux disease, can result in difficulty swallowing (dysphagia), requiring changes in food texture. Some disease states and medications can impair nutrient absorption, requiring supplementation of nutrients. Many chronic diseases include specialized diets in the treatment plan. It is important for nurses to know the differences between these diets, know why the specialized diets are ordered, and work closely with dietitians and the clinical team to ensure optimal nutrition outcomes.

Consistent Carbohydrate Diet

Carbohydrates are often misunderstood. Many people limit carbohydrates as a means of calorie control, yet both simple and complex carbohydrates are healthy and important nutrients. There are conditions under which carbohydrates must be controlled, however. An example of a diet focused on carbohydrate control is the consistent carbohydrate diet, which is recommended as a treatment for diabetes. Diabetes is a metabolic disorder affecting the utilization of glucose by the body cells. Poor glucose utilization can lead to acute acid-base disturbances and chronic effects including immune dysfunction, cardiovascular disease, and neurovascular changes. The negative effects of diabetes can best be prevented by effective blood sugar control.

The consistent carbohydrate diet maintains the recommended amount of carbohydrates per day (40 to 60 percent of the diet) but is designed to meet metabolic goals through the consumption of consistent carbohydrates at each meal. This consistency spreads out the carbohydrates over all daily meals with the goal of maintaining steady glycemic control throughout the day, avoiding hypoglycemic and hyperglycemic blood glucose swings. This mimics the healthy body's natural tendency toward glucose control and insulin release. The consistent carbohydrate diet limits the use of added sugars and encourages healthy carbohydrate choices at each meal. The emphasis is on controlling carbohydrates rather than calories. This diet supports healthy dietary patterns for all individuals, encouraging regular consumption of whole grains, whole fruits and vegetables, and low-fat dairy products, and avoiding added sugars and refined and processed foods.

Fat-Restricted Diet

Twenty to 30 percent of a healthy diet should include fat, an essential, energy-dense macronutrient. Unfortunately, not all fat is considered "good" fat. In general, individuals eating a healthy diet should limit saturated fat to 10 percent of calories consumed. Most saturated fat comes from animal proteins. Because fat is associated with increased risk of obesity, heart disease, hypertension, and stroke, individual treatment plans may include fat-

restricted diets to limit risk or decrease disease progression.

Fat-restricted diets adhere to the same USDA recommendations for a healthy diet, which is to consume between 20 and 30 percent of calories as fat but limit the types of fat consumed by avoiding saturated and trans fats. Saturated fat is typically solid at room temperature and is high in cholesterol. High-fat meats, butter, whole milk products, and coconut oil are common saturated fats. Trans fats are artificially produced by a process called hydrogenation. Partially hydrogenated fats are found in processed foods such as cookies, crackers, and margarine spreads. For patients with heart disease or at risk for developing heart disease, the American Heart Association recommends eliminating trans fats and limiting saturated fats to 5 to 6 percent of calories consumed, which is significantly lower than the dietary standard of 10 percent. Substituting more monounsaturated and polyunsaturated fats, such as canola, olive, and corn oils, is a healthy way to obtain needed fat in the diet while reducing the risk associated with "bad" fats.

High-Fiber Diet

Dietary fiber is a type of carbohydrate that adds bulk to aid in digestion. Fiber is found in plant foods and is categorized as soluble or insoluble. A high-fiber diet is recommended for most individuals, as it improves digestive health, aids in weight control, and reduces the risk of colon cancer and other intestinal disorders. Foods high in fiber include whole fruits and vegetables, whole grains, and legumes. High-fiber foods are known to decrease risk of gastrointestinal disorders, cardiovascular disease, and many metabolic disorders and should be included in all healthy diet routines.

Low-Fiber Diet

There are a few conditions that contraindicate a high-fiber diet. Limiting the fibrous content of foods eases digestion. Medical conditions that require periods of gastrointestinal rest benefit from a short-term reduction in fiber intake. Gastrointestinal rest allows for limited stimulation and processing in the intestinal tract, and a low-fiber diet is often included in the treatment plan. Eggs, creamy nut butters, low-fiber whole grain cereals, vegetable and fruit juices, applesauce, and canned fruits and vegetables can be included in a low-fiber diet. This diet should avoid all raw or undercooked vegetables, whole grains, nuts, seeds, and fibrous meats. A low-fiber diet is often used following intestinal surgeries or radiation treatments to the abdomen. Fiber should be slowly added back into the diet as digestive health returns.

Sodium Restriction Diet

The general population should limit sodium intake to less than 2,300 mg/day. Sodium is an essential element needed for many basic physiological processes. Sodium aids in food processing as a flavor enhancer, a curing agent and preservative, and a thickening agent. It also helps regulate the moisture content of food. Because of its versatility, many processed foods are high in sodium content. Unfortunately, high sodium levels increase the risk of cardiovascular disease and hypertension and negatively impact fluid balance within the body. Therefore, sodium-restricted diets are commonly prescribed for individuals with heart disease or at risk for heart disease and chronic fluid retention.

The first step in maintaining a low-sodium diet is to eliminate processed foods from the diet. Eating whole, natural foods keeps the diet naturally low in sodium. Next, all food labels should be carefully monitored for sodium content. Products with less than 200 mg per serving are healthy choices for this diet. Eating a diet high in fresh fruits and vegetables and fresh lean meats, reading food labels, and substituting herbs and spices for added salt are important ways to maintain a low-sodium diet and manage health risks.

Kidney Diet

The kidneys regulate fluid and electrolyte balance in the body. The kidneys are made up of nephrons, which filter the blood to produce urine. A kidney diet is prescribed when kidney function becomes chronically impaired and restricting certain nutrients is necessary to preserve kidney function. Foods high in protein, sodium, and potassium are limited in a kidney diet. Protein metabolism leads to waste products that must be filtered by the kidneys; therefore, a kidney diet will limit protein (animal or plant based) to small portions (2–3 oz). Because water follows sodium in the body, high sodium in the blood can lead to excess fluid volume and increased blood pressure. Because high blood pressure adversely impacts the function of delicate nephrons, sodium restrictions are placed to help preserve kidney function. With advanced kidney disease, phosphorous and potassium are also restricted. While most people on a kidney diet should have 2,000 mL intake of fluid daily, in advanced disease fluid may be restricted

even further based on individual need. Routine lab work is required to monitor kidney function, fluid status, and electrolytes.

High-Calorie, High-Protein Diet

A high-calorie, high-protein diet may be prescribed when there is a need for extra nutrition to aid healing. Individuals with extensive burns or poor healing wounds may be placed on a diet rich in quality proteins, providing needed energy and nutrients to speed healing and tissue repair. This diet minimizes carbohydrate intake and increases protein intake. Proteins with high amounts of saturated fats should be avoided. Egg whites, fish, fowl, dairy, and legumes are excellent protein choices. Avocados, cheese, nuts, and dried fruit make excellent calorie-dense snack choices. Weight trends must be closely monitored; also, because high protein levels can negatively impact kidney function, kidney labs must be routinely followed.

Consistency Modification Diets

Some diets are designed to alter the texture and consistency of foods rather than the nutritional content. Anatomical abnormalities, such as cleft palates, may prevent normal mastication. Neurological dysfunction can impede swallow reflexes. Gastroesophageal reflux disease can cause esophageal strictures that can cause dysphagia (difficulty swallowing). These conditions often require changes in food texture to improve nutritional access and decrease the risk of aspiration of food particles into the lungs. Typically, a speech pathologist will make recommendations to the clinical team regarding the need for modified diets based on the results of swallow studies. Nurses must collaborate with the whole clinical team, as they are responsible for managing the dietary intake of patients on modified diets. It is essential to understand, maintain, and monitor outcomes for all patients on modified diets.

Liquid Diet

Liquid diets are used to meet short-term clinical goals. Liquids are classified by the consistency of the fluid. Clear liquids melt to a transparent fluid that contains no pulp. A full liquid is a fluid that contains sufficient residue but still maintains a fluid form. Sometimes the consistency of liquids is restricted based on viscosity. Liquid diets are implemented for a variety of reasons and are often an essential part of the treatment plan.

Clear Liquid

A clear liquid diet is often used as short-term treatment with specific clinical goals. Clear liquids are necessary before and after certain medical procedures (including after surgery) and for patients who need to rest their bowels or replace fluid and electrolytes, for example, due to severe diarrhea. This is not a diet that can be maintained long term because it has little nutritional value. A clear liquid diet includes transparent liquids with minimal residue. This includes broths, tea, clear juices, clear gelatin, popsicles, and sport drinks. The liquids cannot contain any pulp or substance.

Clear liquids can be thickened to improve the consistency for individuals who aspirate on thin liquids. A thickening agent is added to the clear liquid to increase the viscosity, allowing for the thickened liquids to move more slowly and improve swallowing. The viscosity can be varied as needed. Common consistencies include nectar thick, honey thick, or pudding thick. Nurses often collaborate with speech pathologists when thickened liquids are being considered.

Full Liquid

A full liquid diet contains residue and is not transparent. It includes foods that become liquid at room temperature. While it contains a sufficient amount of nutrition, it can be difficult to meet daily nutritional needs and should only be used short term. Full liquid diets include cream soups, ice cream, pudding, and juices with pulp. A full liquid diet is part of the treatment plan when restarting oral feeding following a period of enteral or parenteral feeding or for short-term care when a patient is unable to tolerate a mechanical soft diet.

Soft Diets

Soft diets are diets in which the consistency and texture of the food are manipulated to improve swallowing or digestion. These diets typically contain lower fiber (less than 2 grams per serving) and a soft texture. They exclude fibrous meats, raw vegetables and fruits, beans, shellfish, and whole grains. The texture is dependent on the specific impairment. Soft diets are often used for patients with some degree of dysphagia or for postsurgical care.

Mechanical Soft

A mechanical soft diet is most often used with individuals who have a chewing or swallowing deficit. This is commonly seen in patients with dysphagia or dental impairment. The food is processed to a soft texture. Vegetables and meats should be tender, well cooked, and chopped or ground to the texture of mashed potatoes. Eggs, white rice and pasta, applesauce, and dairy products work well in a mechanical soft diet. Teaching patients to chew slowly and thoroughly and to ingest frequent small meals is helpful.

Pureed Diet

Pureed diets are processed to a smooth liquid consistency. Unlike a full liquid diet, pureed foods can come from a variety of sources, though it is best to avoid nuts and raw fruits and vegetables. It is best to puree foods separately. A pureed diet is prescribed for patients with an inability to chew and for some types of dysphagia. It is typically used for a short-term period following acute illness or injury but may be used for the long term when dysphagia cannot be resolved or when frailty or dementia limit nutritional intake at the end of life.

Enteral Nutrition

An alternate form of nutrition, **enteral nutrition**, utilizes a tube or catheter for administration. Enteral feedings are liquid and come in a variety of formulas to meet specific needs. These feedings are prescribed for individuals who have lost the ability to ingest food orally but who otherwise have a functioning digestive tract, capable of absorption and digestion of nutrients. Enteral nutrition typically has two routes of administration: nasogastric (NG) tube and percutaneous enteral gastrostomy (PEG) tube. Care of the patient on enteral feedings requires the expertise of an interdisciplinary team. Nurses are integral members of the enteral nutrition team and must be skilled in the administration, management, and evaluation of nutritional status when enteral nutrition is prescribed. Figure 21.7 shows the different access points for enteral tubes.

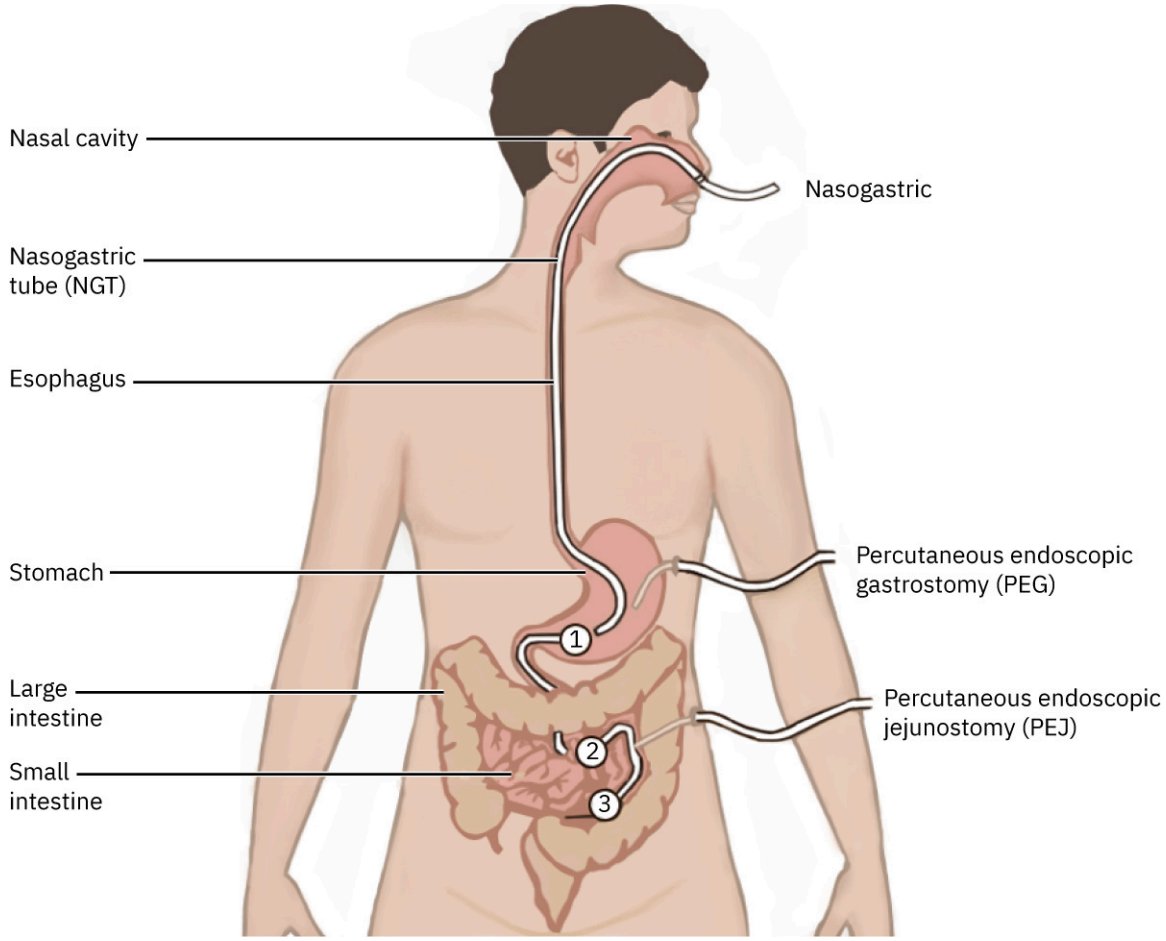

FIGURE 21.7 An enteral tube can access the digestive system via the nose or the abdomen. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Nasogastric and Orogastric Tubes

NG tubes are sometimes placed when food cannot be safely ingested. They are utilized for the short term only, typically less than four weeks. The NG tube is a single- or double-lumen tube that is passed through the nares, pharynx, and esophagus and into the stomach; it can be used for suctioning stomach contents and administering medications in addition to providing enteral nutrition. Orogastric (OG) tubes work in the same manner except they are inserted through the mouth into the esophagus and then into the stomach. OG tubes are typically used with mechanically intubated and sedated patients and should never be used in conscious patients because they can induce a gag reflex and cause vomiting.

Percutaneous Enteral Gastrostomy Tube

A PEG tube is placed directly through the abdominal wall via endoscopy. The PEG tube is placed in the stomach for direct administration of formula feeds and medications. In some situations, the tube can be advanced through the gastric pouch into the proximal part of the small intestine (jejunostomy). PEG tubes and jejunostomies are utilized when alternative nutrition is needed long term. PEG tubes may also be used when there is an obstruction to the esophagus, or the esophagus has been removed. Percutaneous endoscopic jejunostomy (PEJ) tubes are inserted through the abdominal wall directly into the jejunum, bypassing the esophagus and stomach. PEJ tubes are used when all or part of the stomach has been removed or if the provider determines PEJ placement would best suit the patient's needs.

Nursing Considerations for Administration

Nursing considerations for enteral nutrition involve management of care concerning placement and maintenance of the tube, administration of formula feeds and medications, and prevention and monitoring of complications. Care is dependent on the type of tube being used and the underlying medical conditions of the patient.

REAL RN STORIES

Communicating about NG Tube Insertion
Nurse: Rosa, BSN
Clinical setting: ICU
Years in practice: 1
Facility location: Vermont

I was caring for a patient who had been in an automobile accident where he sustained multiple injuries all over his body, including an injury to his mouth and jaw. His eyes were swollen shut, and he was rarely conscious. The last nurse attempted to insert the NG tube twice, but both times, Mr. Zhu resisted by twisting and turning his head and pulling it out with his hands. During report, my supervisor told me that in order to insert the tube, I might need to increase Mr. Zhu's sedation or request for an order for wrist restraints. I considered all of these options and decided to try another way. I gathered the supplies and approached Mr. Zhu's room. I knocked on the door and began talking to Mr. Zhu, even though he seemed unconscious and unaware of my presence. I told him who I was and why I was there, and I let him know where I was going to touch him to do his assessment and care. Then, I explained that he had an injury to his mouth and jaw. These injuries meant that he could not chew his food or have anything in his mouth for a while. In order to give him nutrition, he needed a tube from his nose to his stomach. This was better for him than any other option right now. I told him it would be uncomfortable but quick. Mr. Zhu did not move or indicate understanding of what I told him. However, when I began to insert the NG tube, it went in smoothly, and Mr. Zhu did not resist. Once I was finished, I thanked Mr. Zhu and told him that I had secured the tube so that it would not be pulled out and he would not have to have it reinserted again. I thanked him again and exited the room.

An NG tube can be placed by a nurse but requires a clinician's order. Once placed, the NG tube is anchored to the nose or cheek, and the length of the external tubing is documented. Placement must be verified via x-ray imaging prior to use. A PEG tube or jejunostomy is placed by a physician via endoscopic procedure. Placement is also verified by x-ray imaging prior to use. The placement of NG and PEG tubes must be verified prior to every subsequent use, per facility protocol. The tubing is monitored for migration every shift and with every use. If placement of the tube is in question, gastric contents can be aspirated and their pH tested for appropriate acidity. Follow-up x-rays can be ordered for reevaluation of placement if needed. Incorrect placement can lead to aspiration or perforation.

The registered dietitian determines the type of formula needed following patient assessment. The nurse administers the enteral feeding as prescribed. Enteral nutrition can be administered via bolus or pump with a set volume and rate of administration. Free water flushes are commonly administered prior to and following administration or in tandem with an enteral feeding pump. Tubing should be assessed for migration and obstructions with every formula feed. The nurse should monitor for leakage and skin breakdown. The tubing should be cleansed routinely according to facility protocol, typically using water or saline and soft gauze. Any redness or purulent drainage should be documented and reported.

Enteral feedings are associated with complications. It is the nurse's responsibility to mitigate these types of risk:

- To reduce the risk of aspiration,
  - maintain slow, steady administration rates;
  - keep the patient's head of bed elevated 30° to 45° as tolerated;
  - monitor for migration of visible NG/OG tubing; and
  - assess for residual gastric contents and follow facility policy for rate reduction protocols.
- To reduce the risk of clogged tubing,
  - flush the tube with water every shift and prn (as needed),
  - flush tubes before and after administration of feedings or medication,
  - assess for any residual gastric contents and follow facility policy for rate reduction protocol, and
  - irrigate tubing per facility protocol.
- To reduce the risk of gastric distress,
  - administer feedings at room temperature;
  - maintain prescribed rate of administration;
  - assess placement every shift and prior to feeding or medication administration; and
  - assess for signs of gastric distress including nausea, diarrhea, abdominal pain, and distension.

Parenteral Nutrition

A form of alternative nutrition is **parenteral nutrition (PN)**, in which a nutrient formula is administered intravenously. PN has a high osmolality and causes irritation to veins, so it should always be administered through a central venous catheter. A central venous catheter provides intravenous access directly to the vena cava, which empties into the heart. PN is reserved for individuals who do not have a functional gastrointestinal tract. This includes children with congenital gastrointestinal malformations, individuals with severe ulcerative colitis or bowel obstruction, and those who are critically ill with organ failure. The formula is composed of macronutrients and micronutrients. The three major macronutrients are dextrose (a form of glucose), proteins, and fat (lipid) emulsions. Vitamins, trace minerals, and electrolytes are also added. There are two types of PN: peripheral parenteral nutrition (PPN) and total parenteral nutrition (TPN).

Types of Parenteral Nutrition

PN requires central venous access. A central venous catheter is inserted in the jugular or subclavian vein and terminates in the vena cava. Central lines can be tunneled for long-term use (months to years) or nontunneled for intermittent use. Peripherally inserted central catheter (PICC) lines are long catheters inserted through a vein in the arm. Commonly, the basilic vein is used, terminating in the superior vena cava. PICC lines are used for intermediate use, typically weeks to months. Standards of care must be followed to reduce complication rates and improve patient outcomes. Policies regarding the care and use of central lines should follow facility protocols.

Peripheral Parenteral Nutrition

PPN is administered through a PICC line using a pump. PPN is intended for short-term use, typically less than ten days. The peripheral insertion reduces risk and irritation by limiting osmolality, which can lead to higher volume per feeding. Care of the PICC line should follow standard guidelines and facility protocols.

Total Parenteral Nutrition

TPN is administered through a central venous catheter. TPN is administered when the gastrointestinal tract is not functional or when the patient needs to rest their bowels. Energy and nutrient needs are calculated based on individual need and body weight. Nutrients include amino acids, fatty acids, vitamins, minerals, and electrolytes. Carbohydrates are provided as dextrose. Lipid emulsions are often administered separately. In recent years, the use

of three-in-one admixtures, which are composed of dextrose, proteins, and lipid emulsions, has improved patient care by streamlining TPN administration and reducing complications.

TPN is administered through a central line into the vena cava of the heart for long-term access. Close monitoring is required whenever a patient is receiving TPN. Weight, intake and output, and blood glucose must be monitored carefully. Bloodwork must be evaluated and documented to follow trends involving complete blood count, electrolytes and blood urea nitrogen (BUN), prealbumin, and albumin. Complications associated with TPN include central line infections, fluid volume overload, glucose and electrolyte disturbances, and liver and gallbladder dysfunction.

Nursing Considerations for Administration

Nursing considerations related to PN include catheter care, administration of parenteral nutrition (PN), preventing and responding to complications, and ongoing assessment of nutritional status. Nurses should follow these guidelines for central line care and administration of PN:

- PICC dressings should be changed every seventy-two hours using sterile technique.
- PN should be administered through a dedicated lumen.
- Parenteral tubing should be changed every twenty-four hours.
- The PN label should be verified against the documented order.

Complications associated with PN include central line infections, sepsis, poor blood sugar control, hepatic dysfunction, and fluid and electrolyte imbalance. Nursing interventions should be geared toward prevention:

- Maintain strict sterile technique for central line care.
- Monitor vital signs routinely.
- Monitor blood sugar and administer insulin per protocol.
- Assess for fluid imbalance.
- Monitor labs for trends involving electrolytes, kidney, and liver function.

21.4 Nutritional Assessment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe steps of the nursing assessment for nutritional status
- Understand diagnostic testing for nutritional assessment
- Recall conditions causing imbalanced nutritional status

Nutritional assessment is an important skill in nursing. The assessment begins with the gathering of subjective data, focusing on individual lifestyle behaviors and underlying medical conditions. A thorough health history is vital. The nurse must also collect physical cues that help determine overall nutritional status and trends. These include anthropometric measures such as BMI and growth charts. Weight trends are vitally important, as are underlying conditions that affect the digestion, absorption, and metabolism of nutrients. Lab work helps confirm and prioritize nutritional concerns and hydration status. Last, the results from pertinent diagnostic tests, such as swallow studies and x-rays, should be reviewed and recorded. Once all data are collected, the nurse can analyze both subjective and objective cues and develop a prioritized plan of care that is individualized for the patient.

This section describes the steps of a nutrition assessment and discusses specific medical conditions associated with impaired nutrition. Because many conditions impact nutritional status, it is important for the nurse to understand the physiological adaptation that occurs with a given health condition and anticipate the nutritional needs required to restore homeostasis. Having a sound understanding of how nutrition impacts the human body is an essential aspect of nursing care.

Nursing Assessment for Nutritional Status

A thorough nursing nutrition assessment is foundational to the holistic care of all patients. A nutrition assessment includes subjective data, including demographic and sociocultural data, lifestyle cues, and medical history. It also includes objective data gathered from physical exams, labs, and diagnostic tests. The physical exam should focus on data from anthropometric measures (such as height, weight, and BMI), skin integrity, and gastrointestinal and

urinary functions. Lab trends must be noted and results from pertinent diagnostic tests documented if indicated. When conducting a nutrition assessment, it is vital to know the overall state of health, including all chronic diseases, and to allow this holistic understanding to guide critical thinking, especially those disease states that promote the greatest risk in association with malnutrition or chronic disease progression.

Collecting Subjective Data

A thorough health history provides needed subjective data to guide nutritional planning and intervention. A health history begins with demographic data, which are important when considering nutritional status as nutrient needs differ based on biological sex and age. Sociocultural factors have a significant effect on access and food choice. The patient's religious preference, ethnicity and culture, educational level, occupation, and geographic location should all be documented as they impact overall health and nutritional status. Support systems, including food assistance programs and weight control support groups, should be reviewed.

A thorough discussion of dietary patterns and lifestyle behaviors is essential. Dietary patterns can be assessed using a variety of patient-friendly tools. A twenty-four-hour food recall is a simple measure to gauge usual daily food intake. A three-day food tracker is an even better measure, as it helps identify eating patterns and trends. There are a variety of apps and website food trackers that provide a structured way to document and review intake over time. The health history should reflect usual dietary patterns and include information related to food access or food insecurity, food shopping trends, utilization of food assistance programs, and attitudes toward cooking and food preparation.

In addition to dietary patterns, lifestyle behaviors must be reviewed and documented. Assessment of activity levels or levels of assistance needed with activities of daily living is vital to understanding caloric and nutritional needs as well as barriers to care. Utilization of health tracker apps with activity logs and stress level recordings can be insightful. Document any sensory impairment (vision or taste) that impacts activity or affects the ability to shop or cook safely. Ask about smoking history and use of alcohol or illicit drugs.

Identify past medical history that impacts nutritional health. Ask about weight trends and whether there is a history of dieting, utilization of weight loss programs, or bariatric surgery. Medical conditions to note include gastrointestinal disease, food allergies, history of diabetes, heart disease, liver disease, history of chemotherapy or radiation, and mental illness. Document if there is a family history of diabetes, heart disease, or obesity. Review all medications and discuss any medication effects on nutrition or hydration status.

Last, allow time to discuss the patient's current health concerns. These include unintentional weight loss, weight gain, change in appetite, difficulty chewing or swallowing, nausea, vomiting, stool changes, and abdominal pain. Discuss current life stressors (divorce, unemployment, recent hospitalization) that present as obstacles to a healthy lifestyle. Explore attitudes toward healthy eating and assist the patient in identifying barriers to healthy living. All documentation must be accurate and professional, devoid of any bias or personal opinion.

Collecting Objective Data

The physical exam begins with assessment of vital signs, height, and weight. Compare findings to those previously documented, if available. Complete a head-to-toe assessment, emphasizing systems that relate to nutritional status (Table 21.7).

Category	Areas to Assess
General	Body frame, hygiene, coordination, adequate vision and hearing, dentition
Mentation	Orientation, alertness, ability to converse and follow commands, mood stability
Skin	Turgor, pallor, cyanosis, nonhealing wounds, bruising or bleeding, edema, condition of hair and nails
Gastrointestinal/ genitourinary	Abdominal girth, abdominal distension, epigastric or abdominal tenderness, ascites, bladder distension, urine output

TABLE 21.7 Objective Data for a Nutritional Status Assessment

Category	Areas to Assess
Musculoskeletal	Muscle tone and strength, gait
Anthropometric measures	BMI, waist circumference, skinfold test
Other	Presence of enteral tubes, twenty-four-hour intake and output

TABLE 21.7 **Objective Data for a Nutritional Status Assessment**

Diagnostic Tests for Nutritional Status

There are several diagnostic procedures specific to nutrition. Imaging studies include routine x-rays used to verify placement of NG and PEG tubes. Computed tomography scans can identify anatomical anomalies, such as intestinal blockages and tumors. A dual-energy x-ray absorptiometry (DEXA) scan is a bone density test performed under low-dose x-ray. The DEXA is a measure of calcium and other mineral deposits that provide a relative measure of bone strength. A **modified barium swallow study (MBSS)** views the anatomical and swallowing physiology of a bolus of food under video fluoroscopy. The MBSS allows for real-time evaluation of swallowing function and safety under the guidance of a speech-language pathologist.

An **esophagogastroduodenoscopy (EGD)** is an invasive procedure performed under anesthesia. During an EGD, an endoscopic tube is advanced through the pharynx, esophagus, and gastric pouch to check for anomalies such as esophageal strictures and peptic ulcers. In some cases, an upper-gastrointestinal endoscopy can advance into the upper jejunum and obtain a biopsy of the intestinal wall to identify celiac disease.

Laboratory Tests

Diagnostic and lab work results can provide important clues about a patient's overall nutritional status and should be used in conjunction with a thorough subjective and objective assessment to provide an accurate picture of the patient's overall health status. Common lab tests include hemoglobin (hgb), hematocrit (HCT), white blood cell (WBC) count, albumin, prealbumin, and transferrin.

Anemia is a medical condition diagnosed by low hemoglobin levels. Hemoglobin is important for oxygen transport throughout the body. Anemia can be caused acutely by hemorrhage, but it is often the result of chronic iron deficiency, vitamin B12 deficiency, or folate deficiency. Iron supplements, vitamin B12 injections, folate supplements, and increased iron or folate intake in the diet can help increase hemoglobin levels.

Albumin and prealbumin are proteins in the bloodstream. They maintain oncotic pressure so that fluid does not leak out of blood vessels into the extravascular space. The most abundant protein circulating in the blood is **albumin**, which is used as a marker for protein status. Albumin and prealbumin levels are used as markers of malnutrition, but these levels can also be affected by medical conditions such as liver failure, kidney failure, inflammation, and zinc deficiency. Low albumin levels can indicate prolonged protein deficiency intake over several weeks, whereas prealbumin levels reflect protein intake over the previous few weeks. For this reason, prealbumin is often used to monitor the effectiveness of PN therapy.

Transferrin is a protein required for iron transport on red blood cells. Transferrin levels increase during iron deficiency anemia and decrease with kidney or liver failure and infection.

A patient's amount of muscle wasting due to malnutrition is measured by a twenty-four-hour urine creatinine level (Hood, 2020). If insufficient calories are consumed, the body begins to break down its own tissues in a process called catabolism. BUN and creatinine are released as a by-product. A twenty-four-hour urine collection measures these by-product levels to assess the degree of catabolism occurring.

WBCs will decrease with malnourishment, specifically with protein and vitamins C, D, and E and B-complex deficiencies. Low WBCs place the patient at risk for infection because adequate WBCs are necessary for a fully functioning immune system. See Table 21.8 for a description of selected lab values associated with nutritional status. As always, refer to facility lab reference ranges when providing patient care.

Lab	Normal Range	Nursing Considerations*
Hemoglobin (hgb)	Females: 12–16 g/dL Males: 14–17.4 g/dL	Hemoglobin measures the oxygen-carrying capacity of blood. Decreased levels occur due to hemorrhage or deficiencies in iron, folate, or vitamin B12. **10–14: mild anemia** **6–10: moderate anemia** **<6: severe anemia**
Hematocrit (HCT)	37–50 percent	Hematocrit is normally three times the patient's hemoglobin level during normal fluid status. Increased levels occur with dehydration, and decreased levels occur with fluid overload or hemorrhage.
White blood cells (WBCs)	5,000–10,000 mm^3	Increased levels occur due to infection. Decreased levels occur due to prolonged stress, poor nutrition, and vitamins C, D, and E and B-complex deficiencies. **<4,000: at risk for infection or sepsis** **>11,000: infection present**
Magnesium	1.6–2.6 mEq/L	Decreased level with poor nutrition or alcohol misuse. Increased levels due to kidney dysfunction. Critical values can cause cardiac complications: **<1.2 mg/dL or >4.9 mg/dL**
Albumin	3.4–5.4 g/dL	Increased with dehydration. Decreased level due to zinc deficiency, corticosteroid use, protein deficiency over several weeks, or conditions resulting in muscle wasting/muscle loss.
Prealbumin	15–36 mg/dL	Increased levels with corticosteroid or contraceptive use. Decreased levels due to inflammation, poor immunity, protein depletion over a few weeks.
Transferrin	250–450 mcg/dL	Increased levels due to dehydration and iron deficiency. Decreased levels due to anemia; vitamin B12, folate, and zinc deficiency; protein depletion; and conditions resulting in muscle wasting/muscle loss.
24-hour urine creatinine	Males: 0.8–1.8 g/24 hours Females: 0.6–1.6 g/24 hour	Increased levels with kidney disease and muscle breakdown. Decreased levels with progressive malnutrition as muscles atrophy.

*Bolded items are critical conditions and require immediate healthcare provider notification.

TABLE 21.8 Selected Lab Values Associated with Nutritional Status

Conditions Causing Imbalanced Nutritional Status

Every cell in the body is affected by nutrition. Nutrient deficiencies and excesses affect every body system. Some disease states cause nutritional imbalances, while others result from a nutritional imbalance. Disease states that affect metabolic rates result in significant physiological compromise and increase the risk of developing chronic disease. Infections, inflammatory disease, metabolic conditions, and eating disorders are all medical conditions that have a direct effect on nutritional status. This section reviews the effects that infections, inflammatory disease, metabolic conditions, and eating disorders have on nutritional status.

Infections

Infectious organisms in the body increase demand for energy. Healing from an infectious disease occurs when metabolic conditions allow the immune system to control and limit the effects of the disease. Healing is compromised when nutritional deficits are present, preventing immune-modulating cells from functioning properly. Foodborne organisms can cause infection when hygiene and safety standards are not followed. Viruses, bacteria, and protozoa are all organisms that can create an infectious state.

In some cases, chronic infections can develop, stressing the nutritional demands of the body. Chronic infections commonly occur in the urinary tract, in chronic wounds, and in both the upper and lower respiratory tracts. When increased nutritional demands are not met, the patient's nutritional status becomes compromised, and the body is unable to overcome the infectious agent. Chronic infectious states often benefit from a high-calorie, high-protein diet to meet elevated energy demands.

Inflammatory Diseases

Inflammatory disease occurs when the body's natural defenses are hyperreactive and cause damage to tissues. Inflammation is caused by organisms, injuries, and toxins in the environment. Inflammatory disease affects every body system and is a driving force for malnutrition. Inflammation can decrease appetite and lead to decreased dietary intake and anorexia. It can cause catabolic metabolism of muscle tissue, reduce insulin sensitivity of body cells, and impair nutrient absorption. Food allergies, Crohn disease, and celiac disease are all associated with inflammatory processes. Many chronic illness states have an inflammatory component. This often presents as low-grade inflammation and leads to unintentional weight loss, decreased muscle mass, and poor quality of life. Heart disease, chronic obstructive pulmonary disease, and rheumatoid arthritis are examples of chronic disease states associated with low-grade inflammation.

Metabolic Conditions

Metabolic conditions are multifocal and associated with digestive dysfunction, malabsorption, and poor utilization of nutrients. Disorders that result in poor digestion include cognitive dysfunction, dysphagia, and mental illness that leads to poor dietary intake. Acute gastrointestinal distress (nausea, vomiting, and diarrhea) can interfere with intake and digestion. Poor digestion and decreased intake over time lead to malnutrition. Some disorders affect the absorption of nutrients within the small intestines. Bowel obstructions, diabetes, pernicious anemia, cystic fibrosis, and celiac disease cause malabsorption leading to nutrient deficits. Some diseases affect the metabolic rate, such as thyroid disease. An overactive thyroid can lead to a hypermetabolic state, while an underactive thyroid can lead to a hypoactive metabolic rate. It is important to review every patient's medical history and identify medical conditions and treatments that have a direct effect on nutritional status.

Metabolic abnormalities can be risk factors for heart disease, diabetes, and stroke. Metabolic syndrome is a cluster of conditions known to increase risk of chronic disease when presented together; it is characterized by abdominal obesity, elevated lipid levels, elevated blood glucose, and elevated blood pressure. When three of these four symptoms are present, the individual is considered to be at metabolic risk. Fortunately, metabolic syndrome can be reversed with consistent lifestyle changes, including healthy dietary patterns of eating and increased physical activity, thereby decreasing overall health risks.

Eating Disorders

Eating disorders are often associated with maladaptive coping skills. Anorexia nervosa and bulimia are two diseases that have direct effects on patient nutrition. Patients who have anorexia nervosa are very focused on their weight to the point that they obsess about their diet. They will appear underweight and have great fear about gaining weight. Bulimic patients will eat in secret and then engage in self-induced vomiting to get rid of the food they ate. It is a cycle of secret binging, shame, and then self-induced vomiting called purging. It is episodic but recurrent. Patients with bulimia typically maintain weight but experience dental caries due to loss of tooth enamel. They also have menstrual irregularities and electrolyte imbalances as a result of persistent purging and laxative overuse. Both anorexia and bulimia can have severe consequences on the patient's physical, mental health, and self-image.

LIFE-STAGE CONTEXT

Eating Disorders in Young Adults

While eating disorders can affect all people, they are more common in females between the ages of 12 and 35 years. Research has indicated that eating disorders among teens have doubled since the pandemic. Increased social media use has been linked to higher incidences of body dysmorphia and eating disorders in adolescents and young adults (Harriger et al., 2022).

Eating disorders can lead to physiological complications and are often accompanied by anxiety and guilt. Anorexia nervosa is a life-threatening body image disturbance that results in a state of emaciation. Anorexia is often associated with control and an intense fear of becoming obese. Bulimia is a compulsive eating disorder associated with binge eating followed by purging. It is episodic but recurrent. Patients with bulimia typically maintain weight but have dental caries due to loss of tooth enamel, menstrual irregularities, and electrolyte disturbances as a result of persistent purging (forced vomiting and laxative overuse).

Eating disorders are complex and require the nurse to consider both physiological and psychological stressors in the body. Nursing care is prioritized according to safety needs and risk reduction. Maladaptive eating patterns often accompany stress, anxiety, and depression. It is important to analyze underlying stressors and utilize physiological and psychological interventions when caring for all patients with eating disorders.

Summary

21.1 Nutritional Concepts

Good nutrition includes ingestion of quality macronutrients such as carbohydrates, proteins, and fats. These provide adequate calories to meet the body's daily energy needs. Dietary patterns also need to include adequate water regulation to maintain hydration balance and sufficient quantities of micronutrients, like vitamins and minerals, to meet metabolic demands. Weight and BMI trends help track growth and development and identify early risks to nutritional health. Understanding the role of nutrition in the daily health and wellness needs of people across their life span is key to the achievement of optimal nutrition and health.

21.2 Factors Affecting Nutrition

Physiological and psychological factors significantly affect nutritional status. Physiological factors affecting nutrition include basic human factors such as age, developmental stage and activity level, biological sex, physical health, and the presence of chronic disease, pregnancy, or lactation. Physiological factors also include environmental factors such as socioeconomic status, food insecurity, and lifestyle behaviors. Psychosocial factors are highly influential because mealtimes in all cultures tend to be social events, giving food meaning beyond basic nutritional need. This meaning can be positive, connected with celebrations and traditions, but it can also result in emotional eating that leads to negative health outcomes. It is important to take a holistic view when analyzing patient cues related to nutritional status.

21.3 Specialized Diets

A healthy diet includes quality nutrients such as carbohydrates, proteins, fats, vitamins, and minerals, all in sufficient amounts to meet individual needs. Nutritional teaching should address food safety, food label reading, and healthy eating strategies, for example, by utilizing the MyPlate.gov tool. Specialized diets may be implemented to reduce health risks or optimize nutrition during acute or chronic illness. Common specialized diets include the consistent carbohydrate diet, restricted fat diet, low-sodium diet, and high-fiber diet. Kidney diets, low-fiber diets, and high-calorie, high-protein diets are less common but extremely useful in certain medical conditions. Some specialized diets modify the consistency of the food for improved consumption and/or digestion. These include the mechanical soft diet, pureed diets, and various liquid diets. Enteral nutrition and PN require strict nursing care to provide controlled nutritional intake via enteral tubes such as the NG, OG, and PEG or via central lines like PPN and TPN.

21.4 Nutritional Assessment

A nutrition assessment begins with a collection of subjective data, including a history of weight trends, nutrition intake, lifestyle behaviors, demographics, and past medical history. Objective data should include anthropometric measures and a focused physical assessment. Diagnostic and lab work results can provide important clues about a patient's overall nutritional status and should be used in conjunction with a thorough subjective and objective assessment to provide an accurate picture of the patient's overall health status. Common lab tests include hgb, HCT, WBC count, albumin, prealbumin, and transferrin.

Infections, inflammatory disease, metabolic conditions, and eating disorders are all medical conditions that have a direct effect on nutritional status. It is important to review every patient's medical history and identify medical conditions and treatments that have a direct effect on nutritional status. Analyzing underlying stressors and utilizing physiological and psychological interventions are important when caring for all patients with eating disorders.

Key Terms

albumin the most abundant protein circulating in the blood, with many functions within the body; used as a marker for protein status

body image perception a person has about their physical body, including any feelings associated with that perception

body mass index (BMI) a value that is calculated from an individual's height and weight to provide as measurement relative to the standards for ideal body weight

calorie a unit measure of energy

carbohydrate macronutrient used to fuel the immediate energy needs of the body
cellular respiration the breakdown of energy-rich nutrients (carbohydrates, fats, and proteins) to provide ATP, which fuels cellular functions within the body
dehydration a fluid volume deficit that occurs with inadequate water intake or excessive water loss or both
dietary reference intake (DRI) scientifically developed values for essential nutrients and other food components
enteral nutrition nutrition that is directly administered into the stomach
esophagogastroduodenoscopy (EGD) imaging study used to evaluate the esophagus, stomach, and duodenum for abnormalities such as ulcers, inflammation, or tumors
fat large, complex molecule made up of fatty acids and glycerol
food desert a geographical area where fresh produce and foodstuffs are either too expensive or unavailable
food insecurity the state of having limited access to adequate food
ideal body weight (IBW) weight at which a person maintains optimal health benefits
macronutrient nutrient consumed in large quantities to meet the body's energy needs
malnutrition an imbalance between the nutrients consumed and nutrients needed; includes both undernutrition and overnutrition and involves both macronutrients and micronutrients
metabolism the process by which substances are chemically broken down to meet the body's nutrient and energy needs
micronutrient nutrient found in small quantities within the body but still necessary for physiological functions
mineral essential to physiological processing; some are macronutrients, and some are micronutrients
modified barium swallow study (MBSS) a procedure for viewing the anatomical and swallowing physiology of a bolus of food under video fluoroscopy
parenteral nutrition (PN) nutrition delivered intravenously by a central line
protein macronutrient made up of amino acids
recommended dietary allowances (RDAs) guidelines developed by the U.S. government for consuming the nutrients that make up a healthy diet
reference daily intake (RDI) average daily intake of a population
vitamin essential micronutrient vital to biochemical regulation within the human body

Assessments

Review Questions

1. A nurse is teaching a patient with a nutritional deficit about nutrient-dense foods. What nutrient provides the most energy per gram of nutrient?
   a. carbohydrates
   b. fats
   c. protein
   d. fiber

2. A nurse is caring for an older adult patient who is dehydrated. The nurse understands that the majority of water in the human body is found where?
   a. inside the body cells
   b. in the vascular system
   c. in interstitial fluids
   d. in the urinary tract

3. A nurse is reviewing a patient's medication list and notes the patient takes vitamin D tablets once a day. What does the nurse know is true about vitamin D?
   a. found naturally in many foods
   b. found only in animal products
   c. absorbed through direct sunlight
   d. a trace mineral

4. A nurse in long-term care is reviewing charts for weight loss trends. Which patient is most at risk for developing

malnutrition?

Patient	BMI	Weight Change
Patient A	25	Gained 5 pounds in twelve months
Patient B	20	Lost 6 pounds in twelve months
Patient C	18.5	Lost 10 pounds in six months
Patient D	16	Gained 2 pounds in six months

a. Patient A
b. Patient B
c. Patient C
d. Patient D

5. A nurse is working with patients in a public health clinic and is assessing for food insecurity in a local immigrant population. What observation would be most concerning for food insecurity?
a. an immigrant woman applying for SNAP and WIC benefits
b. an immigrant man who is unable to find foods specific to the culture
c. an immigrant couple without personal transportation
d. an immigrant child who does not live near a grocery store

6. A nurse is working with a patient on implementing healthy dietary patterns. The patient decides to develop a healthy weekly menu. What response by the patient indicates understanding of the nutrition guidelines?
a. "RDA values tell me the daily intake for nutrients to guide meal planning."
b. "Proteins are the most important nutrient group."
c. "I should eat the same number of calories at every meal."
d. "I should avoid all simple carbohydrates."

7. A nurse is teaching about nutrition during pregnancy and lactation. What foods would be the healthiest option to meet nutritional goals during this time?
a. whole milk and red meat
b. rice and beans
c. eggs and low-fat dairy
d. fresh fruits and fruit juices

8. A home health nurse is visiting a patient with multiple chronic diseases. The patient is experiencing unintentional weight loss. The nurse considers the role of nutrition in chronic illness. What conditions will not lead to unintentional weight loss in patients with chronic illness?
a. conditions that interfere with nutrient absorption
b. conditions that interfere with ingestion of nutrients
c. conditions that alter the daily allowance of nutrients needed
d. conditions that decrease metabolic rate

9. A nurse is developing a program to promote healthy eating for a local community center. What nutrient should make up the largest daily percentage of intake in a healthy diet?
a. carbohydrates
b. proteins
c. fats
d. simple sugars

10. A patient is learning to read food labels to help with healthy meal planning. How can the patient identify high nutrient values?
   a. These nutrients will be listed first.
   b. The percent daily value per serving will be at least 20 percent.
   c. The per serving percentage will be at least 50 percent.
   d. These nutrients will be identified as "added."

11. A patient with a history of chronic constipation is placed on a high-fiber diet. What food or drink should the nurse recommend?
   a. vegetable juice
   b. eggs
   c. peanut butter
   d. black beans

12. Why does PN require administration through a central venous catheter?
   a. All liquid nutrients are delivered via central line.
   b. PN must be delivered quickly.
   c. PN has a high osmolality and causes vein irritation.
   d. A central line provides direct access to the gastrointestinal tract.

13. A patient has been newly diagnosed with anemia. The goal of treatment is to maintain stable hemoglobin levels. What supplement can help increase hemoglobin levels?
   a. vitamin C
   b. folate
   c. magnesium
   d. calcium

14. A nurse is taking a health history. The patient reports that they have a chronic cough, smoke one pack per week, have food allergies, and have a history of dieting. Which has the most impact on nutritional status?
   a. has a chronic cough
   b. smokes one pack per week
   c. has food allergies
   d. has a history of dieting

15. A nurse is discussing the relationship between metabolic syndrome and chronic disease. What activity would help reverse metabolic syndrome?
   a. increase physical activity
   b. increase lipid levels
   c. maintain a high-protein diet
   d. drink 2 L of water daily

Check Your Understanding Questions

1. Recall nutrients used for regulation in the body. What is the difference between calorie or protein deficiencies and deficiencies in vitamins and minerals?

2. Which three nutrients are considered macronutrients because the large quantities of each are needed daily to meet the body's energy needs?

3. Describe the process known as cellular respiration.

4. What role do culture, religion, and economic status play in food preferences?

5. Identify five nutrients that can be found on a food label.

6. Describe the differences between anorexia nervosa and bulimia.

Reflection Questions

1. When optimal nutrition is not achieved, malnutrition can happen. What are the negative effects of malnutrition on the body?

What Should the Nurse Do?

Mr. Curtis is a 47-year-old patient admitted to the hospital with increased weakness, fatigue, and dehydration. His skin appears dry, and tenting occurs when skin turgor is evaluated. He is currently undergoing chemotherapy treatment for multiple myeloma and has experienced weight loss of ten pounds within the last two weeks. He describes that "nothing tastes good," and he feels as if there is "a metal taste in his mouth." When he does eat small meals, he reports that he is often nauseous. The patient's serum protein level is 3.1 g/dL.

1. What assessment cues should the nurse recognize?
2. Based on the assessment information that has been gathered, what are some nursing interventions that can be created for Mr. Curtis?

Mr. Jones is a 67-year-old patient on the medical-surgical floor who recently underwent a bowel resection. He is post-op Day 2 and has been NPO since surgery. He has been receiving intravenous fluids but has been asking about when he can resume eating.

3. What assessments should be performed to determine if the patient's diet can be progressed?
4. What are the first steps during dietary transition from NPO status?

Mrs. Casey is a 78-year-old widow who recently had a stroke and continues to experience mild right-sided weakness. She is currently receiving physical therapy in a long-term care facility and ambulates with the assistance of a walker. Mrs. Casey confides, "I am looking forward to going home, but I will miss the three meals a day here." Her height is 5′2″ and she weighs 84 pounds. Her recent lab work results include the following: hgb 8.8 g/dL; WBC 3,500; magnesium 1.4 mg/dL; albumin 10 g/dL.

5. What is Mrs. Casey's BMI, and what does this number indicate?
6. Analyze Mrs. Casey's recent lab work, and interpret the findings.
7. Describe focused assessments the nurse should perform regarding Mrs. Casey's nutritional status.

Competency-Based Assessments

1. Using the CDC's BMI calculator (https://openstax.org/r/77BMIcalc), calculate and assess your own BMI. Develop a one-week meal plan to promote optimal nutrition based on your personal results.
2. A nurse is caring for an older adult with dysphagia. What should the nurse consider when assisting with planning meals?

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CHAPTER 22
Activity

FIGURE 22.1 Activity, movement, and the capacity to care for oneself help determine a person's functional ability. Activity and movement of any kind is beneficial, including chair yoga that incorporates gentle movements, stretches, and breathing exercises to promote flexibility, strength, and relaxation. (credit: "Yoga @ Wylam" by Birmingham Public Library/Flickr, CCBY 2.0)

CHAPTER OUTLINE

22.1 Importance of Activity, Movement, and Alignment
22.2 Factors Affecting Activity Level
22.3 Activities of Daily Living (ADLs)

INTRODUCTION What does the ability to brush your hair and get dressed have to do with the ability of human beings to move, maintain their bodily position, and be physically active? Consider the following scenario. Martina is a 75-year-old Latina female. She cared for her family and worked full time in an office job her whole life. Martina struggled with arthritis in her joints but tried not to let it bother her and did not seek treatment. She did not have time or motivation to exercise and always thought she would start after she retired. After retirement at age 65, Martina spent much time caring for her grandchildren and still did not take time to exercise. Her arthritis worsened, and she moved less and went out less often. After a stroke when she was 70, Martina could not use the right side of her body, the dominant side, for several months; she never regained full use of her right upper body. She also never fully recovered the ability to walk steadily. After several falls, she began using a wheelchair. Now she relies on home healthcare workers to assist her with activities of daily living, such as grooming and dressing.

Martina's story is not an uncommon one. Through no fault of their own, most people do not realize the complex relationship between their bodies, physical activity, and their ability to perform the essential tasks of daily living. For nurses, however, it is critical to understand all these aspects to provide high-quality education, care, and patient advocacy. This chapter explores these related issues.

22.1 Importance of Activity, Movement, and Alignment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Discuss the physiology of activity, movement, and alignment in the body
- Identify functions of activity, movement, and alignment in the body
- Explain ergonomics in patient care
- Describe exercise and its effect on the body systems

What do running, jumping, dancing, typing on a keyboard, and watching television have in common? All these activities require a complex interplay between the skeletal, muscular, and central nervous systems, which work together to hold the body upright, allow it to move, and protect it from harm. Understanding how the body is designed and how it functions enables nurses to provide care safely for themselves and their patients. It also offers a way to begin a discussion of exercise and the importance of movement for the body's functioning.

Physiology of Activity, Movement, and Alignment

Purposeful movement, or **activity** refers to walking, eating, or playing an instrument. To safely perform an activity, the body must be in proper position, or **alignment**. The physiology of activity, movement, and alignment is a complex process requiring multiple body systems to work together. For example, wiggling your fingers is a simple movement that requires the combined efforts of joints, bones, muscles, and the nervous system. The bones provide the underlying structure of the fingers, the joints allow them to bend, the muscles perform the actual action, and the nervous system controls the wiggle by sending the appropriate signals from the brain. Through this section, we will explore the physiological systems that allow for movement and alignment.

Skeletal System

The **skeletal system** consists of bones, joints, and other structures that allow for movement and perform other critical functions in the human body. It supports the body, shields organs, makes blood cells, and provides space for minerals and fat. No activity or movement can occur without the skeletal system.

The primary component of the skeletal system is **bone**, which is a hard tissue composed primarily of calcium, with other minerals such as magnesium, fluoride, and sulfates mixed in. The adult human body has 206 bones divided into five types (Figure 22.2). Each type plays a different role in activity and movement.

- Long bones, such as the femur, provide leverage.
- Short bones provide stability and support and enable limited motion.
- Flat bones protect internal organs and provide surfaces to which muscles attach.
- Sesamoid bones function as shock absorbers for tendons.
- Irregular bones protect internal organs and provide support for movement.

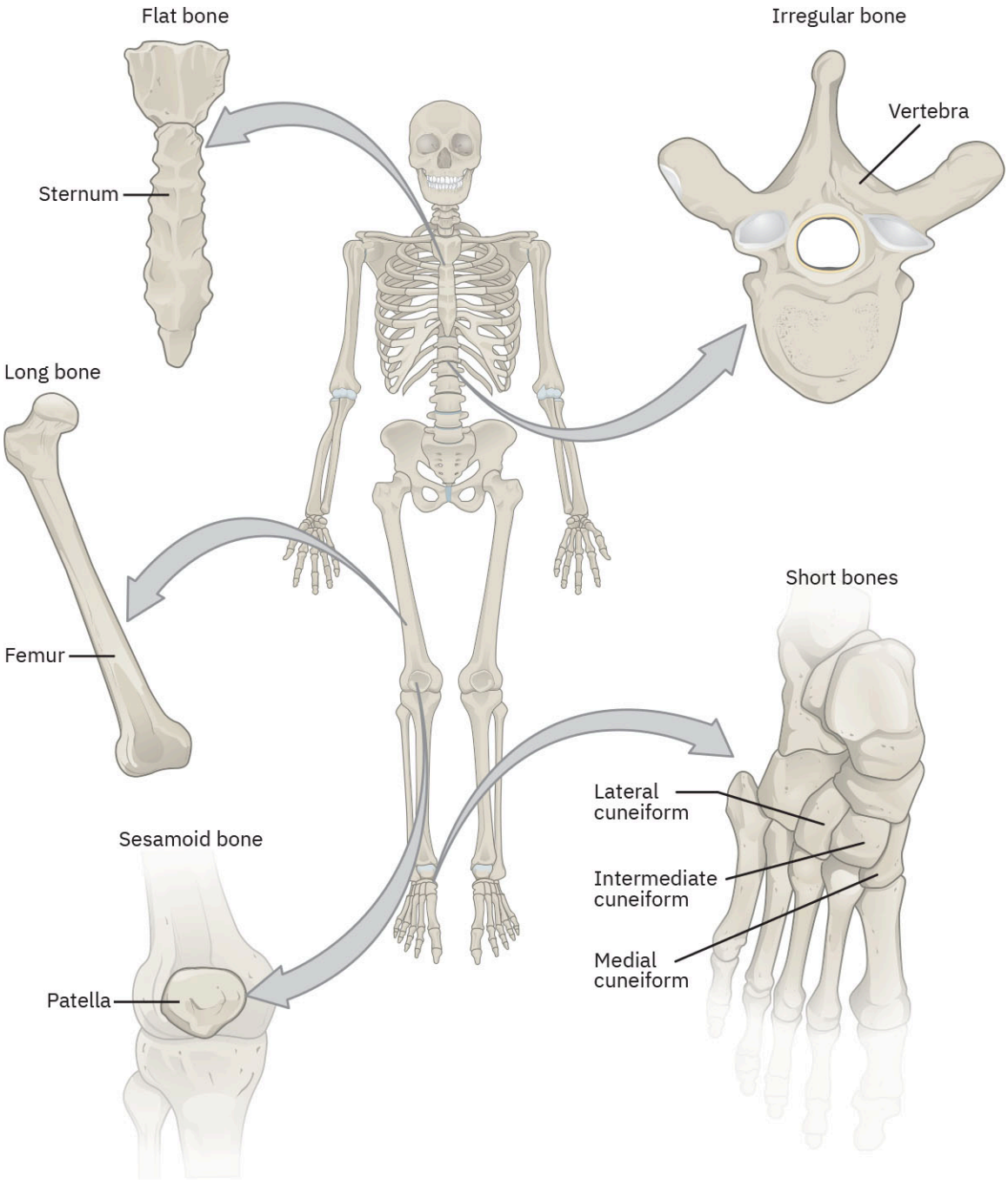


FIGURE 22.2 Bones are classified by their shape: long, short, flat, sesamoid, or irregular. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Bone surfaces come into contact at a **joint**, often allowing for movement. At the joints, bones are separated by **cartilage**, a spongy, smooth surface that decreases friction and acts as a shock absorber between bones. A tough but flexible fibrous tissue, called a **ligament**, connects bones or hold joints together. A **tendon** is a tough, flexible band of connective tissue that attaches muscles to bones, facilitating the transmission of muscle contractions and allowing for joint movement. Injury to bones, joints, cartilage, ligaments, or tendons can make movement painful or even impair the body's ability to move altogether.

Joints

The hyoid bone of the neck is the only bone in the human body not connected to other bones. All other bones articulate, or connect to each other, at joints. Joints can be classified by the amount and type of movement they allow between adjacent bones (Table 22.1).

Type of Joint	Amount of Movement	Example
Amphiarthrosis	Limited movement	Intervertebral discs between vertebrae in the spine
Biaxial joint	Type of diarthrotic joint allowing movement along two lines	Knuckle joints (where the fingers meet the palm of the hand), which allow for bending, straightening, and spreading apart of fingers
Diarthrosis	Free movement	Most joints in the arms and legs
Multiaxial joint	Type of diarthrotic joint allowing movement in multiple directions	Hip and shoulder joints, which can move and rotate in all directions
Synarthrosis	Unmovable or almost unmovable	Where the bones of the skull meet
Uniaxial joint	Type of diarthrotic joint allowing movement in a back-and-forth direction along a single line	Elbow and knee joints, which allow for bending and straightening along a single line

TABLE 22.1 **Types of Joints**

Types of Joint Movement

A diarthrotic joint is most likely a **synovial joint**. Synovial joints are the most common joints in the body; they are movable and characterized by a fluid-filled cavity in the space where bones articulate. This fluid, called **synovial fluid**, allows bones to move against each other freely without causing pain or eroding from the friction. Friction in synovial joints is also diminished by **articular cartilage**, a thin, spongy layer of cartilage that covers the surface of bones where they articulate. There are six types of synovial joints, defined by the ways the bones articulate with and move against each other (Figure 22.3 and Table 22.2).

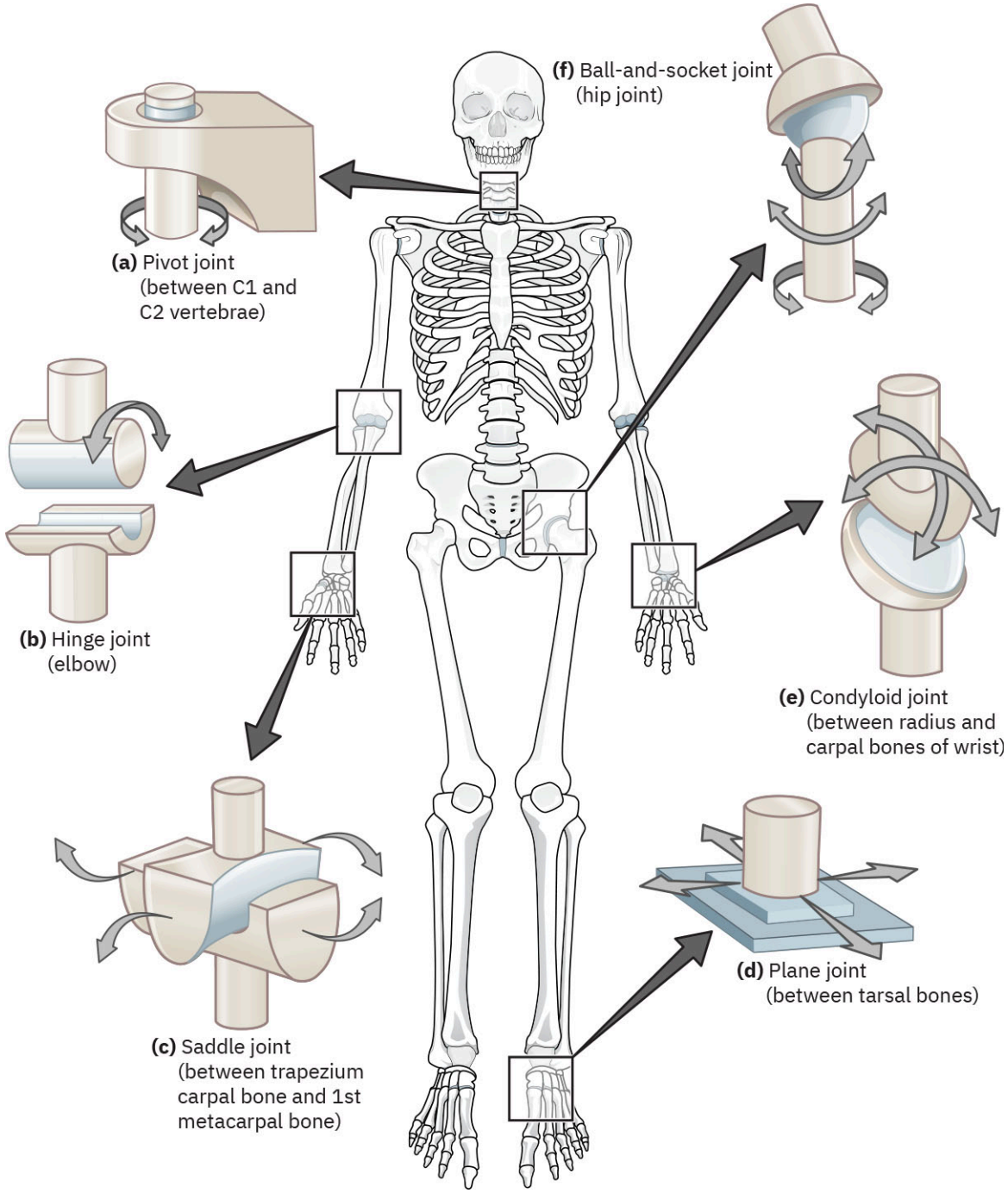


FIGURE 22.3 Synovial joints are classified based on the type of movement they allow. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Type of Synovial Joint	Characteristics	Example
Ball-and-socket joint	The round end of one bone fits into a large concave space in another—like a baseball fitting into a baseball glove.	Hips and shoulders
Condyloid joint	A shallow depression on one bone articulates with the rounded end of another, allowing for biaxial movement.	The joints located in the knuckles of the hands
Hinge joint	An outwardly rounded end of one bone articulates with the inwardly rounded end of another, allowing for bending and straightening.	Elbows, knees, certain parts of the ankles, and fingers
Pivot joint	The rounded end of one bone articulates within a ring of another bone and rotates within that ring.	Allows the turning of the neck
Plane joint	Articulating points slide against each other within a small range of movement bound by ligaments.	Joints of the wrist and in certain parts of the ankle
Saddle joint	Both bones are concave on one side and convex on the other and fit together like puzzle pieces, allowing biaxial movement.	What allows human thumbs to be opposable thumbs

TABLE 22.2 **Types of Synovial Joints**

LINK TO LEARNING

Joints can be complex to understand. Watch the Crash Course Anatomy & Physiology video to develop a better understanding of how joints work with bones (https://openstax.org/r/77jointbone) to facilitate movement.

Muscular System

The human body contains three types of muscles, each performing different actions as they contract and relax. The heart is composed of **cardiac muscle**, which acts to pump blood through the heart. A **smooth muscle** makes up the internal surface of arteries and veins, internal organs, and other internal passageways. It acts by pushing substances through the system—for example, food down the esophagus or blood through the veins and arteries.

Cardiac and smooth muscle movements are entirely unconscious and almost totally outside of the control of the individual. In contrast, **skeletal muscle** attaches to bone and creates intentional movement as it contracts and relaxes. Skeletal muscles allow the human body to resist the force of gravity and help keep the skeletal system stable. Most importantly for the purposes of this chapter, people use these muscles to start and stop movement.

Skeletal muscle is called **striated muscle** because it appears striped. Figure 22.4 shows a microscopic image of skeletal muscle. Note how the muscle appears to be banded. When muscles contract and relax, those bands slide across each other as the muscle shortens (contracts) or lengthens (relaxes). In **contraction**, the muscle works, the bands slide toward each other and become more tightly woven, and the joint bends. In **relaxation**, the muscle no longer works, the bands return to their resting position, and the muscle lengthens back out.

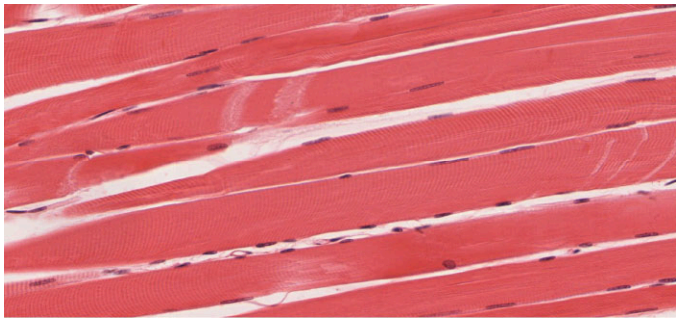


FIGURE 22.4 This microscopic image of skeletal muscle shows the striations in the muscle, which appear as stripes or bands. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

A muscle's strength is determined by the amount of work it gets. Muscle fibers and muscles grow and become stronger when they are worked; the more work they do, the stronger they become. Conversely, when muscles are worked less or not at all, they begin to **atrophy**, or shrink, losing both size and strength.

Relationship between Muscles, Joints, and Bones

There are more than 640 skeletal muscles in the body; some muscles perform only single movements, and others can move in multiple ways. However, there is always a main muscle, the **prime mover**. A muscle that helps the prime mover, providing assistance or stability to the movement, is considered a **synergist**. Because skeletal muscles work only when they contract, there are generally other muscles that contract in the opposite direction to a prime mover. A muscle that performs this function is known as an **antagonist**. Antagonists have two functions: they maintain the body's alignment by keeping joints at their "normal" angle, and they return the body to its proper alignment when the work of the prime mover is completed.

Try this: hold your arm out straight with your palm facing up. Flex the forearm toward your head. Your biceps brachii muscle is the prime mover, contracting to shorten the angle at your elbow and pull the forearm toward your face. Your upper arm does not move. Now, straighten your arm back out. Your triceps brachii muscle is the antagonist, extending your arm back out and widening the angle at the bend of your elbow. The biceps and triceps brachii muscles attach to opposite sides of the humerus in the upper arm and to opposite sides of the lower arm, causing flexion and extension.

LINK TO LEARNING

Watch this video to learn more about how skeletal muscles work, receive energy, and differentiate (https://openstax.org/r/77skelmusc) between big and small tasks.

Body Movements

The body can make many movements, depending on the type of synovial joint and the muscles that attach on either side of the joint (Table 22.3). Most commonly, each movement in one direction also has an opposite movement. Movement can be understood by looking at the changes in the angles between the two bones when the muscles are at rest and when they have contracted, as well as the angles of the bones to the center of the body. All these movements combine to allow a person to run, dance, type, engage in hobbies, play sports, eat food, dress, and climb into bed at night.

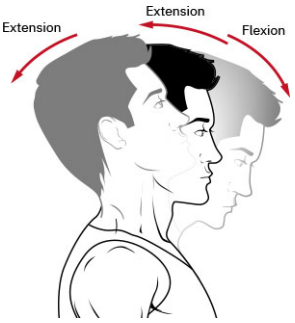
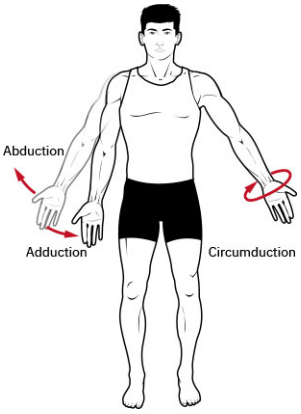
Type of Movement	Characteristics	Example	Illustration
Flexion	Bending: a decrease in the angle between two bones	Bending the neck forward, backward, or to the side	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Extension	Straightening: an increase in the angle between two bones (usually up to 180 degrees, or a straight line)	Straightening the neck back to center	
Abduction	Side-out: a movement away from the body's midline or center	Moving arms or legs out to the side	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Adduction	Side-in: a movement toward the body's midline or center	Moving arms or legs in toward the body	
Circumduction	The combination of flexion, abduction, extension, and adduction at a joint in a circular motion	Moving wrists, ankles, or neck in a circular motion	

TABLE 22.3 Types of Body Movements

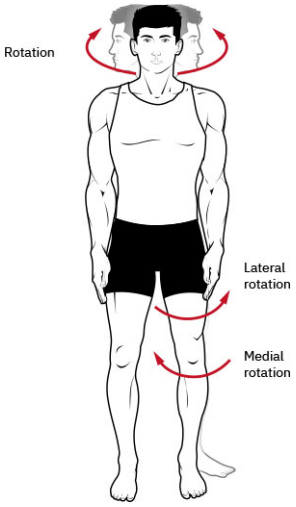
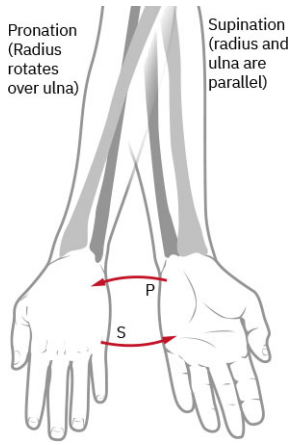
Type of Movement	Characteristics	Example	Illustration
Rotation	Movement of one bone around another at the articulation point	Turning the neck from side to side; making large circles at the shoulder or hip	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Supination	Movement of the forearm so the hand faces forward	These movements are specific to the hands and forearms.	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Pronation	Movement of the forearm so the hand faces backward		

TABLE 22.3 Types of Body Movements

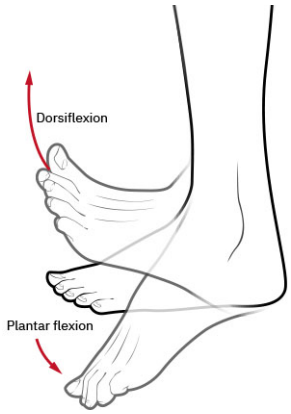
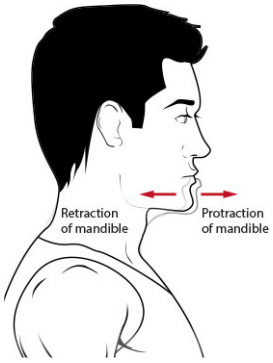
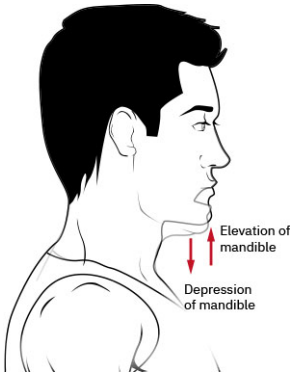
Type of Movement	Characteristics	Example	Illustration
Dorsiflexion	Movement of the ankle joint so the top of the foot moves toward the front of the leg	These movements are specific to the ankles; they are the only movements of the ankle joints.	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Plantar flexion	Movement of the ankle joint so the toes are pointed as far away from the front of the leg as possible		
Protraction	Forward movements of the shoulder blade or mandible	Throwing an object forward (causes the shoulder blade to move forward)	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Retraction	Backward movements of the shoulder blade or mandible	Squeezing the shoulder blades together causing them to move backward	
Depression	Downward movement of the shoulder blade or mandible	These movements allow you to shrug your shoulders and open and close your mouth.	 (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Elevation	Upward movement of the shoulder blade or mandible		

TABLE 22.3 **Types of Body Movements**

Nervous System

The nervous system is the human body's computer hard drive. It controls most of the body—both voluntary and involuntary processes—through communication that happens (via nerves) between portions of the brain and specific organs (Figure 22.5).

- The brain and spinal cord, which comprise the **central nervous system**, are the processing centers. The brain is protected by the bones of the skull; the spinal cord is protected by the vertebrae that make up the spine.
- All nerves that run through the body are part of the **peripheral nervous system (PNS)**. One of the many functions of the cranial nerves is to control the movement of skeletal muscles in the face. The movement of most other skeletal muscles, particularly those involved in skeletal movement, is controlled by spinal nerves attached to the spinal cord.
- The part of the peripheral nervous system that controls purposeful movement, recognition of the environment, and voluntary actions is the **somatic nervous system**. The somatic nervous system allows for interplay between sensory neurons, motor neurons, and conscious thought.

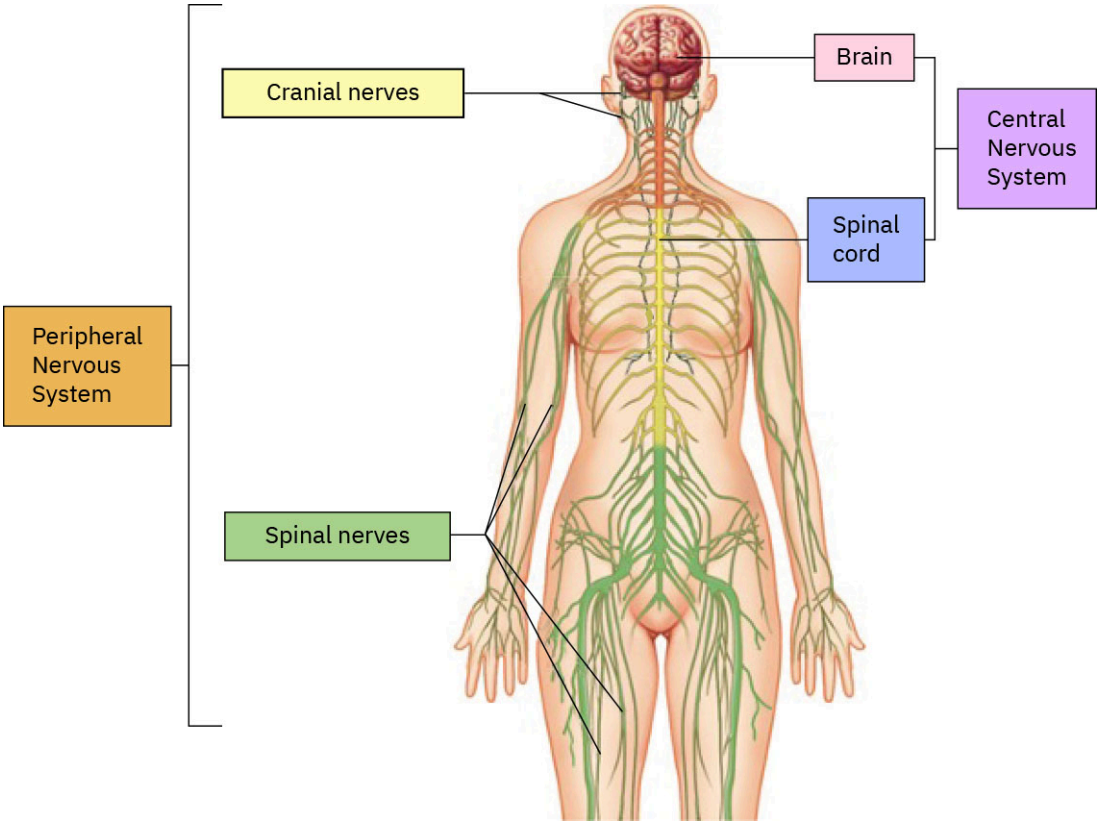


FIGURE 22.5 The nervous system, which includes both central and peripheral components, controls the movement of the skeletal muscles. (credit: based on modification of "Divisions of the nervous system" by Cenveo on AnatomyTool.org, CC-BY-3.0, retrieved from Neurotechedu.com)

The thirty-one spinal nerves extend from the spinal cord and run throughout the body, branching into smaller nerves as they move outward. A **neuron** stretches out throughout the system like a spiderweb and attach to muscles and other organs. Every nerve is composed of many neurons. Each spinal nerve receives information (for example, feelings of pain or hunger) through sensory neurons and sends information (for example, instructions to move or breathe) through motor neurons. The location where a motor neuron meets a muscle fiber is called a **neuromuscular junction (NMJ)**. The motor neurons signal the muscle fibers (the muscle) to contract. Muscles stop contracting when they become fatigued or when the signal from the motor neurons stops.

Functions of Activity, Movement, and Alignment

Now that we have reviewed the major body systems responsible for activity, movement, and alignment, let us delve deeper and explore why they are important for the human body. Beyond simply allowing people to move their body, the organs involved in movement also aid the body in remaining healthy and sustaining a state of equilibrium and

stability, or homeostasis. This section explores some of the major functions of activity, movement, and alignment.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: The Risks of Physical Inactivity

Nurses must be able to analyze some of the risks posed by immobility before they can generate solutions. Lack of physical activity is a significant risk factor for cardiovascular health as well as the health of many other body systems; it accounts for almost 75 percent of the healthcare costs in the United States. Risks of immobility include the following:

- 45 percent elevated risk of coronary artery disease
- 60 percent higher risk of stroke
- 30 percent higher risk of hypertension
- 59 percent higher risk of osteoporosis
- type 2 diabetes mellitus and other metabolic disorders
- cancers such as colon and breast
- depression and anxiety
- dementia
- cognitive impairment
- falls
- systemic inflammation and pain
- higher mortality rates

Recognizing the relationship between inactivity and serious health conditions allows the nurse to identify what inactivity means for a particular patient and consider how to target some interventions (Maestroni et al., 2020).

Circulation

The continuous, controlled movement of blood throughout the body is called **circulation** and is facilitated by the heart, blood vessels, and blood. This process ensures the delivery of oxygen, nutrients, hormones, and other essential substances to various tissues and organs while removing waste products, promoting overall metabolic function, and maintaining homeostasis within the body. Regular physical activity promotes a healthy heart. For adults, there is strong evidence that activity helps to improve blood flow and levels of good cholesterol in the body (American Heart Association [AHA], 2017). Consequently, it lowers blood pressure and decreases the risks of hypertension and early death from heart disease (Carini et al., 2017). Individuals who are largely sedentary—who engage in minimal to no activity—have a substantially higher and earlier mortality rate than those who are active (Lane-Cordova et al., 2022).

Balance

Postural stability or equilibrium, or **balance** is the ability to maintain an alignment that prevents an individual from falling and allows them to catch themselves if they trip. It involves the work of the nervous system, muscles, bones, and joints, as previously discussed, as well as the inner ear and the eyes (Harvard Medical School, n.d.). It allows individuals to be physically active and can usually be improved by physical activity. Balance is critically important to preventing injury, particularly in older adults.

Many conditions and symptoms can cause balance difficulties. For example, patients who have suffered a stroke often struggle with balance related to changes in their ability to control one side of their body. Parkinson disease causes tremoring of the extremities, making it difficult to control balance. Muscle weakness, particularly in the core (abdomen and back) and upper legs, diminishes a body's stability. Other issues impacting balance include multiple sclerosis, inner ear conditions, and nerve damage. Balance can also be impacted by medications (such as pain medication or sleeping pills), alcohol, and illicit drugs, all of which can impair the body's ability to remain upright and protect itself from falling.

LINK TO LEARNING

Recognizing how well a patient can balance is only one part of how nurses assess the patient's ability to move safely, particularly in hospital situations. The Bedside Mobility Assessment Tool (BMAT 2.0) (https://openstax.org/r/77bedside) offers a proven, nurse-driven strategy to rapidly assess a patient's mobility level and gauge how safe it is for them to be active.

Coordination

While balance is the ability to maintain a position, **coordination** is the ability to change position effectively and intentionally. Coordination requires the synchronized efforts of the nervous system, muscles, and joints. Coordination must occur between the brain and the muscles and between groups of muscles to make movement happen. Think about answering a cell phone. The brain recognizes the need to answer the phone and alerts the various muscle groups. Then one arm and hand generally pick up the phone and hold it in the correct position, so that the other arm and hand can work the controls on the phone. This requires coordinated movement as muscles in both arms, hands, fingers, and shoulders all work together to answer the phone. Imagine the level of coordination that occurs on a daily basis.

Coordination can be impacted by many factors, including vision and vision changes, age-related changes (coordination tends to decline with age), and conditions of the central nervous system, such as stroke and Parkinson disease (Gonzalez-Usigli, 2022). Common symptoms of coordination disorders include the following:

- **ataxia**, or loss of coordination
- **dysmetria**, or the inability to control or judge the range needed for a motion
- **dysarthria**, or the slurring of speech or changing of vocal volume
- **tremor**, or uncontrolled shaking when attempting purposeful movement or resting

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Fall Prevention Strategies

Falling is one of the most frequent causes of serious injury in patients older than 65 years of age. Almost one-third of older adults fall each year, and the risk of injury increases with age (Sherrington et al., 2020). For example, hip fractures are a serious concern for older patients; 95 percent of these injuries happen after a fall (National Center for Injury Prevention and Control, 2021). For nurses, recognizing fall risk and prioritizing fall prevention strategies are core functions of providing safe patient care. While there are many interventions that can be used to decrease the number of patient falls in inpatient situations, some simple ones include the following:

- Ensure patients always have call lights in reach, and respond when they call.
- Place patients who are at high risk of falling near the nursing station.
- Use bed alarms that will notify staff when patients are getting out of bed.
- Place imagery on the doors of patients who are at high risk of falling (such as a leaf representing falling leaves) to remind all personnel to help monitor the patient.
- Provide ample time for supervised movement and activity to prevent boredom.
- Ensure patient needs are met consistently and in a timely fashion (such as offering toileting assistance).
- Check for safety precautions, such as sufficient light in the hallway, handrails along the hallway, and the availability of assistive devices.

Posture

The key to alignment is **posture**; it is how an individual holds their body. There are two types of posture (Medline, 2017):

- The way an individual holds their body at rest is called **static posture**.
- The way an individual holds their body during movement is called **dynamic posture**.

Posture is dependent on the spine, which holds the body upright. Figure 22.6 shows three natural curves in the spine, which can be seen from side to side but not from front to back. These are natural curves and indicate correct posture: the head is naturally above the shoulders, and the tops of the shoulders are over the hips. Correct posture is the position that applies the least stress on each joint.

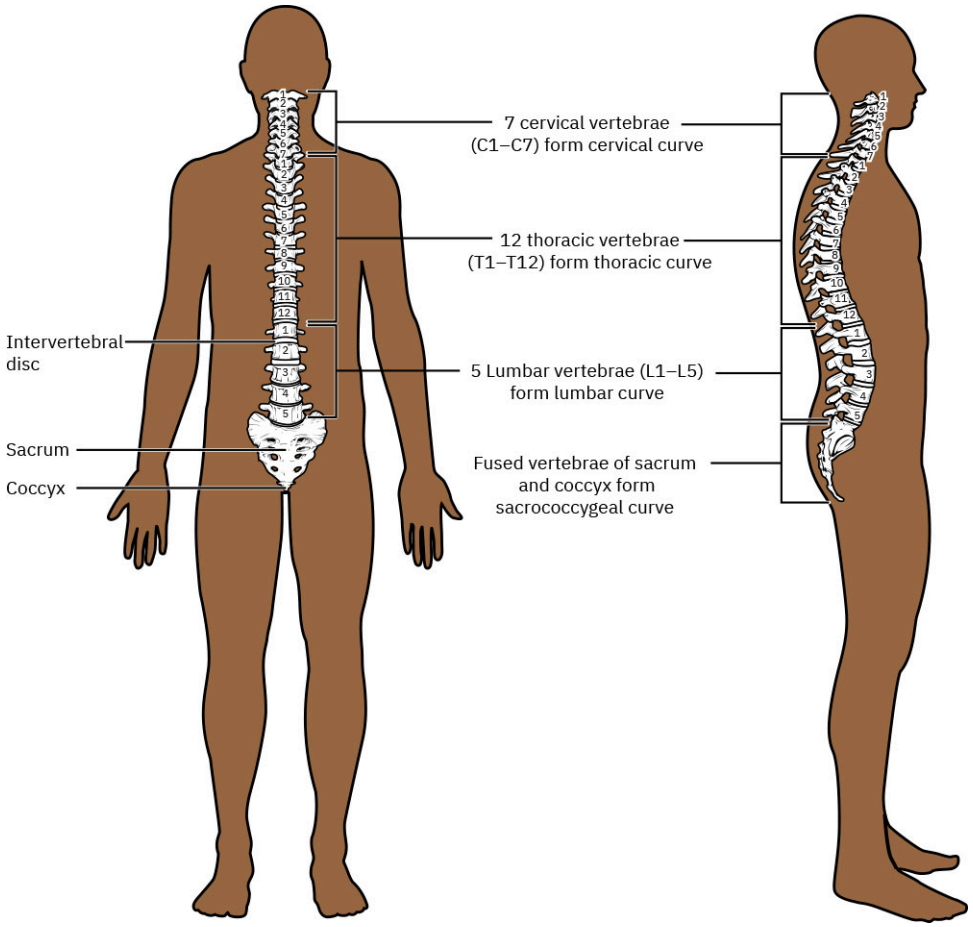


FIGURE 22.6 The three natural curves in the spine function as both positioners and shock absorbers. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Faulty posture is any position that increases stress on the joints and thus negatively affects health, such as slouching and slumping over (Figure 22.7). Over time, faulty posture may impact other body systems, including the digestive and respiratory systems (MedlinePlus, 2017). It can also cause serious issues with the musculoskeletal system, including the following:

- moving the spine out of alignment
- causing pain in the neck, shoulders, and back
- decreasing **flexibility**, the ability to move a joint effectively through its entire range of motion
- eroding vertebrae, causing spinal degeneration and arthritis
- decreasing balance and increasing the risk of falls
- incontinence for people with vaginas

FIGURE 22.7 (a) Scoliosis, (b) kyphosis, and (c) lordosis are common faulty postures that can be related to a variety of conditions, whether genetic, age-related, or temporary. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Postural Reflexes

A **postural reflex** is an unconscious, involuntary correction that the nervous and musculoskeletal systems make together to keep postural alignment when something threatens to change it. They happen continuously in reaction to Earth's gravitational forces. They also happen in more noticeable ways. For example, when people encounter an unexpected environmental stimulus, such as uneven footing, their postural reflexes kick in to prevent them from falling. Without those reflexes, balance and coordination would be impossible (Phu et al., 2022).

Postural reflexes develop as the human body develops and the spine grows and curves (Carini et al., 2017). Vision aids postural reflexes by allowing a forward visual field with adjustments to allow for stable sight and reduce the risk of falls. The **vestibular system** in the inner ear also plays a part in maintaining balance. Chronic diseases diminish postural reflexes and increase the chances of falling. Some of these diseases are stroke, Parkinson disease, diabetes, HIV, and chronic pain (Phu et al., 2022).

Ergonomics

The study of movement and body position in work is called **ergonomics**. A basic understanding of ergonomics is important to keeping patients and staff safe during patient care and transferring. Healthcare-acquired injuries and illnesses are all too common nationally. These happen when patients fall, develop infections, or are injured while transferring, during procedures, or through poor body positioning. Techniques for **safe patient handling and mobility (SPHM)** are a set of interconnected techniques designed to allow high-quality care for patients safely and to encourage safe movement without injury to patients or staff (Association of periOperative Registered Nurses [AORN], 2019).

Safety in the Workplace

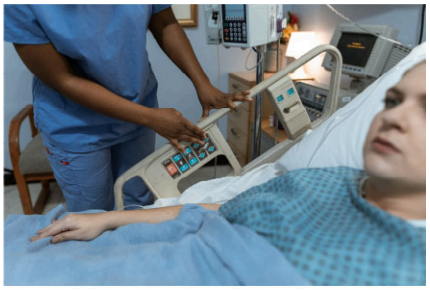
Proper ergonomics is crucial to healthcare workers, who are at high risk for musculoskeletal injuries because they regularly care for patients who may not be able to move themselves. Sprains and strains occur frequently in the workplace but can be prevented by using proper ergonomics and body positioning (Karwowski & Zhang, 2022). These disorders most often occur because of manual activities related to patient care, including heavy lifting and working in awkward positions. In health care, nurses' bodies are in constant motion, and understanding how to protect themselves from injury is critically important. By studying ergonomics and how nurses interact with their environments, patients, and everything around them, researchers have developed evidence-based strategies to improve performance, patient outcomes, and safety while minimizing staff injuries (Karwowski & Zhang, 2022).

Assistive Devices

An **assistive device** is available in most facilities to facilitate SPHM ergonomics (Figure 22.8). These devices allow for safe movement of patients between locations—for example, from bed to stretcher or wheelchair, within a bed, or between a bed and bath—and even to assist with standing. Each of these devices is intended to decrease the risk of injury to patient or provider during care.

(a)

(b)



(c)

FIGURE 22.8 (a) Sliding sheets or boards are friction-reducing surfaces that can be inserted beneath a patient to allow for easier movement between surfaces. (b) Lifts can attach to ceilings or move on the floor; slings go under patients and then attach to lifts. They are used together to lift patients. (c) Mechanical beds often consist of distinct sections that can separately be adjusted. For example, their heads and feet can be raised or lowered, or they may tilt from side to side or convert into chairs. Some beds can even take a patient's weight without the patient having to get up. (credit a: modification of work "Stretcher and slider board" by Glynda Rees Doyle and Jodie Anita McCutcheon, CC BY 4.0; credit b: modification of work "U.S. Navy Medical Team Integrates with Spokane Hospital 211017-A-KC249-1093" by Navy Medicine/Flickr, Public Domain; credit c: RDNE Stock project/Pexels, CC 0)

It is important never to use assistive devices without proper training; assistive personnel should also have been trained. Without proper training, the device could accidentally hurt patients or staff rather than help them (AORN, 2019; Veterans Health Administration, 2022).

Safe Patient Handling and Mobility

SPHM includes a variety of techniques designed to protect patients' safety and dignity while also protecting staff's safety (AORN, 2019). For patients, the techniques reduce patient falls and skin tears, increase satisfaction, and encourage mobility. For staff, they decrease the risk of acute and chronic musculoskeletal injuries, improve worker morale, and decrease worker fatigue.

Proper preparation for patient care or transfer is hugely important for the safety of patients and staff alike. With every patient-handling activity, take the time to complete the following steps *before* performing the activity.

1. Assess the patient's needs and gather the assistive devices necessary to provide their care.
2. Ensure there are enough staff available to assist with care.
3. Ensure the environment has been properly prepared. For example, move bedside tables and chairs, and ensure that devices that should be locked are locked and those that should be unlocked are unlocked.
4. Make sure team members understand their roles.
5. Explain to the patient the plan, and coach them if they can assist.
6. Apply proper **body mechanics**—intentional movements and muscle use designed to maintain an individual's posture and alignment—to decrease the chance of injury.

Once these preparations have been made, it is much easier to safely handle or transfer the patient, minimizing the injury risk for patients and staff.

LINK TO LEARNING

The U.S. Veterans Health Administration (VA) has developed a free app called Safe Patient Handling (https://openstax.org/r/77safe) to assist with safe patient handling. Users can explore a variety of patient issues and conditions and receive algorithms and feedback regarding techniques and equipment to use. After downloading the app, click on "Comprehensive Patient Assessment and Algorithms" and try it out with a few hypothetical patients.

Safe Patient Transfers

Most SPHM professionals aim to eliminate all unnecessary manual patient transfer (National Institute for Occupational Safety and Health, 2023). But when a transfer is necessary, what is the safest way to proceed? Putting all the ideas about SPHM and body mechanics together to use at one time when providing care for a patient can be complicated and feel overwhelming, particularly early in a nurse's career. However, over time these activities will come to feel completely normal. Until then, using formulas and algorithms can help nurses make safe decisions and determine what steps and equipment need to be used.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competencies: Patient-Centered Care and Safety: Transferring a Patient from a Bed to a Stretcher

When transferring a patient from a bed to a stretcher, follow these steps.

1. Let the patient know why the transfer is being made and allow them to ask questions.
2. Determine the following conditions:
    - What does the patient weigh?
    - Will the patient be cooperative with the transfer?
    - Will the patient be able to assist with or perform the transfer?
3. Verify that the receiving surface can hold the patient's weight. If not, obtain a stretcher that will.
4. If the patient is cooperative and can perform the transfer:
    - Ensure the bed and stretcher are both in the lowest possible position.
    - Coach the patient to move between the surfaces.
5. If the patient is cooperative and can assist with the transfer, ask them how they can help and work with them to determine the best strategy.
    - Always allow patients to perform as much as possible without putting anyone's safety in danger.
    - For example, if the patient can roll over, encourage them to roll from side to side while placing the sliding sheet beneath them.
6. If the patient is uncooperative:
    - Try to determine why they are not cooperative. If there is a reasonable expectation that they will be cooperative at another time, try to reschedule the transfer for that time.
    - If the transfer cannot be postponed, request assistance from additional staff as needed.
7. Position the patient on assistive equipment (such as a sliding sheet or sling), with help from additional staff as needed.
    - This will generally be accomplished by "log rolling" the patient from one side to the other while placing the equipment beneath them.
    - Remember, the heavier the patient, the more staff will be needed to position the patient on the sliding sheet or sling.
    - Ensure no tubes or lines are trapped between the patient and the equipment.
8. Ensure the bed and stretcher are both locked in position and the receiving surface is about a half-inch lower than the surface the patient is currently on.
9. Transfer the patient to the receiving surface:
    - With a sliding sheet: push/pull the patient between the surfaces.
    - With a lift: lift the patient with the sling, move over the receiving surface, and lower the sling.
10. Return the patient to a comfortable position.
    - Ensure no lines or tubes are between the patient and surface.
    - Raise the head of the bed, if appropriate.
    - Ensure a call light is within the patient's reach.
11. Before leaving, determine whether the patient is comfortable or has any questions.

Exercise

Purposeful, structured, and repetitive physical activity that requires sustained effort is called **exercise**. It is well known to decrease the chances for major illnesses and early death and improve the quality of life for most patients. However, people exercise at different levels. Some people do lots of exercise, others do less, and some do none. In the last several years, the scientific understanding of exercise has expanded substantially. Gone are the days when healthcare providers recommended 30 to 60 minutes of continuous, vigorous activity to obtain cardiac benefits. Today, there is a more nuanced understanding of how different types of exercise help different body systems and how much exercise is needed. In this section, we will explore exercise types, recommendations, and some specific exercises to suggest to patients.

PATIENT CONVERSATIONS

Discussing a Patient's Physical Activity Level

Scenario: The nurse is assessing a patient's activity level. When assessing a patient's activity level, nurses should ensure that patients are considering activity they perform at work, at home, via transportation, or at leisure. Too often, assessments neglect the level of physical activity occurring in settings other than leisure (such as the gym or basketball court). There are often ways to help patients include more physical activity in a variety of settings, such as bicycling to work, using a standing desk, or dancing while doing housework.

Nurse: Hi Sarah, I'm Chandra. I wanted to talk to you about physical activity for a bit, if you agree.

Patient: Sure, that sounds great.

Nurse: So, Sarah, what kind of physical activity do you do?

Patient: I like to walk my dogs. I take them on thirty-minute walks two to three days a week, weather permitting.

Nurse: Do you do any other types of physical activity?

Patient: Well, not much else for fun.

Nurse: Can you tell me what you do at work?

Patient: I work for a large shipping company.

Nurse: Do you get much physical activity on the job?

Patient: Actually, I do. I spend several hours a day, five days a week, moving heavy boxes from one location to another.

Scenario follow-up: Without a more in-depth assessment, the nurse assessing Sarah's activity level would miss a large piece of her actual activity.

Types of Exercise

There are several types of exercise, each of which is important for different body systems (Johnston, 2023). Each type impacts multiple systems as well as the body's **core**, or lower torso (particularly the abdomen and lower back). The core controls lower body postural stabilization.

Stretching and Flexibility

A slow, steady exercise or movement called a **stretch** is designed to extend or lengthen specific muscles or muscle groups in the body (Figure 22.9). They should never be painful and should not be pushed to the point of pain. Flexibility describes the body's ability to bend safely at its joints. Exercises that involve stretching and flexibility improve **range of motion** (the extent and direction of movement that a joint or a group of joints can achieve), muscle relaxation, and comfortable engagement in other activities (Johnston, 2023). They also improve balance and movement coordination and decrease fall risk (Riverra-Torres el., 2019) and are beneficial for treating and managing pain, particularly chronic pain such as in the lower back (Kim & Yim, 2020).

(a) (b) (c)

FIGURE 22.9 (a) An individual stretches the piriformis muscle that affects hip movement. (b) The hip flexor stretch stretches the hips and improves balance and coordination. (c) The child's pose stretch stretches the hips, lower back, and upper body. (credit a: modification of work "Stretching Fitness Workout" by ThoroughlyReviewed/Flickr, CC BY 2.0; credit b: modification of work by FocusFitness, Public Domain; credit c: modification of work by FocusFitness, Public Domain)

Aerobic Exercise

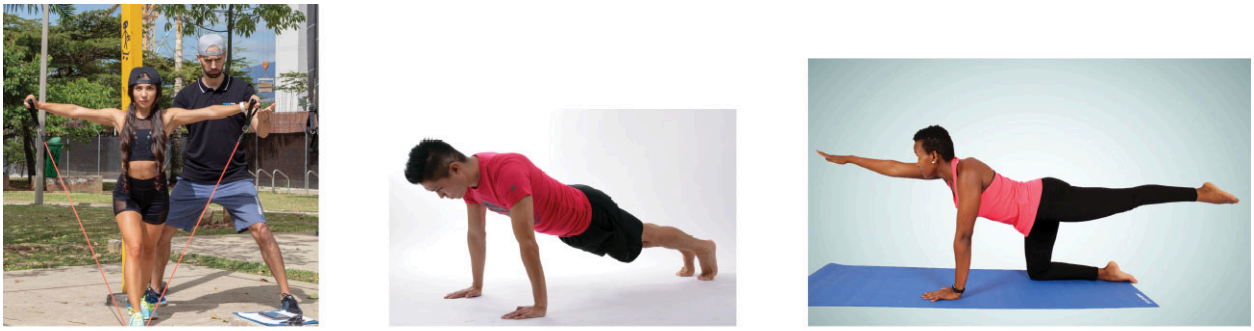
A continuous physical activity called **aerobic exercise** increases the heart rate and improves the function of the cardiovascular system—thereby improving the body's ability to take in oxygen, increasing the amount of blood the heart pumps (stroke volume), decreasing the heart's workload at rest (resting heart rate), and improving both cardiac and overall mortality rates (Johnston, 2023). The key is to perform aerobic activity for at least several minutes at a time and accumulate enough active minutes over the course of a day to impact the cardiovascular system (Figure 22.10).

FIGURE 22.10 Aerobic activities include running, walking, dancing, and even vacuuming. (credit: "Aerobic exercise" by CDC/James Gathany/Wikimedia Commons, Public Domain)

Strength Training

Resistance training, sometimes referred to as **strength training**, involves contracting a muscle against a load, such as free weights, elastic bands, water, or one's body weight (Riverra-Torres et al., 2019). In addition to improving muscle strength, endurance, and size, strength training improves cartilage health, bone strength, and the individual's overall functional ability (Maestroni et al., 2020; Johnston, 2023). It can also be used to decrease pain; improve cardiovascular endurance, posture, and flexibility; improve sleep; and help mitigate the effects of metabolic diseases, such as type 2 diabetes, and mental health and neurocognitive disorders, such as dementia (Maestroni et al., 2020).

There are two basic types of strength training: isometric and isotonic (Figure 22.11). Exercise that involves contracting a muscle against an unmoving force (such as a floor or wall) is called **isometric training**. Thus, the muscle cannot shorten or lengthen. It becomes fatigued by the pressure applied against the unmoving object. On the other hand, **isotonic training** involves contracting a muscle against a force that moves (such as a barbell or a weight machine). Users may gradually increase the weight to further strengthen the muscle, but this need not be a priority of a training program.

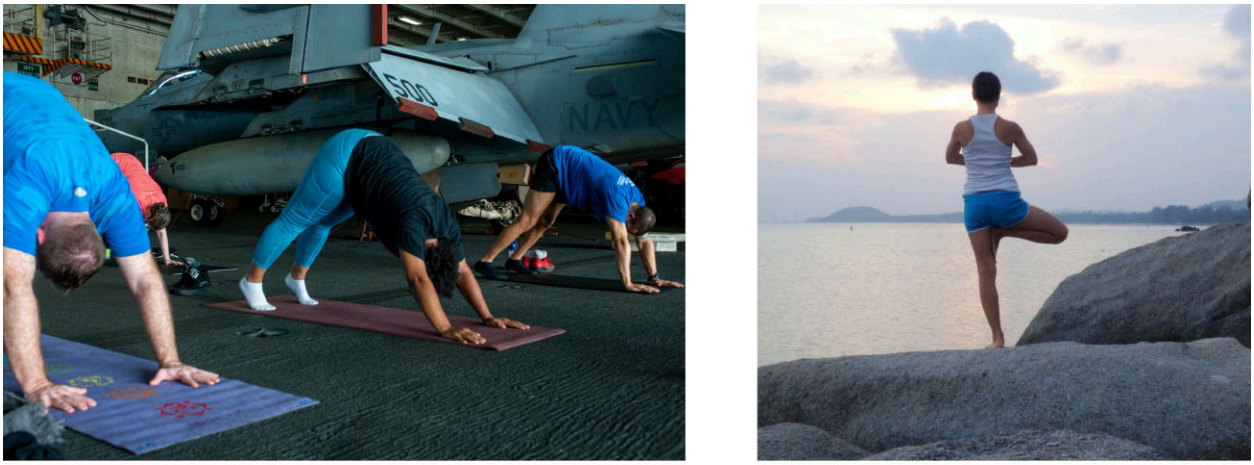


(a) (b) (c)

FIGURE 22.11 (a) This individual is performing strength training with resistance bands. (b) The plank pose strengthens muscles in the shoulders, back, core, buttocks, and legs. (c) Exercises such as the bird dog strengthen the core. (credit a: "Personal training shoulder exercise" by Tyler Read/PTI Pioneer, CC BY 2.0; credit b: PX here, CC0; credit c: "Woman Doing Bird Dog Exercise To Strengthen Core"/FocusFitness, Public Domain)

Balance Training

An activity called **balance training** is specifically used to improve an individual's ability to remain upright while stationary or moving and to decrease the chance of falling (Riverra-Torres et al., 2019). It has also been shown to improve mobility, reaction time, and strength and to assist with postural control, both static and dynamic (Lal, 2022). Balance training frequently occurs in physical therapy and rehabilitation settings where the focus is to retrain the body to maintain its own center of gravity by challenging the individual's stability (Johnston, 2023). Common techniques include having patients stand on one leg or use balance beams or wobble boards to improve balance in unstable settings. Many poses in the practice of yoga are also excellent for balance training (Figure 22.12).



(a) (b)

FIGURE 22.12 (a) These people are working on balance during a yoga class by practicing the pose called downward-facing dog. (b) Standing on one leg strengthens postural stability, balance, and ankle strength. (credit a: "Spouses practice the crescent pose during a yoga workshop" by Defense Visual Information Distribution Service/Nara & DVIDS Public Domain Archive, Public Domain; credit b: PX Here, CC0)

LIFE-STAGE CONTEXT

At-Risk Populations and Activity

People in marginalized communities—such as people with low incomes, immigrants, and people experiencing homelessness—are much less likely to participate in physical activity. Regular struggles with barriers such as cost, transportation, childcare needs, time, and basic financial and housing insecurity negatively impact their ability to be physically active in a purposeful way, which can profoundly affect their cardiovascular, mental, and physical health. Developing individual or community-level strategies to improve the physical activity of marginalized groups can have substantial impacts. For example, it might be possible to organize walking or aerobics groups in the community or distribute walking or running shoes to patients who have lower incomes (Creagh et al., 2023).

22.2 Factors Affecting Activity Level

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe physiological factors affecting activity level
- Recognize psychological factors affecting activity level
- Identify external factors affecting activity level

A profound interplay exists between physical activity and a person's body, mind, and environment. For most people, much of the time, physical activity is beneficial. However, during any physical body movement, a simultaneous feedback loop attaches physical and emotional responses and mental images to the movement. The total experience—physical, emotional, social, and mental—may be stored in the brain as unpleasant and negative, or pleasant and positive. These past experiences with physical movement can impact an individual's willingness to be physically active in the present.

Current conditions, including barriers to activity, can have a similar impact. Consider these two scenarios. Have you ever been sad, taken a walk to shake it off, and felt better after the walk? Alternatively, have you ever been sad and thought about taking a walk but not done it—perhaps you were physically unable to, or perhaps you simply did not feel up to it? These scenarios illustrate the double-edged nature of physical activity: there are many situations in which it will help, but only if the individual can overcome whatever barriers—whether past experiences or current health or environmental conditions—they experience to engage in it. Because physical activity has such enormous potential to positively impact the totality of a patient, it is important to help patients recognize and overcome their internal and external barriers.

Physiological Factors Affecting Activity Level

Despite the many well-known benefits of exercise, many people are reluctant to begin and stick with a prescribed exercise regimen. For many patients who are chronically ill, pain, weakness, and fatigue may negatively impact their activity (U.S. Department of Health and Human Services [DHHS], 2017). Others may be concerned that they are already too out of shape to be successful or that they will worsen preexisting conditions (American Diabetes Association, n.d.).

As the body ages, certain problems in the musculoskeletal system can have a negative impact on proper alignment and movement. Similarly, illness or trauma involving other body systems may interfere with movement because of either the underlying pathology or the treatment regimen. Nurses must be sensitive to how both acute and chronic health problems affect a patient's general appearance and their ability to purposefully perform even the most basic self-care activities. For instance, patients experiencing pain may present with a lack of visible energy and enthusiasm. Body posture also may be affected. For example, a person with chronic pain may often sit with their head bowed and shoulders slumped and may lack the energy to eat or even to use the toilet.

Growth and Development

Physical activity depends on muscle growth and development. For example, babies do not have the muscle strength to carry their body weight until they are about a year old. All children in the United States are screened for development on a regular schedule as part of the recommendations from the American Academy of Pediatrics (Centers for Disease Control and Prevention [CDC], 2022b). Children who show delays in development may be referred for further screening or therapy, such as occupational or physical therapy. It is important to remember that every child develops at their own pace. However, a child who consistently misses milestones or loses skills should be evaluated by their healthcare professional for underlying conditions that might be contributing to the delays.

LINK TO LEARNING

The CDC's Milestones in Action (https://openstax.org/r/77milestone) website offers a wonderful collection of pictures and short videos regarding a variety of age appropriate milestones.

Physical Health

Physical health is directly correlated to one's physical activity level. Patients may experience any number of physical

problems with the musculoskeletal system, which can all negatively influence their physical activity level. For example, trauma such as sprains and soft tissue injuries and chronic conditions such as degenerative bone disease all limit one's level of activity. Nurses must perform comprehensive assessments to determine appropriate activity for each patient.

It is critically important that patients progress toward targets rather than trying to jump directly to them (DHHS, 2021). Pushing patients to perform at a higher level than they are capable of can lead to injury, frustration, and unwillingness to continue. For example, patients who are totally inactive should begin activity slowly, performing light-intensity activities such as slow walks (less than 2 mph). As their **stamina** (physical and mental capacity to endure prolonged periods of exertion or activity without experiencing fatigue) and **endurance** (ability to withstand or tolerate prolonged physical activity or hardship over time) improve, they can move up to faster walks. Nurses serve the unique role of understanding each individual patient's limitations and can assist in developing a tailored plan of care.

Postural Abnormalities

Postural abnormalities such as contractures, scoliosis, or kyphosis often restrict range of motion and cause balance issues that make physical activity uncomfortable. Patients with postural abnormalities who have experienced a related fall, with or without injury, are often less willing to exercise because they do not want to risk further injury (Sherrington et al., 2020). As a result, their issues frequently become worse over time.

When working with these patients, educate them based on their health literacy and encourage them to find exercise opportunities in supervised group settings (where they may feel safer) that target strength and balance. These exercises can help patients be less likely to experience another fall (Sherrington et al., 2020). Yoga, tai chi, and qigong have all been shown to be effective in working with a variety of conditions, including postural abnormalities and balance issues. These types of exercises involve a variety of gentle movements that stretch muscles and encourage postural correction and stability. They are also modifiable for use with patients using a wheelchair or experiencing other disabilities.

Bone or Joint Abnormalities

A measurement of **bone density** studies the amount of hard minerals—specifically calcium and phosphorous—present in bone; these minerals account for bone's strength and resilience. Patients who have lost bone density are at increased risk for fracture. Often, patients who have already experienced a fracture related to bone density are very careful not to engage in activities that may put them at risk of additional fracture. For patients who also have low health literacy, careful education is required to teach that age-related loss of bone density can be slowed down by regular physical activity, including aerobic, muscle-strengthening, and bone-strengthening activities. Studies indicate that the most significant changes are seen in patients who perform at least ninety minutes of these activities weekly (DHHS, 2021).

Joint abnormalities, such as osteoarthritis and various rheumatic conditions, result in pain. Studies have shown that participating in at least 150 minutes per week of aerobic activity and muscle-strengthening exercises decreases pain and improves overall joint function and patient quality of life (DHHS, 2021). However, it is frequently difficult to begin exercising because the idea that the exercises will decrease pain is counterintuitive for many patients, particularly those who have a history of pain with exercise.

LIFE-STAGE CONTEXT

Osteoporosis Prevention in Older Adults

A common bone disease called **osteoporosis** makes bones weak and more likely to break, is characterized by low bone density and deterioration of bone tissue—particularly in the hips, wrists, and vertebrae (Figure 22.13). Ten million Americans currently have osteoporosis, including half of all adults over age 50; another forty-four million Americans with low bone density are at risk of developing it (Bone Health & Osteoporosis Foundation, 2022). The disease is more common in women than in men, and the chance of developing it increases with age (Pinheiro et al., 2020). Often it stays undiagnosed until an individual breaks a hip, vertebra, or wrist.

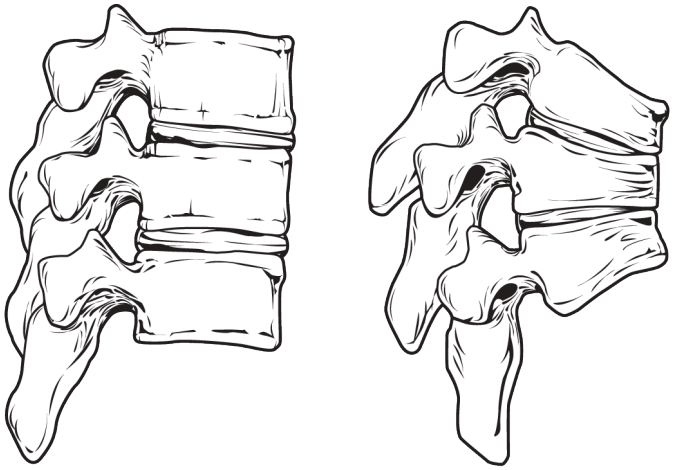


FIGURE 22.13 Note the difference in curvature between the normal bones and the bones with osteoporosis. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Patients with osteoporosis may have bone deformities that affect their posture. They may appear to be hunched over and frail from bone loss. To combat or prevent this, weight-bearing exercises are encouraged. These exercises stimulate the absorption of calcium back into bones, thus strengthening bones, stopping the loss of bone mass, and preventing fractures (Pinheiro et al., 2020).

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 3

Refer back to Chapter 19 Oxygenation and Perfusion for Unfolding Case Study Parts 1 to 2 to review the patient data. Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living due to weakness and increased dyspnea. She has been admitted to the hospital and has just arrived in her room on the telemetry unit.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history:** Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Flow Chart	**Time: 1300** Blood pressure: 142/80 mm Hg Heart rate: 98 beats/minute Respiratory rate: 20 breaths/minute Temperature: 98.9°F (37.1°C) Oxygen saturation: 94 percent on 2 L nasal cannula Pain: 6/10 (joint pain)

1. Recognize cues: What cues are the priority for the nurse to recognize?
2. Analyze cues: Based on the priority cues recognized in the first question, what other information would the nurse want to obtain from the patient at this time?
3. Prioritize hypotheses: How do you think the patient's osteoarthritis affects her quality of life and physical activity level?

Muscle Abnormalities

One of the most common disorders related to muscle abnormalities is muscular dystrophy, which describes a group of disorders that cause skeletal muscles to weaken and atrophy, and the **myopathy**, which is characterized by failure of the muscle fibers, causing muscular weakness (Siciliano et al., 2019). Traditionally, patients with these disorders have been discouraged from participating in physical activity, as it was thought to speed up the degeneration and dysfunction of the muscles. However, the newest guidelines encourage physical activity (Siciliano et al., 2019). The benefits of gentle balance, stretching, or aerobic activity to the muscles may outweigh the risks. Still, no single exercise prescription fits these patients due to variations in the disorders. Decisions about physical activity should be made under a physician's supervision because, for these patients, inappropriate exercise can cause permanent damage.

The following guidelines are key when caring for patients with muscular abnormalities:

- Do not perform aerobic activities while moving downhill.
- Do not exercise to exhaustion.
- Do not exercise during acute exacerbations of the disorder.
- Do not force or try to hyperextend any muscle movement or muscle group.

Central Nervous System (CNS) Abnormalities

Diseases or injuries that affect a patient's central nervous system (CNS) have a direct impact on their ability to perform exercise. This is because the CNS controls movement and balance. CNS abnormalities may occur because of diseases that affect neurons, such as multiple sclerosis (MS), a progressive disorder of the CNS characterized by weakness, numbness, decreased muscle coordination, and intermittent exacerbations. Other CNS disorders are related to injuries and problems with the spinal cord, such as paralysis. These and many more neuromuscular abnormalities affect the messaging and mechanics of movement, creating barriers to physical activity.

REAL RN STORIES

A Patient with Multiple Sclerosis

Nurse: Ashley, RN
Clinical setting: Ortho-neuro unit
Years in practice: 15
Facility location: Thibodaux, Louisiana

We used to have this patient, Livia. She was my age (around 43 then) and a single mother—like me. She was on disability because her multiple sclerosis was severe enough that she was unable to work consistently. She used many of the outpatient services available at my hospital, so I would occasionally see her then, or sometimes she would even drop by the unit to say hello. When she was in good condition, she did great. She used a cane, but it was almost exclusively for some balance help. When her MS was exacerbated, however, she could barely walk and needed to use a wheelchair for days or even weeks. She often visited the hospital for several days of high-dose steroids when she had a bad flare-up. It was always hard to see. She would feel so frustrated with herself—like she had done something wrong.

Livia and I spend a lot of time discussing her illness and her life's stressors. Many things can cause MS to flare up, such as stress, infections, too much activity, and even getting your period. For a single mom with younger kids, it was like living in a minefield of things that could trigger her. I spent a lot of time considering how I would manage being in her situation. Her ability to adapt and overcome always amazed me. She pushed through barriers to activity and even engagement with the world—barriers that I often felt would have stopped me. Eventually, Livia met a lovely man, they married, and he adopted her children. She had fewer flare-ups after that. I heard that they moved out of state a while back. I still think of her and hope she is doing well.

Psychological Factors Affecting Activity Level

Have you ever heard that the whole is more than the sum of its parts? A concept called **quality of life (QoL)** reflects the meaning of that expression. In health care, QoL seeks to capture an individual's overall well-being. It consists of the totality of the patient's mental and physical health, as well as their beliefs and values about their health. Physical activity is a key component of QoL—done properly, it improves both physical and mental health.

Unfortunately, as with purely physiological factors, patients must often overcome psychological barriers to exercise before they experience the positive effects to their QoL (Table 22.4).

Barrier	Strategies to Overcome
Feelings of isolation or loneliness	• Encourage patients to work with a family member or friend or participate in group activities. • Encourage patients to discuss their needs or goals with family or friends and ask for support. • Describe the benefits of joining a gym or activity club to meet other people like them. • Suggest patients seek out others in their fitness groups to "buddy" with for support.
Fear of injury	• Provide education regarding equipment and assistive devices. • Encourage structured settings with supervision. • Suggest balance and strength exercises to reduce the risk of falling. • Recommend starting slowly and simply to build confidence. • Encourage warming up and cooling down.

TABLE 22.4 Psychological Barriers to Exercise (Sources: DHHS, 2017; CDC, 2022b; AHA, 2021.)

Barrier	Strategies to Overcome
Feelings of embarrassment (e.g., regarding weight, ability, or current inactivity level)	• Suggest exercising independently in the patient's home using equipment or videos. • Encourage joining a class designed for beginners so everyone is at the same level. • Ask if they have a friend or colleague who might be similarly active and willing to work together. • Suggest joining a social activity (such as bowling or a dance class) rather than more traditional forms of exercise.
Lack of motivation	• Discuss activities the patient enjoyed when younger and might enjoy again. • Suggest trying several types of activities. • Encourage them to retrain how they think of exercise—not as drudgery but as fun—and to identify activities they enjoy. • Suggest exercise equipment that can be used while they do things they enjoy, such as watch TV. • Encourage getting an exercise buddy to work with consistently and motivate each other.

TABLE 22.4 Psychological Barriers to Exercise (Sources: DHHS, 2017; CDC, 2022b; AHA, 2021.)

Mental Health

Mental health and physical activity have a complicated relationship. Poor mental health is frequently a barrier to physical activity; however, physical activity can improve mental health conditions. A study performed during COVID-19 shows this relationship—and the related barriers to physical activity—quite clearly. This study found that people were less likely to be physically active during the pandemic than before it (Marashi et al., 2021). The respondents who had decreased their activity the most reported the greatest increases in anxiety, depression, and stress. These same people listed anxiety and lack of motivation as primary barriers to exercising. In contrast, the study participants who remained physically active experienced substantial relief from anxiety.

Lifestyle Variables

A **lifestyle variable** refers to the daily actions and activities related to work, leisure, and diet. For example, a diet largely consisting of processed foods may not provide enough energy or the increased metabolism needed for health-promoting activities. These variables can have a direct effect on health and exercise. People who do not exercise or remain seated for most of their daily activities have a sedentary lifestyle. On the other hand, people who incorporate exercise and physical activity into their daily life have an active lifestyle. These people will generally have more muscle mass and be stronger and in better health than those who are sedentary. Occupations that require an extended amount of sitting can contribute to a sedentary life in the same way that choosing energetic leisure activities such as hiking contribute to an active lifestyle.

Attitudes and Beliefs

The way individuals perceive physical activity greatly impacts their willingness to participate in physical activity (Quicke et al., 2017). Individuals who do not believe they can successfully be physically active, or who believe that activity will increase their pain, fatigue, or likelihood of injury, are less likely to participate in prescribed exercise. Thus, the expectation of a negative outcome may be a barrier to physical activity. When working with these patients, focus on the positive outcomes from physical activity, such as its positive impact on an individual's self-concept, psychological well-being, and body satisfaction, which contribute to improving psychological well-being and overall QoL (Fernández-Bustos et al., 2019).

Fatigue

Fatigue is one of the classic double-edged swords of physical activity. It can be substantially decreased through regular physical activity. Unfortunately, it also poses one of the most common reasons individuals give for being

unable to exercise. When working with patients, encourage them to think about when they are most fatigued and when they have the most energy. Suggest that they begin small by planning activities during times when they generally have the most energy. Educate them about the feedback loop in which sedentary behavior can make fatigue worse, whereas physical activity can make it better. For many this may be counterintuitive, and it is certainly possible to be physically active to the point of exhaustion. However, in general, when individuals start slowly, well within the level of their abilities, and advance their activity over time, they feel less fatigued all the time. Remind patients that they can perform physical activity in short bursts. They do not have to walk continually for sixty minutes; they can walk around the outside or even in their living room for two minutes at a time throughout the day.

Stress

Exercise and stress have an interesting relationship. Exercise decreases stress levels. Yet, high-stress levels decrease the likelihood of exercising (Burg et al., 2017). Even anticipation of stress the following day can decrease the likelihood of an individual engaging in physical activity. Further, high levels of psychological stress predict lower levels of physical activity and higher levels of sedentary behavior (Stults-Kolehmainen & Sinha, 2014). This holds true whether the stress is related to objective, external life events or to subjective internal states. People who are stressed may believe they have no time to exercise due to work schedules, family obligations, study obligations, or other commitments.

When working with individuals who are experiencing high levels of stress or who provide stress as a reason for lack of physical activity, try the following strategies:

- Remind them that any exercise is better than no exercise.
- Encourage them to lower the exercise intensity when they are feeling particularly stressed.
- Suggest they move a little daily, even if only by taking a few minutes during sedentary sessions to stretch their legs.
- Encourage them to plan their physical activity and schedule it as they do other parts of their lives.

PATIENT CONVERSATIONS

Helping Patients Overcome Barriers to Physical Activity

Scenario: Nurse Susan Schindler is 44 years old and works in an outpatient clinic in Lexington, Kentucky. She has worked at the clinic for five years and is currently working with a new patient regarding physical activity. The patient has stated that she would like to be more physically active, but she does not have the time or know where to begin, and she is worried about how activity will impact her lower back pain. The physician has asked the nurse to give the patient the results of her x-rays and discuss options for physical activity.

Nurse: Hello, Ms. Mayberry. My name is Susan. Dr. Brunner asked me to come and chat with you about physical activity and exercise. Your back x-rays came back and there are no contraindications to a normal exercise program. If you are interested, Dr. Brunner would like to refer you to physical therapy. They can work with you on back pain, do manual manipulation, and teach you stretching and strength exercises if you would like.

Patient: Well, I guess that's okay. I'm just not sure I have the time to go to physical therapy.

Nurse: If you don't have time for physical therapy, you can try several other options, such as tai chi or yoga, that you can do with videos at home. Just be careful not to push yourself past the point where you feel any pain.

Patient: I just don't know where to start. It has been a long time since I've been at all active.

Nurse: There are several places around town that offer low-impact aerobics or other types of group fitness classes for beginners. Maybe you could attend one of those once a week and then find some ways to do a few minutes of exercise at other times of the day. All it takes is a few minutes at a time to have a positive effect on your body.

Patient: Really? I thought I had to work out for at least an hour each time. I don't know how I would do that even if I wanted to—between my pain and my schedule.

Nurse: Yes, really! Just a few minutes at a time, here and there, will go a long way to helping you feel better. Simple things, like parking farther away from stores to give yourself a bit longer to walk or walking around your yard for a

few minutes with your dog or kids, are great ways to start.

Patient: Yes, I can do that easily. My daughter loves to run around the yard, but I never go out with her.

Nurse: She would probably like to have you out there with her occasionally. I also recommend seeing the physical therapist at least a couple of times. We work with a good one who has extended hours and can work around almost any schedule. May I schedule an initial consultation for you? Even a few sessions might give you the tools to really help your pain.

Patient: Yes, I think so. I would like that. Thank you.

Nurse: Excellent. If you have any other questions, feel free to call the office.

External Factors Affecting Activity Level

In addition to physical and psychological factors specific to the individual, external factors influence whether an individual engages in physical activity. Sadly, socioeconomic and environmental factors result in clear differences in the amount of physical activity performed by different groups of people.

Socioeconomic Factors

Physical activity is often presented in our culture as a luxury, requiring considerable time, expensive equipment, and a gym membership. Patients concerned about the perceived high costs of physical activity may avoid exploring inexpensive or even free options, such as jogging or working out with resistance bands, jump ropes, and water bottles as free weights. Lack of childcare can also be a significant barrier to physical activity. Simple activities such as walking and dancing can be ways to involve the whole family in exercise. Patients may also explore cooperative relationships with friends or relatives, trading babysitting for exercise time.

Environment

Environmental factors can also facilitate or inhibit physical activity. For example, access to safe walking paths, facilities, or trails may encourage local people to be physically active, just as lack of access may discourage them (Riverra-Torres et al., 2019). Individuals living in rural areas may not have walking paths or access to facilities (free or paid) where they can exercise (Pelletier et al., 2021). Understanding the local conditions and available resources enables the nurse to provide higher-quality education regarding physical activity in any environment.

Weather

An important component of the environment that is often overlooked when planning an exercise regimen is weather. Bad weather can completely derail an individual's fitness plan, particularly if it is exclusively based on outdoor activities. Encourage patients to develop various fitness options, including ones that can be done indoors, such as exercise videos, walking around a mall, or dancing classes. That way, when they cannot bike, walk, run, or play tag with their kids outside, they do not have to miss their daily physical activity goals (CDC, 2022b).

22.3 Activities of Daily Living (ADLs)

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize the types of ADLs
- Describe the causes of limitations with performing ADLs
- Identify measurement tools for the performance of ADLs

A functional performance activity, also called an **activity of daily living (ADL)**, is an essential, routine task that most people can do independently most of the time. If you are reading this and going to nursing school with the intent to practice as a nurse, you probably perform all your ADLs independently. You can dress, shop, and cook for yourself without help. However, perhaps you have had an occasion—maybe during an illness—when you needed help with those basic functions.

A great deal of nursing care, particularly in hospitals and long-term care facilities, is centered around aiding patients with ADLs or completely performing ADLs for patients who cannot perform them independently. Individuals with disabilities or chronic illness, patients recovering from recent surgeries, and even many older adults may regularly require assistance with ADLs. In long-term facilities, staffing decisions are frequently made based on the number of

patients needing assistance with ADLs and the number of ADLs each patient needs. Even funding agencies such as the Centers for Medicare & Medicaid Services use ADLs to estimate a patient's time for rehabilitation after an illness, and the performance measures used to evaluate and rank care facilities are often partly based on ADLs. Many insurers decline to provide permanent nursing home care unless the patient has lost three or more ADL abilities.

The inability to perform basic routine tasks can lead to safety and health risks for individuals and decrease their quality of life (QoL). Even in outpatient care, regular assessment of ADL ability is an important part of ensuring that patients receive the care they need. Gradual decline in ADLs over a long period of time is not unusual, particularly in patients over 85 years—sometimes called the oldest old. The 2011 U.S. National Health Interview Survey revealed that 20.7 percent of all adults over 85 required ADL assistance, whereas only 3.4 percent of those between 65 and 74 required help (Edemekong et al., 2022). However, a rapid decline in ADL ability in any patient is cause for alarm. Thus, understanding and recognizing ADL ability is important in all healthcare settings.

Types of ADLs

There are two types of ADLs: basic and instrumental. A physical ADL is also considered a **basic activity of daily living (BADL)**. They are things that most individuals learn as children when they are reaching various developmental milestones, and they make up the basic skills necessary to manage one's physical body. A complex activity called an **instrumental activity of daily living (IADL)** makes up the skills required to live independently in community settings. These are everyday activities typically learned as adolescents.

Basic ADLs

Healthcare providers generally recognize the following BADLs:

- Transferring: the ability to move one's body from one location to another, such as from a bed to a wheelchair and vice versa.
- Continence: the ability to maintain control of one's own bowel and bladder functions.
- Eating: the ability to feed oneself and use utensils without assistance from others.
- Dressing: the ability to make appropriate clothing choices for the occasion or weather and put on the clothes (including zippers and buttons) without assistance.
- Bathing: the ability to wash oneself and provide for one's basic cleanliness.
- Grooming: the ability to brush one's teeth and care for one's nails and hair.
- Toileting: the ability to move to and from the toilet, use it correctly, and clean oneself afterward.

Note that there are some variations in BADLs depending on the source or the measurement instrument being used. For example, some agencies combine toileting and continence or list walking as a separate BADL.

When a patient begins to lose their BADLs, the chances of gaining a nursing home admission increase dramatically—especially upon loss of the abilities to bathe, feed, or dress oneself. It is very difficult for families to provide full-time care for individuals who need extensive assistance with their BADLs. In a 2018 study of long-term care providers in the United States, 251,100 individuals were using an **adult day service** to meet their needs when their caregivers are working. Of those individuals, 64 percent needed help with three or more BADLs (Lendon & Singh, 2021).

Instrumental ADLs

IADLs are higher-order skills requiring complex physical or mental processes. They include the following:

- Transportation: the ability to either arrange for transportation, such as a cab or bus, or provide one's own transportation.
- Shopping: the ability to acquire items needed for daily life, such as food, medication, and clothing.
- Managing finances: the ability to pay bills and manage bank accounts.
- Meal preparation: the ability to plan meals and cook for oneself.
- House cleaning: the ability to maintain one's living space by completing tasks such as cleaning dishes after eating, taking out the trash, and straightening up living areas.
- Laundry: the ability to wash and dry one's clothing.
- Home maintenance: the ability to keep one's home in good repair, either by performing tasks oneself or by arranging for others to do them.
- Managing communication: the ability to communicate as needed via phone, mail, or computer.

- Managing medications: the ability to obtain medications and take them as ordered.

The loss of an individual's ability to perform IADLs is often the trigger when families recognize a cognitive decline in their loved ones; it may be one of the first noticeable signs of dementia.

Limitations with Performing ADLs

Individuals who cannot perform ADLs independently and lack assistance are at risk for a variety of health and safety concerns, including malnutrition, poor hygiene, illnesses such as urinary tract infections, and injuries from falls. Unidentified ADL limitations are associated with higher chances of mortality, added healthcare costs, and admission to institutional care (Huntsberry-Lett, 2023). These limitations can have many causes, including musculoskeletal, CNS, circulatory, sensory, and respiratory disorders; impairment can also result from aging, medication side effects, and cognitive decline (such as dementia). Regular physical activity can prevent or delay the loss of ADL functioning (DHHS, 2021).

Aging

By 2030, there will be seventy-two million people in the United States over age 65—that will be 20 percent of the population (Tatum et al., 2018). As individuals live longer, their chances of experiencing multiple chronic illnesses and disabilities also increase. For older adults with Medicare, ADL assessment can be included in the yearly primary care wellness visit as part of a more extensive health risk assessment and testing for functional status and safety (Tatum et al., 2018). ADL skills assessments can be provided to patients or their caregivers to complete prior to seeing the physician, who can then review the results and discuss any implications and needs for community or rehabilitation assistance.

When working with older patients, particularly those with multiple comorbidities, exploring their desire for ongoing care is important. For many older adults, **aging in place**—remaining in their home, with or without caregivers—is a major priority. Many agencies are designed to allow older adults to remain at home for as long as possible. However, some strategies may require advanced planning by the patient and their family (National Institute on Aging [NIA], 2019). Exploring options early and planning for possibilities is key to ensuring an older adult can remain at home even when they begin to lose some of their ADL skills.

CULTURAL CONTEXT

ADLs, Multiple Chronic Conditions, and Older Mexican Americans

Individuals of Hispanic heritage now make up the largest minority group in the United States; they include more than 3.1 million individuals aged 65 and over, the majority of whom are Mexican Americans. Older Mexican Americans tend to have more chronic health conditions, such as arthritis, stroke, and cognitive decline, than their non-Hispanic White counterpart; those with three or more health conditions are likely to have severe ADL limitations (Collins et al., 2018). At the same time, they have longer life expectancies than non-Hispanic Whites. While both Hispanic and non-Hispanic populations experience loss of QoL due to limited BADLs and IADLs, older Mexican Americans may experience the limitations longer and with greater severity due to their greater life expectancy and number of chronic health conditions.

Familismo is a cultural practice common to many of Hispanic heritage; it refers to the connections within one's family, both emotionally and in terms of responsibility. As a result of *familismo*, older Mexican Americans are less likely to be placed into long-term care situations, such as nursing homes, and less likely to use home health services (Collins et al., 2018). These individuals are more likely to look to families to meet their healthcare needs rather than rely on external resources.

The combination of longer life expectancy and expectation of family responsibility can be a heavy burden on Hispanic families no matter how much they love their older relatives, particularly as the caregivers themselves age. When working with patients of Hispanic or Mexican American heritage, it is important to ensure that ADL and functional limitations are being identified and that their families and caregivers are being offered and given the support they are eligible for in a fashion that is culturally appropriate for them (Collins et al., 2018).

Cognitive Decline

Some minor cognitive decline is considered normal in older adults, and the chances of cognitive impairment increase with age (Tatum et al., 2018). However, a dementia is not a normal part of aging: they are irreversible, progressive disorders of the brain characterized by loss of cognitive and physical functioning. One of the most common causes of dementia is Alzheimer disease, a progressive cognitive disorder of the CNS that destroys the abilities to remember, problem solve, and eventually to manage even simple tasks; the disease may also cause personality and mood changes (NIA, n.d.). An estimated six million Americans have Alzheimer disease, although many have not yet been diagnosed (NIA, n.d.). Assisting these patients to establish early and long-term plans and connecting them with other agencies that can assist them are important parts of their healthcare team's obligations.

Taking longer to complete BADLs and difficulty managing IADLs are often the first signs that family members, and sometimes the patients themselves, begin to notice. By the time a patient reaches the late stage of Alzheimer disease, they are generally entirely dependent on others for all their ADLs (NIA, n.d.).

Suppose a patient has been diagnosed with early-stage dementia. In that case, they and their family should begin planning for their future. Many will be able to remain in their homes initially, some for years, before needing long-term care. However, they must establish strategies for managing IADLs—such as taking medications, purchasing groceries, and paying bills—as limitations in those activities often appear before limitations in BADLs. The patient should develop strategies to help themselves remember important things they need daily, such as using calendars or notebooks and keeping items together in a prominent place. They should also set up ways to pay bills, such as automatic bill pay, or ask someone they trust to pay their bills instead. Safety measures such as automatic cutoffs on stoves and emergency call buttons should be installed, and smoke detectors should be inspected and upgraded if necessary.

Acute Illness

Particularly among older adults, an acute illness often causes a loss of ADLs. Nurses can improve these outcomes through individualized plans of care. For example, nurses can actively encourage providers to order physical therapy and participate in early mobilization efforts. Additionally, nurses can ensure that call lights are answered promptly to decrease patients' reliance on adult briefs and discourage the use of urinary catheterization when possible.

LINK TO LEARNING

Many agencies offer home health services to individuals to allow them to remain in their homes and live as independently as possible for as long as possible. Adult day care programs are excellent options for many older adults who want to age in place and be as independent as possible but are unable to manage all their ADLs or lack the cognition to be safely alone. Check out this short video about using adult day care (https://openstax.org/r/77adultcare) to facilitate aging in place.

Delirium

If patients experience episodes of delirium while in the hospital, their chances of losing ADL function increase dramatically. An acute cognitive change called delirium resembles dementia in many ways; it is most often related to medical illnesses, substance use, surgery, chemical imbalances, or withdrawal from medications (Bellelli et al., 2021). However, unlike dementia, delirium is reversible if identified and treated appropriately.

Delirium is more common in older adults. For patients, the risk of delirium increases with the length of hospitalization, severity of illness, frailty of the patient, and number of medications and treatments provided. Additional risks include sensory deprivation, urinary catheterization, and preexisting dementia (Bellelli et al., 2021). Patients experiencing delirium are often too confused to provide self-care and lose their ADL abilities. Those losses can be permanent if not identified early and treated promptly (Weng et al., 2019).

Measurements for Performance of ADLs

Measuring ADL performance is an important part of evaluating an individual's health status and needs. Measurement can assist in identifying safety risks and the kinds of living environments or assistance strategies that are appropriate for a patient. Medicaid, the U.S. Department of Veterans Affairs (VA), and other insurers consider a

patient's **functional ability**—the ability to independently perform expected tasks, including ADLs—when determining whether they are eligible for benefits such as home health aides or long-term care (American Council on Aging [ACA], 2023).

A measurement of ADL performance is called a **functional assessment**. They aid in determining an individual's capacity to perform BADLs and IADLs. They are used in a variety of settings. Primary care and acute hospital providers may use them to decide the types of care a patient requires upon discharge or the onset of acute functional changes. Short-term rehabilitation specialists may use them to assist in developing care plans and establishing a baseline between where a patient was prior to an illness or surgery, where they are currently, and where they would like to be. Long-term care facilities may use them to validate the need for a patient's continued admission. Third-party payers, such as Medicaid and the VA, use them to confirm a patient's need for services.

There are a variety of common functional assessments that may be used independently or in conjunction with each other, depending on the purpose of the assessment. They include the Katz Index of Independence in Activities of Daily Living (Katz ADL Index), the Lawton-Brody Instrumental Activities of Daily Living Scale (Lawton Scale for IADL), the Klein-Bell Scale (the most complex), the Cleveland Scale (for individuals who have Alzheimer disease), the Bristol Scale (for individuals with dementia), and the Barthel Index. The most common are the Katz ADL Index, the Lawton Scale for IADL, and the Barthel Index (ACA, 2023).

Katz Index of Independence in Activities of Daily Living (Katz ADL Index)

The Katz ADL Index measures the ability of an individual to perform six BADLs. It can be given periodically to identify whether changes to the individual's functioning have occurred. It is one of the most used indexes, particularly for patients transferring from hospital to home (Liebzeit et al., 2018). It is effective in identifying large declines but not incremental declines or improvements (Witt & Hoyt, 2023).

LINK TO LEARNING

The Hartford Institute offers an example of a Katz ADL Index (https://openstax.org/r/77katz) worksheet. Check it out to see how it works in practice.

The Katz ADL Index contains six items: the BADLs of dressing, toileting, bathing, transferring, continence, and feeding (Liebzeit et al., 2018). It is a yes-or-no instrument; either the patient can perform a task independently or they require assistance. If the patient can perform the task independently, they score a 1 for that item and if they cannot perform the task independently, they score a 0 for that item. Assessment is usually done either through self-report by the patient or by their caregivers. A score of 6 indicates the patient is independent, 4 indicates the patient has moderate impairment, and 0 indicates the patient is very dependent.

PATIENT CONVERSATIONS

How to Perform a Katz ADL Index Assessment

Scenario: Mr. Solomon is a 69-year-old Black male who has recently moved and is having an initial appointment with a new primary care provider. During his intake, the nurse collects much of his history and pertinent data and uses the Katz ADL Index assessment to evaluate Mr. Solomon's ADLs.

Nurse: Okay, Mr. Solomon, I'm going to move on to some other types of questions about your daily life and activities. Are you able to bathe yourself?

Patient: Yes.

Nurse: Do you dress yourself?

Patient: Depends on who you ask. My granddaughter says I have no fashion sense.

Nurse: My daughter says the same about me. How about toileting? Do you ever need help with that?

Patient: Only for a few weeks after I broke my leg. That was so embarrassing to have to get my wife to wipe me after

I stooled. Now I'm fine again.

Nurse: Do you ever have problems getting to the toilet? Or do you have issues controlling your bladder?

Patient: Since my prostate surgery, I sometimes have problems getting to the toilet quickly enough and pee myself. I wear pads for that.

Nurse: That is more common than you may realize. I see that you walk with a cane. Do you ever have problems getting from one place to another?

Patient: Only if I do not have my cane. I can get off balance easily, you see. But if I have my cane, I can get wherever I need to go.

Nurse: Finally, are you able to feed yourself?

Patient: Yes.

Scenario follow-up: The nurse has quickly completed the Katz ADL Index scale with Mr. Solomon; being unable to reliably control his bladder, he scored 5 out of 6 possible points. Also, he has a strategy to manage the one issue for which he is not fully independent without assistance: pads for when he can't get to the toilet in time. This information provides the new provider with a baseline for Mr. Solomon's physical functioning. The nurse performed the same type of questions with Mr. Solomon about his IADLs and discovered he has no difficulties there.

Lawton-Brody Instrumental Activities of Daily Living Scale (Lawton Scale for IADL)

The Lawton Scale for IADL was developed to measure more complicated ADLs. Interestingly, the original scale, developed in 1969, reflected the expected gender roles of the time (Liebzeit et al., 2018). It had 8 points for women: the abilities to use a telephone, prepare food, do laundry, shop, and manage transportation, medications, housekeeping, and finances. It had only 5 points for men: the abilities to use a telephone, shop, and manage transportation, medications, and finances. Today's version includes 8 points for all genders—those on the original scale for women (Liebzeit et al., 2018). It is a self-reported questionnaire that can either be filled out by a patient or family member or given orally by a nurse.

The Barthel Index

The Barthel Index (BI) is another common instrument frequently used in rehabilitation centers to gauge patient progression. It allows for a more nuanced and expanded examination of the BADLs (Liebzeit et al., 2018). It expands and separates some categories. For example, controlling one's bowel and bladder are separate activities, as are bathing and grooming (e.g., caring for one's face, hair, and teeth) and mobility on flat surfaces and on stairs. It also allows for more nuanced reporting of abilities: users may be rated as independent, in need of assistance, or dependent (Liebzeit et al., 2018). BI is scored from 0 to 100, with 0 being totally dependent and 100 being totally independent.

Levels of ADL Performance

It is possible—indeed, probable—that a given individual will perform different ADLs at different levels. The various activities are relatively distinct from each other. For example, the same patient who cannot transfer themselves from their bed to their wheelchair may be able to button the buttons on their shirt, brush their teeth, and feed themselves. Thus, for each ADL, providers may gauge a patient to be fully independent, in need of supervision or assistance, or fully dependent.

Independent

An **independent ADL** requires no assistance; the patient can perform them with no help or coaching. Individuals who perform a given ADL independently may use an assistive device, such as a wheelchair or scooter for mobility or a Provale cup to prevent aspiration when drinking. They still perform the activity without the assistance of other individuals. For example, Susan is a 45-year-old female who uses a wheelchair because of a traumatic lower leg amputation in a car wreck three years ago.

- Susan easily transfers between surfaces such as her bed and wheelchair, and she can move around her home independently.
- Susan cannot drive yet because she has no car adapted to her prosthesis. However, she is adept at arranging

transportation via ride-sharing apps and has also used local buses. Therefore, she can manage her transportation needs independently.

Supervised

A **supervised ADL** describes an activity that an individual can safely perform with supervision or with coaching or reminders of what to do. Individuals who require supervision may technically be able to perform all the skills needed for the action; however, they may lack either the physical ability to do it consistently without harming themselves or the cognitive ability to remember how to do it. For example, Eduardo is a 65-year-old male with the early stages of Alzheimer disease who also has some mobility issues.

- Eduardo gets bored easily and loves to walk but has an unsteady gait and needs a cane. However, he forgets to use his cane, and he falls often. He requires coaching and reminders to use his cane to walk without falling.
- Eduardo is from Puerto Rico but now lives in the Northeast. He prefers to wear shorts and lightweight button-up shirts, which he always chooses, even when the temperature is quite cold. He requires coaching and someone to restrict his clothing options to seasonally appropriate ones.

Assisted

An **assisted ADL** describes an activity that an individual cannot perform independently or with supervision but can participate in and do some of the work. Individuals who require some assistance with ADLs are frequently able to perform all the movements required for the skill but lack the strength to do it independently. They may also be unable to perform all the movements required or be confused and require direct coaching and hands-on help to perform ADLs. For example, Frederica is a 51-year-old female who recently broke her ankle and upper arm on the right side, her dominant side. She cannot put any weight on her broken ankle or use her right arm. She can maneuver herself from a chair into her wheelchair to get to the bathroom and use her left leg and arm to move the wheelchair around.

- Frederica can stand on one leg and pivot to the toilet without help. However, she cannot stand on one leg, support herself with one arm, and clean herself after toileting. She requires assistance with toileting.
- Frederica can get her wheelchair up to the sink with assistance and perform a partial sponge bath on her upper body with her left hand. However, she cannot bathe the left side of her upper body with her right hand or effectively clean her lower legs, back, and bottom. She requires assistance with bathing.

Dependent

A **dependent ADL** must be done entirely for an individual because they cannot or will not do them for themselves. These individuals may be sedated and not know that care is being provided, or unaware or uncaring that the care is necessary; they may be passive participants who follow instructions but provide no active assistance; or they may actively discourage ADL care. For example, John is 75 years old and lives in a nursing home. He has advanced Alzheimer disease.

- John no longer feeds himself. He will open his mouth when asked and chew and swallow food when placed in his mouth. However, someone else must feed him. He is dependent for feeding.
- John also no longer dresses himself. He does not fight when someone is dressing him; however, he does not offer any assistance by bending his arms or legs. He must be fully dressed by someone else. He is dependent for dressing.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 4

Refer back to Unfolding Case Study #4: Part 3 for a review on the patient data.

Nursing Notes	**Time: 1315** Patient reports experiencing persistent joint pain, particularly in the shoulders and wrists, rated at 6/10 on the numerical pain scale. Patient states that pain interferes with daily activities, such as getting dressed and cooking. Patient also reports stiffness in affected joints, especially in the morning or after prolonged periods of rest, which improves with movement throughout the day.
Provider's Orders	**Time: 1400** • Occupational therapy referral • Acetaminophen 1,000 mg PO Q6 hours PRN moderate arthritic pain

4. Generate solutions: How could the nurse further assess the patient's functional status and ADL performance?
5. Take action: After performing a functional assessment and determining that the patient requires assistance with several ADLs, what actions should the nurse take?
6. Evaluate outcomes: What findings would indicate that interventions were effective and optimal patient outcomes were achieved?

Summary

22.1 Importance of Activity, Movement, and Alignment

Activity, movement, and alignment are critical to an individual's health and well-being. They require the coordinated effort of multiple organ systems, including bones, joints, muscles, and the nervous system. The physiology of activity, movement, and alignment in the body is managed through the skeletal system. Functions of activity, movement, and alignment in the body are managed through an intertwined system of bones, muscles, and joints. These systems work together to improve cardiovascular circulation, balance, coordination, posture, and even postural reflexes, which work unconsciously.

When providing care for patients, healthcare staff must use safe practices such as ergonomics and safe patient handling and mobility to prevent injury for each other and patients. Ergonomics in patient care can be accomplished through proper body mechanics such as safe lifting and transferring. Patients should also stay healthy through purposeful activity and exercise. There are a wide range of exercises that improve the functioning of different body systems including stretching and flexibility exercises, aerobic exercises, strength training, and balance exercises.

22.2 Factors Affecting Activity Level

While physical activity has positive benefits for almost every person, many factors determine whether someone is able to be physically active. An individual's level of physical activity may decrease due to physiological factors such as pain, injury, and health conditions or to psychological factors such as fear and anxiety. Finally, external factors, such as socioeconomic and environmental conditions, further impact physical activity. When educating or working with patients regarding physical activity, always assist them in developing strategies to overcome their barriers to exercise.

22.3 Activities of Daily Living (ADLs)

Activities of daily living (ADLs) are important indicators of a patient's functional ability and decline. No matter the setting, all nurses will evaluate and assist patients with ADLs. ADLs include basic and instrumental activities. Performance of ADLs can be limited due to aging, cognitive decline, and chronic or acute illness. There are various tools for assessing ADLs, including the Katz ADL Index, the Lawton Scale for IADL, and the Barthel Index, which providers and insurers use to ensure patients receive the appropriate level of care. Finally, individuals can need several levels of assistance, ranging from no assistance needed, to supervision or assistance from others required, to complete dependence on others to perform the tasks for them.

Key Terms

activity purposeful movement, such as walking
activity of daily living (ADL) an essential, routine task that most people can do independently most of the time
adult day service a facility where adults who are unable to support all their ADL needs or who are unsafe to be alone for long periods can go for care during the day while their families or caregivers work
aerobic exercise continuous physical activity that increases the heart rate and improves the function of the cardiovascular system
aging in place the state of growing older in one's home, with or without caregivers, rather than moving to a nursing home
alignment proper body position
antagonist a muscle that moves in the opposite direction of the prime mover
articular cartilage thin, spongy layer of cartilage that covers articulations
assisted ADL an ADL that an individual can help with, but they need hands-on help from another to perform fully
assistive device equipment, such as a lift or sliding sheets, that enables healthcare professionals to care for patients more safely
ataxia loss of coordination
atrophy the shrinking of a muscle due to lack of exercise or activity
balance the ability to maintain an upright alignment that prevents an individual from falling
balance training a practice used to improve an individual's ability to remain upright while stationary or moving and to decrease the chance of falling

basic activity of daily living (BADL) a physical ADL learned as children that allows individuals to care for their bodies: transferring, continence, eating, toileting, dressing, bathing, and grooming
body mechanics intentional movements and muscle use designed to maintain an individual's posture and alignment, decreasing the chance of injury
bone hard, dense connective tissue that form most of the adult skeleton, the primary support structure of the body
bone density a measurement of the amount of hard minerals that are present in bone and that account for its strength and resilience
cardiac muscle muscle specifically related to cardiac tissue
cartilage type of connective tissue that provides structural support and flexibility and helps reduce friction during joint movement
central nervous system (CNS) the primary processing center of the body; includes the brain and spinal cord
circulation the continuous, controlled movement of blood throughout the body, facilitated by the heart, blood vessels, and blood
contraction the act of a muscle working by shortening the muscle fibers to make a joint bend
coordination the ability to change position effectively and intentionally
core the lower torso, including the abdomen and lower back, that controls lower body postural stabilization
dependent ADL an ADL that an individual is unable to help with at all and requires someone else to do for them
dynamic posture how an individual holds their body during movement
dysarthria the slurring of speech or changing of vocal volume
dysmetria the inability to control or judge the range needed for a motion
endurance ability to withstand or tolerate prolonged physical activity or hardship over time
ergonomics the design and arrangement of workspaces, tools, equipment, and tasks to optimize comfort, efficiency, and safety for employees
exercise purposeful, structured, repetitive physical activity that requires sustained effort
flexibility the ability to move a joint through its entire range of motion
functional ability the ability to independently perform expected tasks
functional assessment a measure of ADL performance
independent ADL an ADL that an individual can do with no help or coaching
instrumental activity of daily living (IADL) a more-complex skill needed to function independently in a community, such as shopping for and preparing food, paying bills, and managing medications
isometric training exercise that involves contracting a muscle against an unmoving force
isotonic training exercise that involves contracting a muscle against a force that moves
joint a location where bones come into contact, allowing for movement
lifestyle variable a daily action or activity related to work, leisure, and diet
ligament tough but flexible fibrous tissue that connects bones or holds joints together
myopathy the name for a set of health conditions characterized by failure of the muscle fibers to work effectively, causing pain, stiffness, and weakness
neuromuscular junction (NMJ) the site where a motor neuron's terminal meets the muscle fiber and responds to motor signals
neuron a component of a nerve that passes information to and from the spinal cord and brain
osteoporosis a condition characterized by loss of bone density, making bones weak and prone to fracture
peripheral nervous system (PNS) the portion of the nervous system located on the periphery of the central nervous system containing peripheral structures including ganglia and nerves
postural reflex an unconscious, involuntary correction that the nervous and musculoskeletal systems make together to keep postural alignment when something threatens to disrupt it
posture how an individual holds their body
prime mover the main muscle making a movement happen
quality of life (QoL) an individual's overall enjoyment of life and sense of well-being
range of motion the extent and direction of movement that a joint or a group of joints can achieve
relaxation the act of muscle fibers returning to their resting state as a muscle stops working
safe patient handling and mobility (SPHM) a series of interconnected techniques designed to allow high-quality patient care, decreasing the risk of injury to both patients and staff
skeletal muscle muscle that attaches to bone and creates intentional movement as it contracts and relaxes,

causing the bones to move
skeletal system the bones, joints, and other structures that allow for movement, form the body, make blood cells, and shield organs
smooth muscle muscle in the walls of hollow organs such as the urinary bladder, uterus, stomach, and intestines
somatic nervous system the part of the peripheral nervous system that controls voluntary movements of skeletal muscle
stamina physical and mental capacity to endure prolonged periods of exertion or activity without experiencing fatigue
static posture how an individual holds their posture when still
strength training (resistance training) the practice of contracting a muscle against a load, such as free weights, elastic bands, water, or one's body weight
stretch a slow, steady exercise or movement designed to extend or lengthen specific muscles or muscle groups in the body
striated muscle muscle that appears striped, allowing for the muscle fibers to slide apart or together during movement
supervised ADL an ADL that an individual can do themselves, but they require coaching or supervision to perform them safely and effectively
synergist a muscle that helps the prime mover muscle by providing stability or assistance
synovial fluid liquid in joints that allows bones to glide over each other freely with decreased friction, preventing pain and erosion at the articulations
synovial joint a movable joint characterized by a fluid-filled cavity in the space where bones articulate
tendon a tough connective tissue located on each side of a joint that controls joint movement
tremor uncontrolled shaking when attempting purposeful movement or resting
vestibular system the body system located in the inner ear that functions to maintain homeostasis in balance

Assessments

Review Questions

1. What part of the skeletal system allows a finger to bend when moved?
   a. bone
   b. cartilage
   c. ligament
   d. joint

2. What unconscious, involuntary corrections do the nervous and musculoskeletal systems make together to maintain alignment?
   a. postural reflexes
   b. body mechanics
   c. antagonists
   d. synergists

3. The collection of techniques and strategies used to prevent patients or staff from being injured are known collectively as what?
   a. assistive devices
   b. ergonomic body positioning
   c. proper body mechanics
   d. safe patient handling and mobility

4. An older patient has come to the office complaining of falls. In addition to a medical workup, what type of exercise is the provider most likely to suggest?
   a. stretching
   b. strength
   c. aerobics

d. balance

5. Sampson's nurse is discussing physical activity with him, but he is quick to shake his head and say, "I've tried exercising, but I travel too much, hurt when I exercise for longer than fifteen minutes, worry that I'll fall and break another bone, and frankly, I'm just too tired." What barrier that Sampson expressed is a psychological barrier?
   a. traveling too much
   b. pain when exercising longer than fifteen minutes
   c. fear and concern about injury
   d. feeling tired

6. A patient who has been experiencing pain and postural abnormalities has asked for a recommendation for ways to increase their physical activity. What type of exercise would be the most appropriate for this patient?
   a. tai chi
   b. running
   c. strength training
   d. dancing

7. A nurse is working with a patient who has questions about physical activity but also several barriers to overcome. The patient reports they do not have enough money for a gym membership, feel unsafe in their neighborhood, experience pain when exercising for too long, and do not know where to start. What should the nurse suggest that would best address the barriers listed by the patient?
   a. enroll in the Silver Sneakers Senior class for 50 percent off
   b. join a gym in another neighborhood
   c. stretch until the pain goes away
   d. participate in a short beginners' exercise class on YouTube

8. A nurse is assisting a patient with mild dementia to get dressed and groomed for the day. The nurse offers the patient three options for the day's clothing and reminds the patient to brush their teeth, comb their hair, and put on their shoes. What level of care does this patient need with their ADLs?
   a. They are independent.
   b. They require supervision.
   c. They require assistance.
   d. They are dependent.

9. An independent patient's family member has come with the patient to their primary care provider and notes concern that the patient is struggling to care for themselves but is otherwise healthy. When the nurse asks the family member why they are concerned, what ADL is the family member most likely to mention?
   a. The patient smells because they are not bathing.
   b. They found the patient wearing shorts outside when walking the dog in January.
   c. They found several late notices for bills on the entrance table.
   d. The patient can no longer get out of bed.

10. A nurse in the emergency department is triaging a 75-year-old Black patient who was brought in by her daughter due to acute confusion, inability to recognize family members, and inability to transfer, eat, or toilet herself independently since she woke up this morning. The family is worried that the patient has developed Alzheimer disease. What is the most appropriate response by the triage nurse?
   a. "I am sure the provider will run several tests. However, Alzheimer disease is normally something that progresses over time, and all of this is new as of this morning. It may be related to an illness of some kind. We will know more after the provider sees her and gets some tests run."
   b. "Maybe, does Alzheimer disease run in your family?"
   c. "It certainly looks like Alzheimer disease or one of the dementias, but I am surprised it happened so quickly."

d. "This looks like a classic case of delirium. Your mother must have some kind of underlying illness. Once we figure out what that illness is and treat it, the symptoms will probably go away."

11. Aging in place is important for many older adults to retain their quality of life (QoL) and independence. However, as patients become older, aging in place is often difficult to manage. What is the best way for the nurse to help initially?
   a. Provide counseling to let the patient and family down easily because there comes a time when older family members need more care than families can provide in their homes.
   b. Encourage older adults and family members to plan for ways to pay for twenty-four-hour care.
   c. Suggest that a family member move in with the older adult to care for them twenty-four hours a day.
   d. Provide resources for local agencies skilled in modifying homes and providing services that assist older adults to age in place.

12. Pedro is a 75-year-old Hispanic male with dementia who lives at home with his adult daughter and her children. He feeds himself without coaching or help, bathes himself when reminded, wears adult briefs for incontinence issues, and either his daughter or her children pick out his clothes and help him put on his socks and shoes. What level of ADL care does Pedro need?
   a. He is independent for eating, needs supervision for bathing and grooming, and requires assistance for dressing.
   b. He requires supervision for eating and bathing and is dependent for dressing.
   c. He needs help with eating and dressing and is independent for continence and transferring.
   d. He is independent for eating and needs supervision for bathing, grooming, toileting, and dressing.

Check Your Understanding Questions

1. Describe the relationship between balance, postural reflexes, and the vestibular system.

2. List at least eight health risks of physical inactivity.

3. What information might you offer to a patient concerned that exercising would increase their pain?

4. How can exercise help prevent osteoporosis?

5. What is the difference between BADLs and IADLS?

Reflection Questions

1. Consider working with a patient who is from an at-risk, underrepresented group or who has a disability. Describe how you would approach an exercise conversation with that patient.

2. Safe patient handling and mobility techniques take time to perform, as does ensuring there are enough staff available for tasks. You may encounter situations where other nursing staff encourage you to just lift or move patients without taking the time to use assistive devices. How might you, as a new nurse, manage this situation?

3. Consider the issue of age and motor-related developmental milestones. When helping a young adult determine appropriate types of physical activities, why might it be helpful to have information about their early childhood development?

4. Section 22.2 explored several socioeconomic and environmental barriers to activity. Identify two additional external barriers based on your own experience or that of your friends or family. How might someone overcome these barriers and exercise more regularly?

5. This chapter briefly explored the ways that agencies such as the Centers for Medicare & Medicaid Services and the VA use ADLs to decide whether patients require services. Do you think functional assessments should be used to determine a patient's need for care? Support your response with two scenarios: one in which the process works effectively and another in which it does not.

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #4: Part 3.
   What psychological barriers to exercise may be affecting the patient? How should the nurse assess for these barriers?

2. Refer to Unfolding Case Study #4: Part 4.
   Does the patient struggle with basic ADLs or instrumental ADLs? What is the difference between the two types?

What Should the Nurse Do?

A 65-year-old patient who weighs 400 lb (181 kg) is admitted to the unit for high blood pressure. They have recently broken a hip, which has healed, but they remain unsteady. Despite their weight, the patient has always been active. However, now the patient fears falling because of their unsteady balance and has become much more sedentary.

1. The charge nurse has asked you to prepare the patient's room. Describe the types of equipment this patient might need in their room.
2. Which sets of muscle groups might be causing the patient's unsteadiness, and why?
3. What are some health risks this patient now faces related to being more sedentary?
4. Which types of exercises might you encourage the patient to perform to assist them in managing the unsteadiness in their leg?
5. Nurse Henderson is working with a patient, Ms. Rosa, who is experiencing some severe mental health concerns, such as depression and stress, which she states are barriers to her ability to perform physical activity. However she realizes that she needs to be active. What should the nurse do?
6. Nurse Roman is performing an assessment on Mr. Green, an outpatient, who has come to the clinic for a follow-up after an emergency room visit. The patient's adult child is with them, and Mr. Green has agreed to have the child in the room during the assessment. The patient states that they were driving their car, became confused and lost, and had a wreck. His child is with him because he is now afraid to drive. What should the nurse do?
7. Nurse Jorge is assessing Ms. Scrim, a patient who has come in for her annual physical. Ms. Scrim is very anxious and begins crying when Nurse Jorge asks questions related to functional assessment. Ms. Scrim states that she is struggling to do things she has always been able to do, such as remembering important dates and shopping. She states she is terrified that she is developing Alzheimer disease like her father-in-law. These issues have only been going on for a brief time. What should the nurse do?

Competency-Based Assessments

Consider that you are caring for a patient with cancer who is asking about whether they can safely be physically active. Refer to the article Cancer and Exercise (https://openstax.org/r/77cancerexer) for information that will help you answer the following questions.

1. What types of physical activity are recommended?
2. What exercise tests can be used to determine appropriate activities?
3. Describe the exercise prescription for patients with cancer.
4. What are the contraindications for exercising?
5. How would you respond to this patient?
6. What types of psychological effects can this patient receive from aerobic exercise?
7. What types of exercise suggestions would you make for a patient who is confined to a bed?
8. You have a patient with newly diagnosed Alzheimer disease who wants to age in place for as long as possible. Identify four resources you could provide this patient and explain why you have chosen each resource. Ensure the resources you provide are available in your current location.

   Consider using these websites to begin your search for resources:

   - Aging in Place (https://openstax.org/r/77ageplace)
   - National Institute on Aging (https://openstax.org/r/77nataging)

- Habitat for Humanity (https://openstax.org/r/77habitat)

9. Download the Lawton Scale for IADL (https://openstax.org/r/77lawtonIADL) and the Katz ADL Index (https://openstax.org/r/77KatzADL) and prepare for a skill checklist with your instructor on the use of these instruments.

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CHAPTER 23
Neuromuscular Function

FIGURE 23.1 The nurse assesses the patient's ability to use his muscles to lift his leg in response to neurological impulses, demonstrating how the musculoskeletal and neurological systems work effectively together. (credit: Maria Christina Yager/DVIDS, Public Domain)

CHAPTER OUTLINE

23.1 Foundations of Neuromuscular Functioning
23.2 Factors Affecting Neuromuscular Functioning
23.3 Considerations for Care of Neuromuscular Impairment

INTRODUCTION Imagine you are about to take a shower in the morning before going to school. You have turned on the faucet to start the water as you prepare to get in the shower. After a few minutes, you expect the water to be at a temperature that will be comfortable to enter. So, you put your hand into the spray of water to test it. What happens next depends on how your nervous system interacts with the stimulus of the water temperature and what your muscles do in response to that stimulus. To be able to respond to these kinds of stimuli, the neurological and musculoskeletal systems must both be functioning and working together efficiently. Impairments in either of these body systems can cause an inability to respond to external stimuli, which can result in bodily injury and poor health. This chapter discusses the foundations of the neurological system, factors that may affect function of the neurological system, and ultimately how care can be tailored based on that information.

23.1 Foundations of Neuromuscular Functioning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify structures and functions of the neurological system
- Recognize structures and functions of the musculoskeletal system
- Describe primary functions of the neuromuscular system

The neuromuscular system is composed of both the neurological system and the musculoskeletal system. These systems work effectively together to respond to internal and external stimuli, allowing the body to remain healthy and safe from injury. This section describes the structure and function of the different parts of the neuromuscular system, so that you will have a solid foundation of knowledge about normal anatomy and physiology before discussing alterations in function and specific disease states that affect these systems.

Structures and Functions of the Neurological System

The nervous system includes the **brain** (the central organ of the nervous system responsible for controlling bodily functions, processing sensory information, and enabling cognitive processes such as learning and memory) and the **spinal cord** (a long, thin, tube-shaped bundle of nerves that extends from the base of the brain through the vertebral column). Within the brain, a variety of regions are responsible for many different and separate functions.

Central Nervous System

The nervous system can be divided into two major regions: the central and peripheral nervous systems. The **central nervous system** (CNS) is the brain contained within the cranial cavity of the skull and the spinal cord contained within the vertebral cavity of the vertebral column. The **peripheral nervous system (PNS)** is everything else; although, some elements of the PNS are located within the cranial or vertebral columns (Figure 23.2). The CNS plays a crucial role in the neuromuscular system by coordinating and regulating voluntary and involuntary movements. It receives sensory input from peripheral nerves, processes this information, and sends motor commands back to muscles via motor neurons, allowing for coordinated muscle contractions and movement control. Additionally, the CNS facilitates reflex actions that protect the body from harm by quickly responding to stimuli without conscious effort. The PNS is so named because it is on the periphery—meaning beyond the brain and spinal cord. Depending on different aspects of the nervous system, the dividing line between central and peripheral is not necessarily universal. The PNS is discussed later in this section.

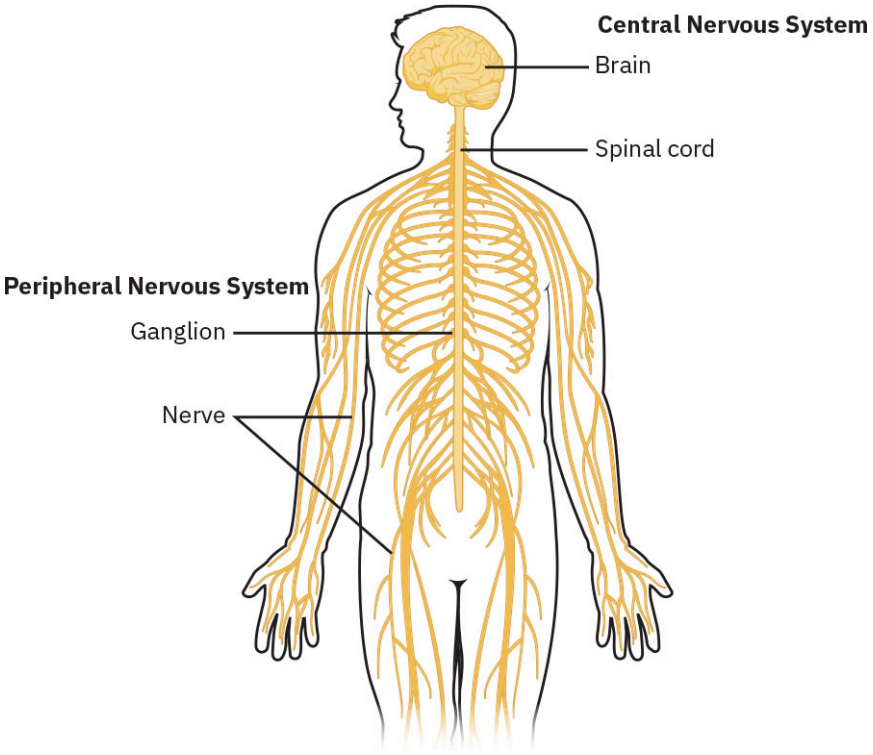

FIGURE 23.2 The CNS is composed of the brain and spinal cord, whereas the PNS contains peripheral structures including ganglia and nerves. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Brain

The adult brain has four major regions: cerebrum, diencephalon, brain stem, and cerebellum. The iconic gray matter of the human brain, which appears to make up most of the brain mass, is the **cerebrum** (Figure 23.3). Many of the higher neurological functions (e.g., memory, emotion, consciousness, voluntary muscle movement) are the result of

cerebral function. The **gyri** (folds) and **sulci** (grooves) formed by convolutions in the surface of the brain give the **cerebral cortex**, the outer covering of the brain, a wrinkled appearance. The rest of the cerebrum is beneath that outer covering. The large separation between the two sides of the cerebrum is called the **longitudinal fissure**. It separates the cerebrum into two distinct halves, a right and left **cerebral hemisphere**. Deep within the cerebrum, the **corpus callosum** provides the major pathway for communication between the two hemispheres of the cerebral cortex.

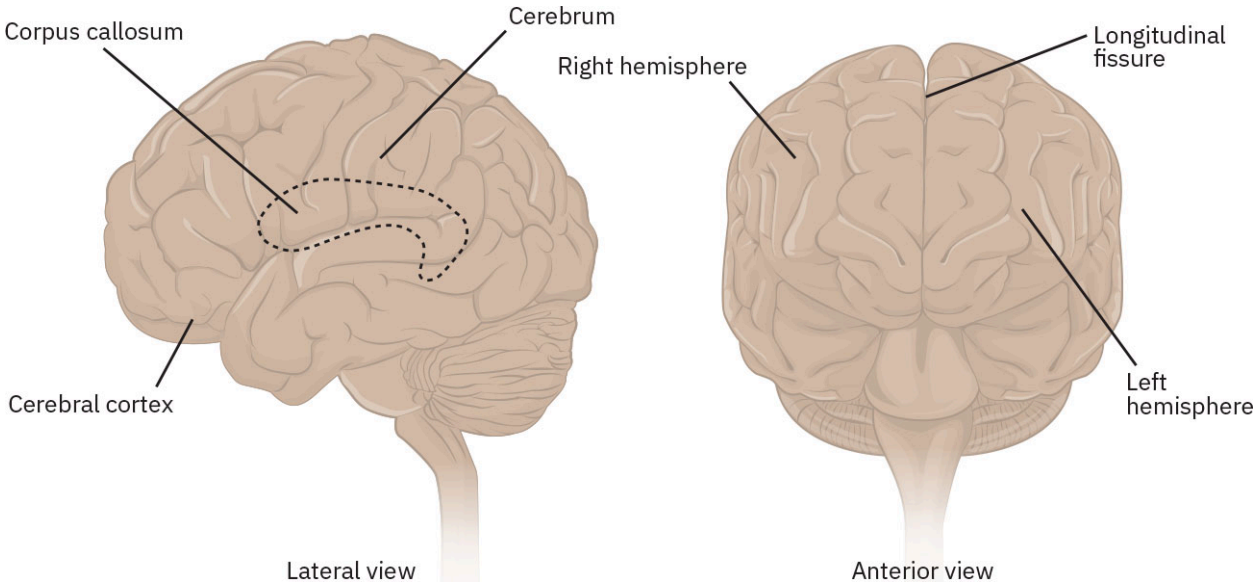

FIGURE 23.3 The cerebrum is a large component of the human CNS. Its most obvious aspect is the folded surface called the cerebral cortex. (credit: modification of work from *Anatomy and Physiology 2e.* attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The **diencephalon** is the region of the adult brain that connects the cerebrum to the rest of the nervous system (Figure 23.4). The rest of the brain, spinal cord, and peripheral nervous system (PNS) all send information to the cerebrum through the diencephalon. Output, including motor commands, language expression, and emotional responses, from the cerebrum also passes through this structure. The two major regions of the diencephalon are the thalamus and the hypothalamus.

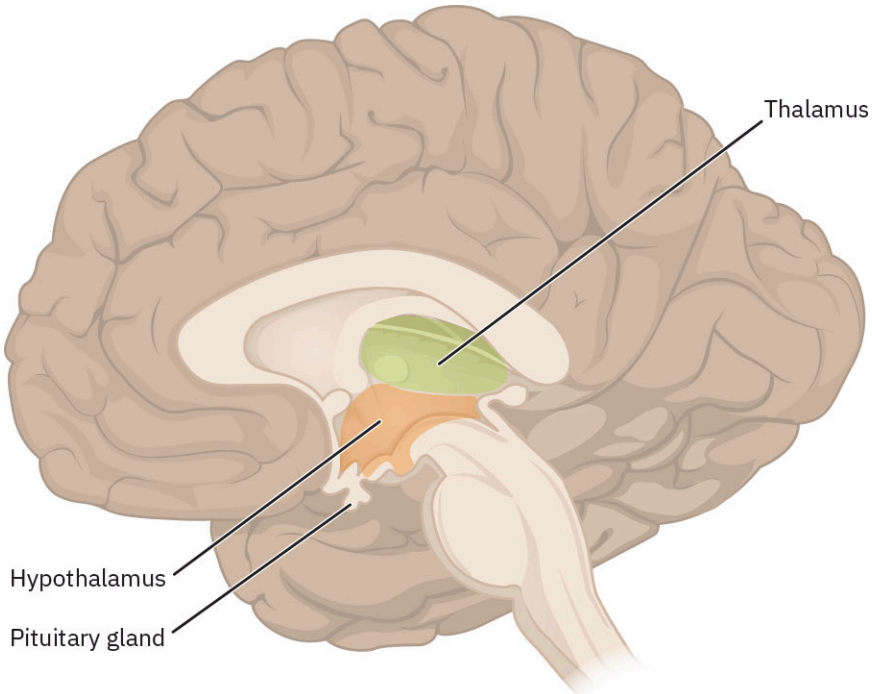

FIGURE 23.4 The diencephalon is composed primarily of the thalamus and hypothalamus. The hypothalamus is inferior and anterior to the

thalamus, culminating in a sharp angle to which the pituitary gland is attached. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The **thalamus** is a collection of nuclei that relay sensory and motor information between the cerebral cortex and the brain stem, spinal cord, or periphery. All sensory signals, except for the sense of smell, and motor signals pass through the thalamus before being processed by the cortex. The thalamus is also responsible for regulating sleep, wakefulness, and consciousness and also emotion and memory. The thalami are two elongated, ovoid structures on either side of the midline that make contact in the middle. The **hypothalamus** is a collection of nuclei that are largely involved in regulating homeostasis. It is the executive region in charge of the autonomic nervous system and the endocrine system through its regulation of the anterior pituitary gland. Other parts of the hypothalamus are involved in memory and emotion as part of the limbic system.

The brain stem emerges from the ventral surface of the forebrain as a tapering cone that connects the brain to the spinal cord (Figure 23.5). The midbrain and hindbrain (composed of the pons and the medulla oblongata) are collectively referred to as the **brain stem**. The **pons** (connection point between the medulla and the thalamus) and the **medulla** (connection point between the brain stem and spinal cord) regulate several crucial functions, including the cardiovascular and respiratory systems.

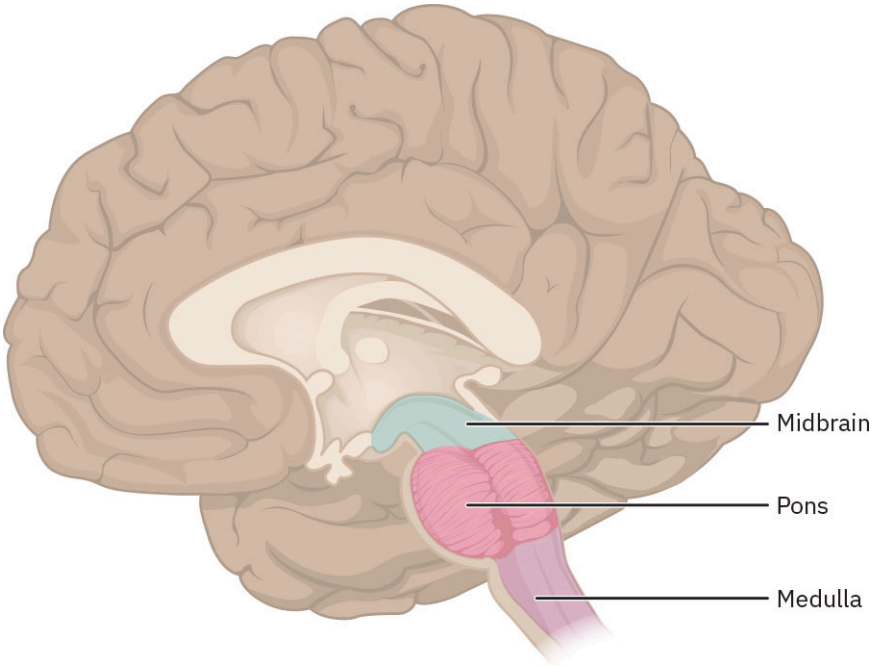

FIGURE 23.5 The brain stem comprises three regions: the midbrain, the pons, and the medulla. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The **cerebellum** is the "little brain." It is covered in gyri and sulci like the cerebrum and looks like a miniature version of that part of the brain (Figure 23.6). The cerebellum is largely responsible for comparing information from the cerebrum with sensory feedback from the periphery through the spinal cord. It accounts for approximately 10 percent of the mass of the brain (Van Essen et al., 2018).

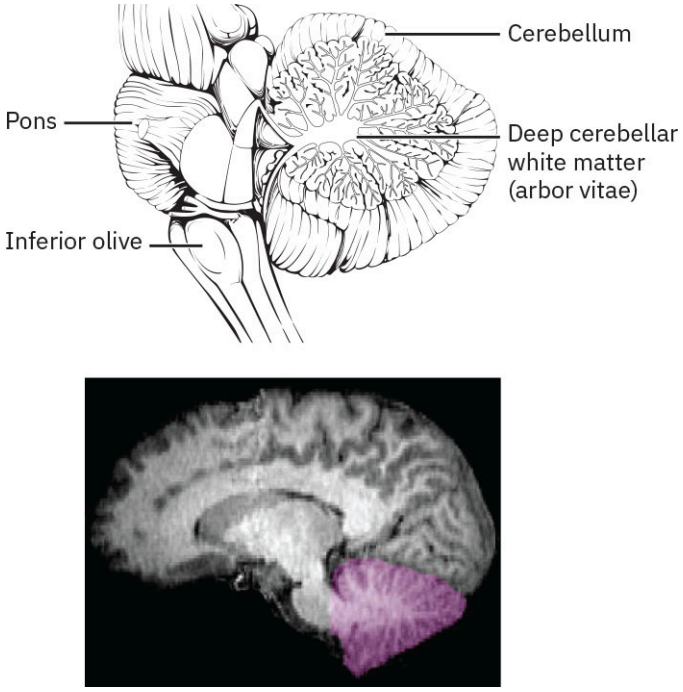

FIGURE 23.6 The cerebellum is situated on the posterior surface of the brain stem. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LIFE-STAGE CONTEXT

Neurological Changes in Older Adults

Several neurological changes occur with aging that affect the brain's functioning. These changes include the following:

- shrinking of certain areas of the brain, which can result in decreased ability to learn new things or perform difficult mental activities
- decreased communication between neurons within the brain
- decreased blood flow to the brain
- atrophy of mass and loss of nerve cells in the brain and spinal cord
- slower neuron message processing, resulting in slower muscle reactions
- accumulation of waste products or chemicals in brain tissues after cellular breakdown

Spinal Cord

The spinal cord is the second major organ of the CNS. The length of the spinal cord is divided into regions that correspond to the regions of the vertebral column. Immediately adjacent to the brain stem is the cervical region, followed by the thoracic, then the lumbar, and finally the sacral region (Figure 23.7). The spinal cord is not the full length of the vertebral column because the spinal cord does not grow significantly longer after the first or second year of life, but the skeleton does continue to grow. The nerves that emerge from the spinal cord pass through the intervertebral foramina at the respective levels.

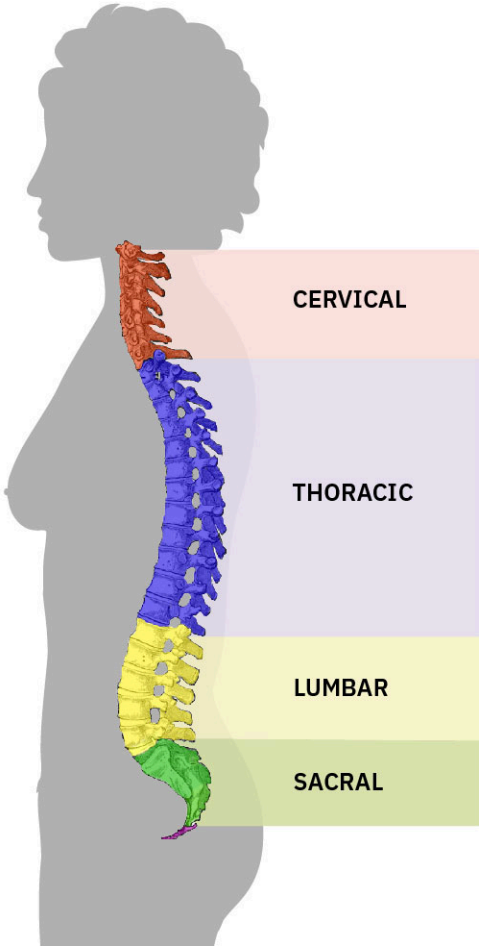

FIGURE 23.7 There are four regions of the spinal column including the cervical, thoracic, lumbar, and sacral regions. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

As the vertebral column grows, these nerves grow with it and result in a long bundle of nerves that resembles a horse's tail. This is named the **cauda equina** (Figure 23.8).

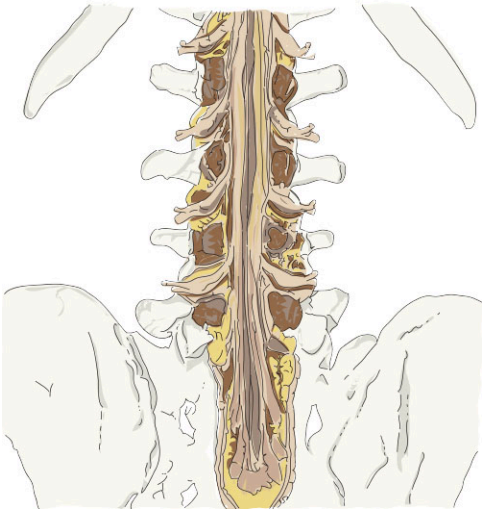

FIGURE 23.8 The bundle of nerve roots located at the end of the spinal cord is called the cauda equina because it resembles a horse's tail. (credit: "Cauda Equina" by Daniel Donnelly/Flickr, CCBY 4.0)

Neural Pathways

The **gray matter** of the spinal cord, a butterfly-shaped structure, is subdivided into regions that are referred to as horns (Figure 23.9). Gray matter consists of neuronal cell bodies and is involved in processing information in the

brain. The **posterior horn** (or dorsal horn) is responsible for sensory processing. The **anterior horn** (or ventral horn) sends out motor signals to the skeletal muscles. The **lateral horn**, which is only found in the thoracic, upper lumbar, and sacral regions, contains motor neuron cell bodies of the autonomic nervous system. The myelinated nerve fibers that facilitate communication between different regions of the brain are called **white matter**. Just as the gray matter is separated into horns, the white matter of the spinal cord is separated into columns. A column of nervous system fibers called an **ascending tract** carries sensory information up to the brain, whereas a **descending tract** carries motor commands from the brain.

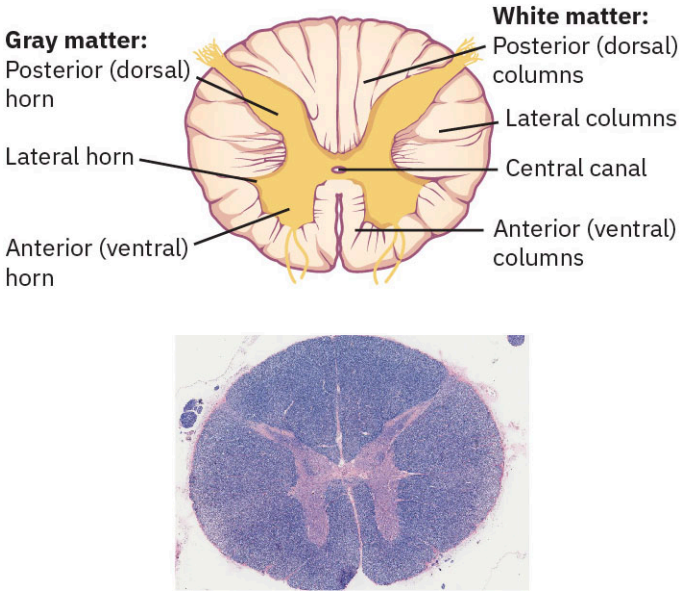

FIGURE 23.9 The thoracic spinal cord segment shows the posterior (dorsal), anterior (ventral), and lateral horns of gray matter and columns of white matter. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Peripheral Nervous System

As mentioned previously, the peripheral nervous system (PNS) is the part of the nervous system that lies outside of the brain and spinal cord. The PNS is responsible for transmitting sensory information from the body to the CNS and for sending motor commands from the CNS to the muscles and glands. The PNS contains cranial and spinal nerves, both of which are important for optimal neuromuscular functioning.

Cranial Nerves

A nerve attached to the brain is called a **cranial nerve**, which is primarily responsible for the sensory and motor functions of the head and neck. There are twelve cranial nerves, which are designated CNI through CNXII, using Roman numerals for 1 through 12 (Figure 23.10).

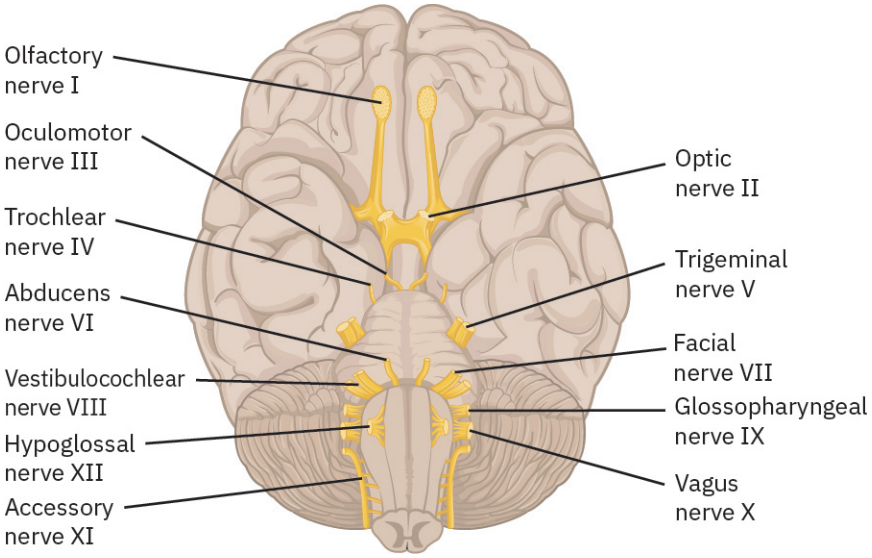

FIGURE 23.10 The anatomical arrangement of the roots of the cranial nerves can be observed from an inferior view of the brain. (credit: modification of work from Anatomy and Physiology 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Cranial nerves can be classified as sensory nerves, motor nerves, or a combination of both (mixed). Sensory axons enter the brain to synapse in a nucleus. Motor axons connect to the skeletal muscles of the head or neck. Nurses should be able to name the cranial nerves and provide a brief description of their function and their source (sensory ganglion, motor nucleus, or mixed) (Table 23.1).

Number/Name	Function	Source
I. Olfactory	Smell	Sensory
II. Optic	Vision	Sensory
III. Oculomotor	Eye movement and pupil reflexes	Motor
IV. Trochlear	Eye movement	Motor
V. Trigeminal	Sensory/motor—face, chewing	Mixed
VI. Abducens	Eye movement	Motor
VII. Facial	Face movement, taste	Mixed
VIII. Vestibulocochlear (Auditory)	Hearing, balance	Sensory
IX. Glossopharyngeal	Swallowing, throat sensations, taste	Mixed
X. Vagus	Movement and sensations of abdominal organs	Mixed
XI. Accessory (Spinal)	Head and neck movement	Motor
XII. Hypoglossal	Tongue movement	Motor

TABLE 23.1 Functions of the Twelve Cranial Nerves

LINK TO LEARNING

Learn more about the cranial nerves and how to conduct a cranial nerve assessment (https://openstax.org/r/77crannerv) in the human body.

Spinal Nerves

A **spinal nerve** is a nerve that is connected to the spinal cord. There are thirty-one spinal nerves, named for the level of the spinal cord at which each one emerges. There are eight pairs of cervical nerves designated C1 to C8, twelve pairs of thoracic nerves designated T1 to T12, five pairs of lumbar nerves designated L1 to L5, five pairs of sacral nerves designated S1 to S5, and one pair of coccygeal nerves. The nerves are numbered from the superior to inferior positions, and each emerges from the vertebral column through the intervertebral foramen at its level. Spinal nerves extend outward from the vertebral column to innervate the periphery. The nerves in the periphery are not straight continuations of the spinal nerves, but rather the reorganization of the axons in those nerves to follow different courses (Figure 23.11).

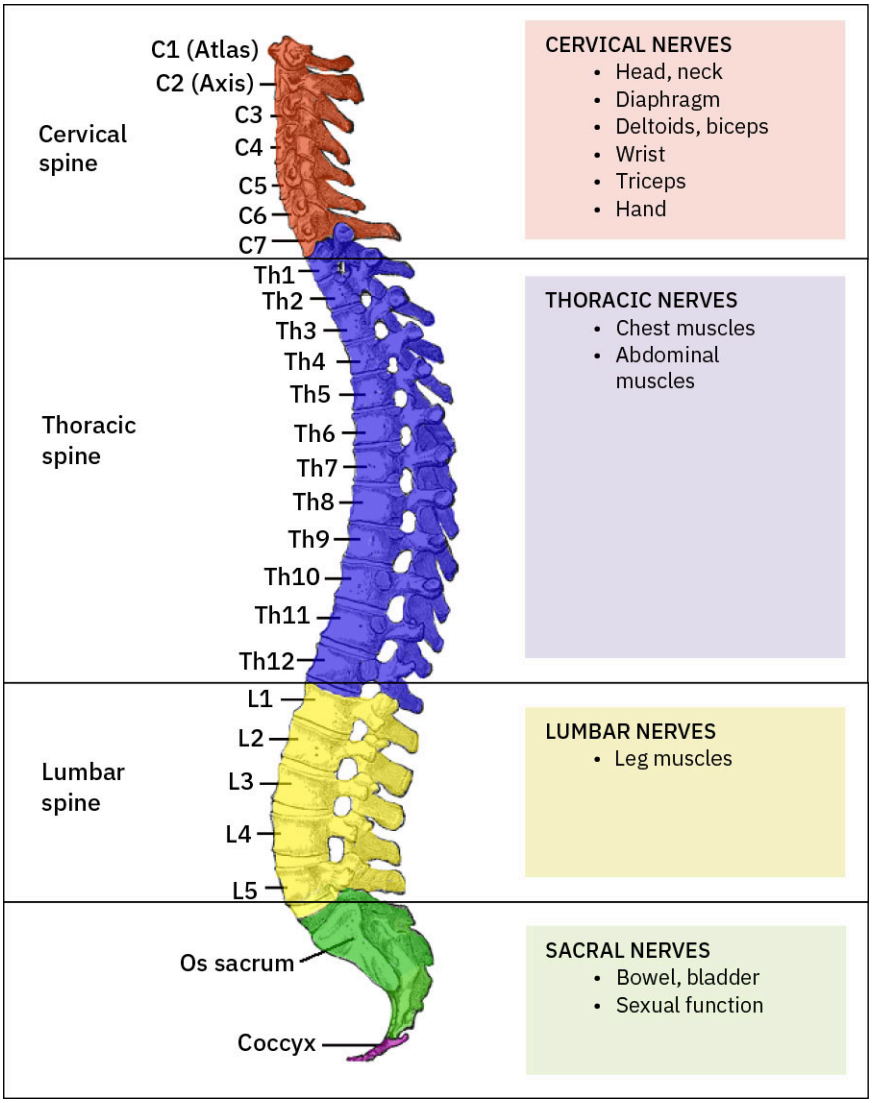

FIGURE 23.11 Each vertebrae is numbered and each numbered spinal nerve emerges from the vertebral column and branches off into alternate pathways to innervate different parts of the body. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Autonomic Nervous System

The **autonomic nervous system (ANS)** is a component of the peripheral nervous system (PNS) that is responsible

for involuntary control of the body. This involuntary control is usually for the sake of homeostasis, a steady state of body systems that living organisms maintain by regulating their internal environment. Sensory input for autonomic functions can be from sensory structures tuned to external or internal environmental stimuli. The motor output extends to smooth and cardiac muscle as well as glandular tissue, which results in involuntary muscle or tissue action. The role of the ANS is to regulate the organ systems of the body to control homeostasis. Sweat glands, for example, are controlled by the ANS. When you are hot, sweating helps cool your body down. That is a homeostatic mechanism. But when you are nervous, you might start sweating also. That is not homeostatic; it is the physiological response to an emotional state. The ANS is divided into two different systems: the sympathetic nervous system and the parasympathetic nervous system.

Sympathetic Nervous System

The **sympathetic nervous system** becomes activated during times of tension or stress, resulting in "fight or flight" types of reactions. When the body senses an external danger or threat, the sympathetic nervous system causes involuntary reactions in the body that help combat the perceived threat. These reactions include the following:

- increased heart rate, which increases the amount of oxygen being delivered to the rest of the body
- airway muscle relaxation, allowing improved oxygen delivery to the lungs
- pupil dilation, resulting in improved vision
- slowed digestion, allowing for energy to be used for more important tasks such as running or fighting

Parasympathetic Nervous System

The **parasympathetic nervous system** is the part of the ANS that results in involuntary "rest and digest" types of reactions. These reactions include the following:

- pupil constriction to limit the amount of light entering the eyes, allowing for a state of rest
- saliva production in the mouth to aid with digestion
- tightening of airway muscles to reduce the work of breathing while at rest
- decreased heart rate to lessen the workload on the heart, allowing for rest and recovery
- increased rate of digestion to break down food to store as energy for later use

LINK TO LEARNING

Learn more about comparing the parasympathetic and sympathetic nervous systems (https://openstax.org/r/77nervsys) of the human body.

Structures and Functions of the Musculoskeletal System

The musculoskeletal system is composed of bones, muscles, joints, and connective tissue. These structures are connected and allow the body to move and function while also protecting internal organs from injury.

Muscles

Muscle is one of the four primary tissue types of the body. The three different types of muscle tissue are cardiac muscle, smooth muscle, and skeletal muscle. The three muscle tissues have some properties in common; they all exhibit a quality called **excitability**, which occurs when the plasma membranes change their electrical states (from polarized to depolarized) and send an electrical wave called an action potential along the entire length of the membrane. The nervous system can influence the excitability of cardiac and smooth muscle to some degree. Skeletal muscle, however, completely depends on signaling from the nervous system to work properly. On the other hand, both cardiac muscle and smooth muscle can respond to other stimuli, such as hormones and local stimuli.

Cardiac Muscle

The **cardiac muscle** tissue is found only in the heart. Highly coordinated contractions of cardiac muscle pump blood into the vessels of the circulatory system. Contractions of the heart (heartbeats) are controlled by specialized cardiac muscle cells called pacemaker cells that directly control heart rate. Although cardiac muscle cannot be consciously controlled, the pacemaker cells respond to signals from the ANS to speed up or slow down the heart rate. The pacemaker cells can also respond to various hormones that modulate heart rate to control blood pressure.

Smooth Muscle

The **smooth muscle** is present in the walls of hollow organs such as the urinary bladder, uterus, stomach, and intestines. The walls of passageways (e.g., arteries and veins of the circulatory system) and the tracts of the respiratory, urinary, and reproductive systems also contain smooth muscle. Smooth muscle present in the eyes functions to change the size of the iris and alter the shape of the lens. Smooth muscle in the skin causes hair to stand erect in response to cold temperature or fear.

Skeletal System

The **skeletal system** forms the rigid internal framework of the body. The skeletal system is divided into axial and appendicular skeletons. The adult **axial skeleton** consists of eighty bones that form the head and trunk of the body. The **appendicular skeleton** consists of the limbs, which are attached to the axial skeleton. The appendicular skeleton has 126 bones. The skeletal system consists of bones, joints, muscle, and different types of connective tissue.

Bones

A hard, dense connective tissue that forms most of the adult skeleton is called a **bone** and it is the primary support structure of the body (Figure 23.12). There are 206 bones in the adult human body. The bones of the skeletal system perform the following critical functions for the human body:

- body support
- movement facilitation
- internal organ protection
- blood cell production
- mineral and fat storage and release

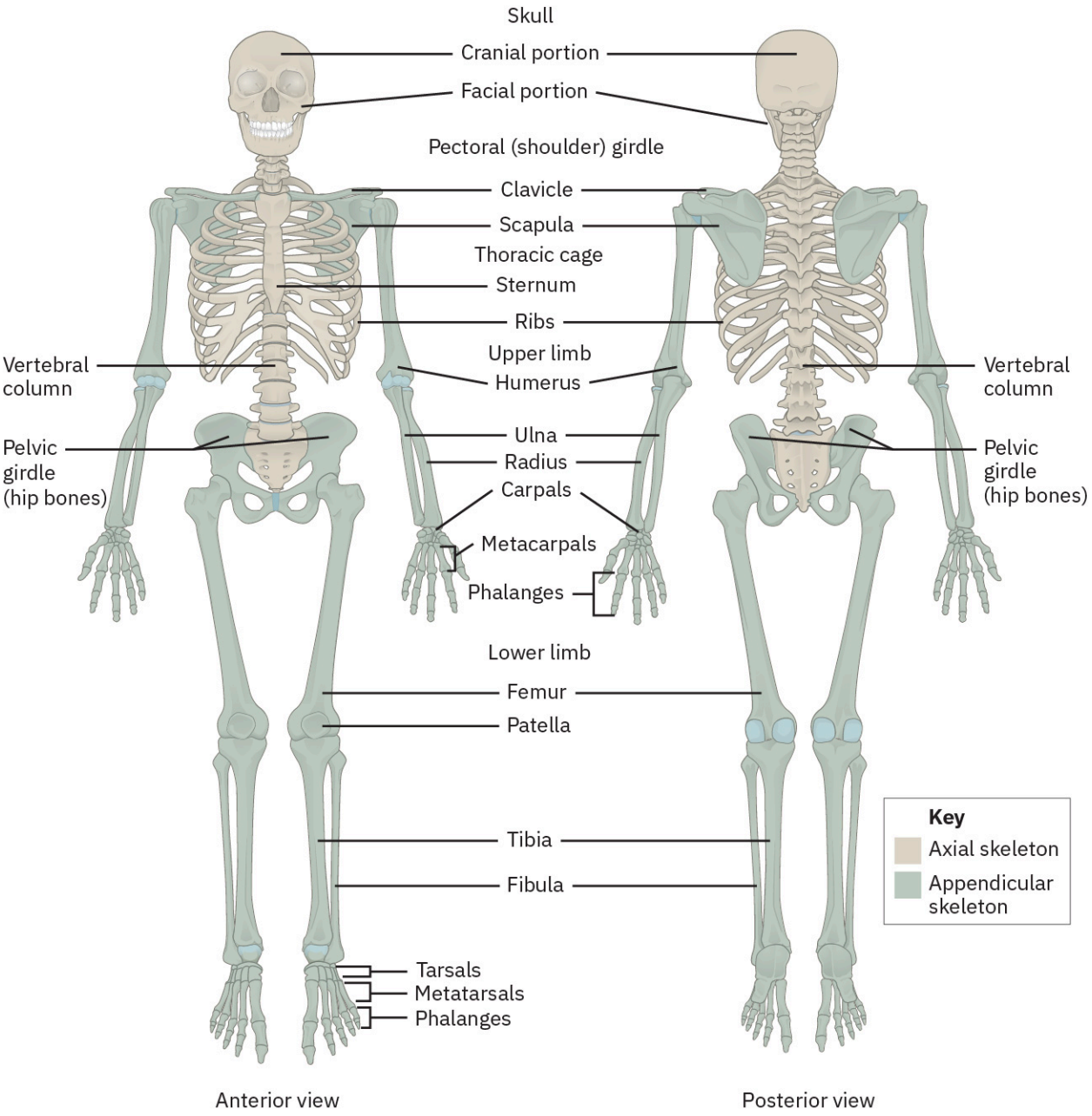

FIGURE 23.12 There are 206 bones within the adult skeletal system. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Joints

Except for the hyoid bone in the neck, each of the bones in the body is connected to at least one other bone. A **joint** is the location where bones come together. Many joints allow for movement between the bones. A **ligament** and a **tendon** are tissues that support a joint; the articulating surfaces of the adjacent bones can move smoothly against each other. However, the bones of other joints may be joined to each other by **cartilage**, a specific type of connective tissue that provides structural support and flexibility. These joints are designed for stability and provide for little or no movement. Importantly, joint stability and movement are related to each other. This means that stable joints allow for little or no mobility between the adjacent bones. Conversely, joints that provide the most movement between bones are the least stable. Understanding the relationship between joint structure and function will help to explain why particular types of joints are found in certain areas of the body.

The articulating surfaces of bones at joints considered stable with little or no mobility are strongly united to each other. For example, most of the joints of the skull are held together by fibrous connective tissue and do not allow for movement between the adjacent bones. This lack of mobility is important because the skull bones serve to protect

the brain. Similarly, other joints united by fibrous connective tissue allow for very little movement, which provides stability and weight-bearing support for the body. For example, the tibia and fibula of the leg are tightly united to give stability to the body when standing.

At other joints, the bones are held together by cartilage, which permits limited movements between the bones. Thus, the joints of the vertebral column only allow for small movements between adjacent vertebrae, but when added together, these movements provide the flexibility that allows your body to twist, or bend to the front, back, or side.

In contrast, at joints that allow for wide ranges of motion, the articulating surfaces of the bones are not directly united to each other. Instead, these surfaces are enclosed within a space filled with lubricating fluid, which allows the bones to move smoothly against each other. These joints provide greater mobility, but because the bones are free to move in relation to each other, the joint is less stable. Most of the joints between the bones of the appendicular skeleton are this freely moveable type of joint. These joints allow the muscles of the body to pull on a bone and thereby produce movement of that body region. Your ability to kick a soccer ball, pick up a fork, and dance the tango depends on mobility at these types of joints.

Skeletal Muscle Tissue

The best-known feature of **skeletal muscle** is its ability to contract and cause movement. Skeletal muscles act not only to produce movement but also to stop movement, such as resisting gravity to maintain posture. Small, constant adjustments of the skeletal muscles are needed to hold a body upright or balanced in any position. Muscles also prevent excess movement of the bones and joints, maintaining skeletal stability and preventing skeletal structure damage or deformation. Joints can become misaligned or dislocated entirely by pulling on the associated bones; muscles work to keep joints stable. Skeletal muscles are located throughout the body at the openings of internal tracts to control the movement of various substances. These muscles allow functions, such as swallowing, urination, and defecation, to be under voluntary control. Skeletal muscles also protect internal organs (particularly abdominal and pelvic organs) by acting as an external barrier or shield to external trauma and by supporting the weight of the organs.

Connective Tissue

As indicated by its name, one of the major functions of **connective tissue** is to connect tissues and organs. The different types of connective tissue found in the musculoskeletal system include cartilage, ligaments, and tendons (Table 23.2).

Type	Description
Cartilage	• Tough elastic fibrous tissue that covers bone surfaces at joints • Provides structural support and flexibility and helps reduce friction during joint movement
Ligaments	• Tough elastic bands of tissue surrounding joints that connect bones together • Provides stability and limits joint movement
Tendons	• Tough connective tissue located on each side of a joint that connects muscles to bones • Controls joint movement

TABLE 23.2 **Types of Connective Tissue Found in the Musculoskeletal System**

Functions of the Neuromuscular System

The nervous system and musculoskeletal system work together to form the neuromuscular system. Signals within the nervous system act on the muscular system to provide body movement, posture control, breathing, and maintenance of homeostasis.

Essential Body Movement

The defining characteristic of the **somatic nervous system** is that it controls skeletal muscles. Somatic senses

inform the nervous system about the external environment, but the response to that is through voluntary muscle movement. The term *voluntary* suggests that there is a conscious decision to make a movement. Another specialization of the skeletal muscle is the site where a motor neuron's terminal meets the muscle fiber—called the **neuromuscular junction (NMJ)**. This is where the muscle fiber first responds to signaling by the motor neuron. Every skeletal muscle fiber in every skeletal muscle is innervated by a motor neuron at the NMJ. Excitation signals from the neuron are the only way to functionally activate the fiber to contract.

Control of Posture

Maintaining good body posture is not as simple as it sounds. Even when muscles are not producing movement, they are contracted at least a small amount to produce muscle tone. The tension produced by muscle tone allows muscles to continuously stabilize joints and maintain posture. Muscle tone is accomplished by a complex interaction between the nervous system and skeletal muscles that results in the activation of a few motor units at a time, most likely in a cyclical manner. As a result, muscles never fatigue completely, because some motor units can recover while others are active.

Breathing

Unless you actively practice yoga and meditation, you may never have consciously thought about breathing. That is because breathing is an involuntary process controlled by the ANS. Signals from the external environment as well as internal signals from your body are sent to the brain, which acts as the command center to control breathing. Nerves from the spinal cord send these messages to breathing muscles such as the diaphragm and intercostal muscles to adjust breathing rates and patterns as needed. This all occurs without any conscious thought about breathing on your part—isn't the human body amazing?

Maintaining Homeostasis

Maintaining homeostasis requires that the body continuously monitor its internal conditions. From body temperature to blood pressure to levels of certain nutrients, each physiological condition has a particular set point. A **set point** is the physiological value around which the normal range fluctuates. A normal range is the restricted set of values that is optimally healthy and stable. For example, the set point for normal human body temperature is approximately 98.6°F (37°C). Physiological parameters, such as body temperature and blood pressure, tend to fluctuate within a normal range that is a few degrees above and below that point. Control centers in the brain and other parts of the body monitor and react to deviations from homeostasis using negative feedback. A mechanism that reverses a deviation from the set point is called **negative feedback**. Therefore, negative feedback maintains body parameters within their normal range. The maintenance of homeostasis by negative feedback is continuously occurring throughout the body and is overseen by the neuromuscular system. For example, skin contains thermoreceptors that can detect an increase in body temperature. These receptors then use negative feedback mechanisms to send messages to the brain to initiate measures to cool down the body such as sweating or hyperventilating.

23.2 Factors Affecting Neuromuscular Functioning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify diagnostic testing for neuromuscular functioning
- Discuss common disorders that affect neuromuscular functioning
- Describe the effects of neuromuscular impairment

Now that we have outlined how the neuromuscular system should function normally, we can discuss potential abnormal findings and conditions that affect this system. This section will provide an overview of various diagnostic tests that can be used to detect abnormalities as well as discuss several neuromuscular disorders in more detail.

Diagnostic Testing for Neuromuscular Functioning

There are several diagnostic tests that can be used to help diagnose specific neuromuscular disorders or rule out other conditions that may be causing similar symptoms. These include blood tests, electromyography, radiographic imaging, nerve condition velocity testing, muscle biopsies, and genetic tests.

Blood Tests

No specific blood tests are available that diagnose disorders of the neuromuscular system with absolute certainty, however several tests are typically performed to assist with confirmation of the disorder or to rule out other causes. Nurses should understand some of the most common blood tests used to help diagnose neuromuscular disorders (Table 23.3).

Test	Description
Erythrocyte sedimentation rate (ESR)	• Measures the rate at which red blood cells settle at the bottom of a test tube containing blood. • Higher values indicate inflammation, which could be consistent with a neuromuscular disorder. • Note: Many conditions cause elevated ESR, so this is not the most accurate diagnostic test.
Creatine kinase (CK)	• Normal muscle enzyme that leaks out into the blood when muscle damage occurs. • Elevated values may be indicative of a neuromuscular disorder that has caused muscle damage. • Note: Many conditions cause muscle damage, so this is not the most accurate diagnostic test.
Electrolytes	• Any of various ions (e.g., sodium, potassium, chloride) that have a positive or negative electrical charge when dissolved in water. • Crucial for many body processes (e.g., regulating chemical reactions, conducting nerve impulses, contracting muscles, regulating pH levels, maintaining the balance between fluids inside and outside the cells). • Key method to diagnose a wide range of medical conditions and diseases. • Imbalances in electrolytes can cause muscle weakness or paralysis, so this test can be used to rule out other causes of symptoms.
Antibody tests	• Several antibody tests can be performed to determine whether the patient has an infection. • Many neuromuscular disorders are caused by a virus, so this test can help determine a potential cause.

TABLE 23.3 Blood Tests Used to Assist with Diagnosis of Neuromuscular Disorders

Electromyography

An **electromyography (EMG)** is used to evaluate how muscles respond to nervous system stimulation. An EMG is performed by inserting small needles, called electrodes, through the skin until they are in the underlying muscles (Figure 23.13). After the needles are placed, the provider asks the patient to perform certain movements of the extremity (e.g., contraction, relaxation). When the muscles contract, the electrical activity in the muscles is recorded by the needle electrodes. This information is sent to a computer where the provider can review the test results in real time. This procedure takes anywhere from sixty to ninety minutes and typically does not cause the patient much pain. However, some patients do report pain with insertion of the needle and lingering soreness in the muscles for a few days after the procedure.

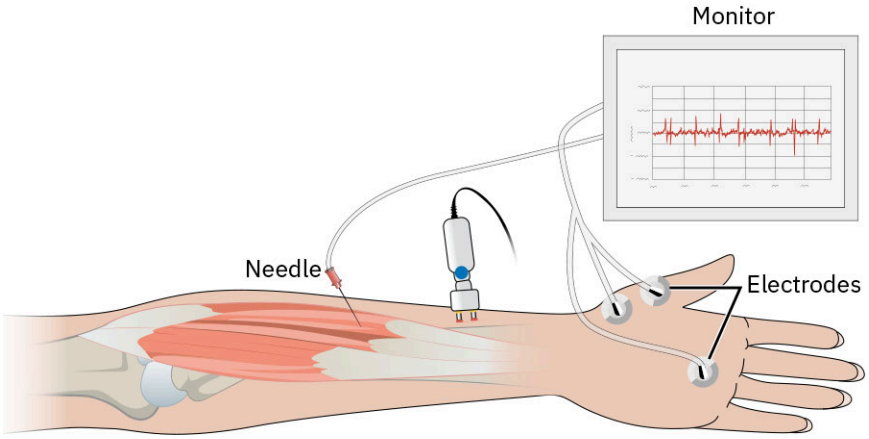

FIGURE 23.13 During an electromyography test (muscle test), a small needle is inserted into the muscle of the arm and electrical activity associated with voluntary muscle movements is recorded as waves on the monitor. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

During the test, the provider is looking for abnormal electrical activity patterns with various muscle movements. Some of the neuromuscular conditions that can be diagnosed with this type of testing include the following:

- peripheral neuropathy
- carpal tunnel syndrome
- sciatica
- pinched nerves,
- muscular dystrophy
- amyotrophic lateral sclerosis (ALS)
- myasthenia gravis

Radiographic Imaging

Several radiographic imaging tests can be used to help diagnose neuromuscular conditions. The most common are computed tomography (CT) scans and magnetic resonance imaging (MRI). The images obtained from these scans can help identify changes or abnormalities in muscle or nervous tissue that may be indicative of neuromuscular disorders. Although these tests are not usually conclusive for specific disorders, they can be used to show changes within the tissue that warrant additional follow-up and testing (Figure 23.14). Also, these scans can be used periodically after diagnosis of a neuromuscular condition to monitor the progression of the disorder over time.

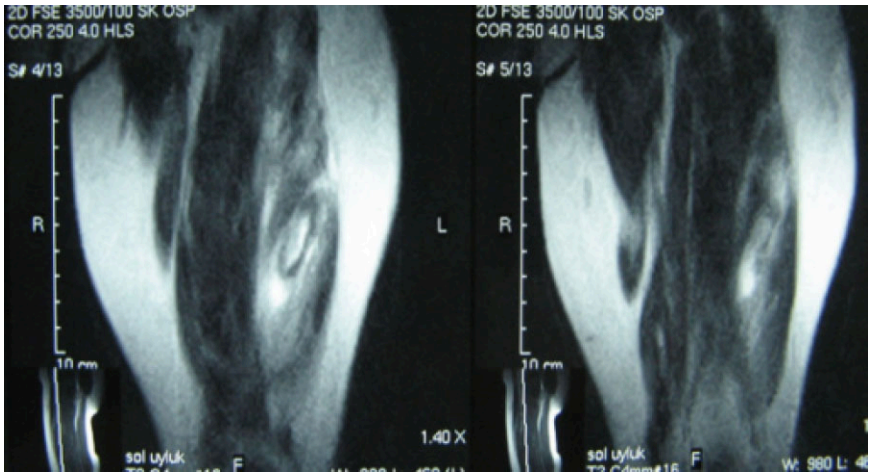

FIGURE 23.14 An MRI scan shows injury to the muscle, indicating the need for additional diagnostic testing. (credit: Aydemir G, Cakmak S, Aydinoz S/NIH, CC BY 2.0)

Nerve Conduction Velocity Testing

A nerve conduction study, or **nerve conduction velocity (NCV) testing**, shows how quickly electrical signals move through nerves in the body. Two electrodes are placed on the skin over the patient's nerves (Figure 23.15). One electrode delivers the electrical stimulus, and the other electrode records the speed of the impulse, or how quickly

the electrical stimulus moves from one electrode to the other.

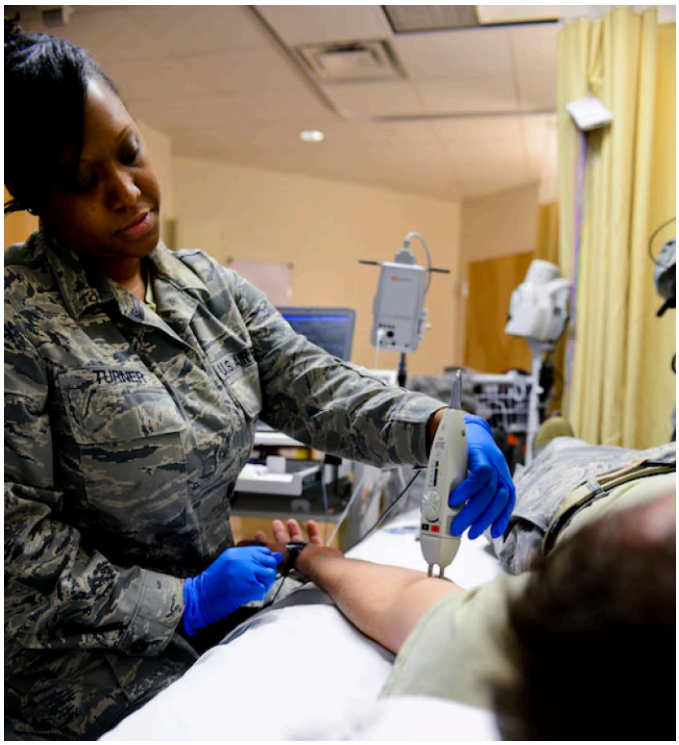

FIGURE 23.15 Two electrodes are placed on the skin over nerves as part of nerve conduction velocity testing. A very mild electrical impulse is sent through a patch or a handheld device to stimulate the nerve. (credit: Alex Durbin/Joint Base Langley-Eutis, Public Domain)

Often, this test is completed during the same visit as the EMG testing described earlier because they are performed with similar techniques and allow for more information to be obtained about the patient's condition. The main reason that NCV testing is used is to determine whether the disorder is caused by nerve issues or muscle problems. If the NCV testing is normal, it is likely that the disorder has a muscular cause. On the other hand, if the NCV testing is abnormal (slow), the cause of the issue is more likely stemming from the nervous system. Some of the disorders that NCV testing can help diagnose include the following:

- Guillain-Barré syndrome
- carpal tunnel syndrome
- Charcot-Marie-Tooth disease
- herniated discs
- neuropathy
- sciatica

LINK TO LEARNING

Learn more about electromyography and nerve conduction studies and how to prepare a patient (https://openstax.org/r/77emg) for these tests.

Muscle Biopsies

Muscle biopsies involve removing muscle tissue from the body for microscopic laboratory examination. The muscles used most often include the biceps or deltoids in the arms and shoulders or the quadriceps in the legs. This procedure is not used often because it is more invasive than other types of diagnostic testing, such as blood tests or imaging scans. However, it can be useful for determining specific types of muscle disorders if other tests come back inconclusive. Some examples of disorders that might be diagnosed using muscle biopsy include inflammatory myopathies (e.g., polymyositis, dermatomyositis) and specific types of muscular dystrophy.

Genetic Testing

Many neuromuscular disorders have a genetic component, meaning they can be inherited from parents. Often, when a parent or other close family member has a neuromuscular disorder, a genetic test is ordered to determine whether the disorder could have been passed on to the next generation. These tests can be performed by obtaining a swab from the cheek or a blood sample from which DNA can be analyzed. The DNA is examined for genetic mutations that are indicative of specific neuromuscular disorders. This type of test is the most accurate for diagnosing neuromuscular disorders that are genetic in nature.

Common Neuromuscular Disorders

Many disorders can affect the neurological and musculoskeletal systems simultaneously. Some of the conditions are common, whereas others are quite rare. Disorders of the neuromuscular system include Charcot-Marie-Tooth disease, congenital myopathy, muscular dystrophy, amyotrophic lateral sclerosis, myasthenia gravis, multiple sclerosis, cerebral palsy, and spinal cord injuries.

Charcot-Marie-Tooth Disease (CMT)

A progressive neuromuscular disorder, **Charcot-Marie-Tooth disease** affects one out of every 2,500 people in the United States, and more than three million people worldwide (CMT Research Foundation, n.d.). It is caused by genetic mutations, passed down from parent to child. CMT affects the peripheral nerves, most often those of the arms, hands, legs, and feet. As the disease progresses, the patient experiences worsening numbness and muscle weakness (Figure 23.16). Other symptoms of CMT include the following:

- weak grip
- tripping or imbalance
- shuffling or dragging feet while walking
- cold hands and feet
- numbness and tingling of hands and feet
- curled toes (“hammertoes”)
- high arches in the feet

FIGURE 23.16 Charcot-Marie-Tooth disease causes hammertoes in addition to other possible symptoms. (credit: Liao YC, Liu YT, Tsai PC, Chang CC, Huang YH, Soong BW, Lee YC/NIH, CC BY 4.0)

Currently, there is no cure for this disease. Symptom management is attempted with pain medications, foot splints, shoe inserts, and physical and occupational therapy, but these efforts do not treat the underlying disorder.

Congenital Myopathy

A genetic muscle deformity that is present from birth is called **congenital myopathy**. These conditions are rare but serious because they result in lack of muscle tone and severe muscle weakness. There are several subtypes of congenital myopathy, but they all cause similar symptoms including the following:

- decreased muscle tone, known as **hypotonia**
- muscle weakness, particularly in the neck, shoulders, and pelvis
- breathing and feeding issues
- developmental delays, such as being unable to sit up or roll over

- falling or stumbling

Treatment for congenital myopathy typically focuses on managing symptoms and improving quality of life. This may involve physical therapy to maintain muscle strength and mobility, occupational therapy to assist with daily activities, and respiratory therapy to address breathing difficulties. In some cases, medications such as corticosteroids or medications to improve muscle function may be prescribed. Assistive devices such as braces, walkers, or wheelchairs might also be used to aid mobility. Additionally, genetic counseling may be offered to families to understand the inheritance pattern and provide information about potential risks for future generations.

Muscular Dystrophy

A group of muscular disorders called **muscular dystrophy** are caused by genetic mutations. All types of muscular dystrophies result in progressive muscle weakness. Nurses should be aware of some of the more common types of muscular dystrophies and their key differences (Table 23.4).

Type	Characteristics
Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD)	• Most common types of muscular dystrophy. • Primarily affects males with onset between ages 2 and 3. • Primary symptom is muscle weakness, first affecting the proximal muscles and later affecting muscles of the extremities. • Other symptoms include calf enlargement, waddling gait, and inward curvature of the spine. • Results in eventual respiratory failure due to scoliosis and diaphragmatic muscle weakness. • Life expectancy for DMD is early 20s; BMD life expectancy is about 30 to 40 years of age.
Myotonic (DM)	• Affects males and females equally. • Muscle weakness typically begins between 10 and 30 years of age.
Limb-girdle (LGMD)	• Affects males and females equally. • Upper arms and legs are the first areas to experience muscle weakness.
Facioscapulohumeral (FSHD)	• Affects males and females equally. • Muscle weakness typically begins in early adulthood and affects the face, shoulders, and upper arms first.
Congenital (CMD)	• Rare, affecting 1 in 100,000 people. • Affects males and females equally. • Symptoms begin at birth or in early infancy.

TABLE 23.4 **Characteristics of the Most Common Types of Muscular Dystrophy** (Source: Centers for Disease Control and Prevention, 2024.)

Amyotrophic Lateral Sclerosis (ALS)

Previously known as Lou Gehrig disease, **amyotrophic lateral sclerosis (ALS)** is a progressive neurological disorder that affects motor neurons. Onset of ALS is variable but may occur between 40 and 70 years of age. A nerve cell that receives signals from the brain and spinal cord that cause voluntary skeletal muscle movements and breathing is called a **motor neuron**. As ALS progresses, more motor neurons die, resulting in muscle weakness, twitching, and atrophy. Eventually, ALS causes complete loss of control over voluntary movements including walking, talking,

eating, and even breathing. Some of the early symptoms of this condition include the following:

- muscle twitching, especially in the arms and legs
- muscle cramping
- spasticity of the muscles
- muscle weakness
- slurred speech
- difficulty swallowing

Other symptoms may develop later such as drooling, inability to form words and speak, unintended emotional displays (e.g., crying or laughing at inappropriate times), and severe weight loss. Unfortunately, there is no current cure for ALS; however, there are several medications available that have been shown to improve symptoms and slow the progression of the disease (e.g., riluzole [Exservan], edaravone [Radicava]). The majority of patients with ALS only survive two to five years after diagnosis (ALS Association, n.d.).

Myasthenia Gravis

An autoimmune disorder, **myasthenia gravis** is a disorder in which antibodies attack the neuromuscular junction (NMJ) of skeletal muscles, resulting in progressive muscle weakness (e.g., arms, hands, fingers, legs, neck) and fatigue. Initial symptoms of myasthenia gravis happen suddenly; although initial symptoms may be so mild that diagnosis is delayed. Symptoms of myasthenia gravis include the following:

- eyelid drooping, known as **ptosis** (Figure 23.17).
- double vision, known as **diplopia**
- difficulty swallowing, known as dysphagia
- difficulty changing facial expressions
- difficulty speaking
- weak neck muscles, making it difficult to support the head

FIGURE 23.17 Progressive muscle weakness in myasthenia gravis results in ptosis (i.e., drooping eyelids). (credit: Andrewya/Wikimedia Commons, Public Domain)

Several pharmacological therapies are available for the treatment of myasthenia gravis. These include cholinesterase inhibitors to improve communication between the nervous and musculoskeletal systems. Corticosteroids or immunosuppressants can also be used to help limit production of antibodies.

Multiple Sclerosis

A neurological disorder, **multiple sclerosis (MS)** causes immune system cells to attack **myelin**, the protective coating on nerves. MS symptoms typically begin between the ages of 20 and 40; however, the course of the disease varies from person to person. Some patients with MS may have a mild type, causing minimal symptoms. On the other hand, some patients may have a severe case that progressively worsens over time. In many cases, patients with MS have periods of exacerbation where symptoms are worse and periods of remission where symptoms improve temporarily. Nurses should understand the different subtypes of MS (Table 23.5).

Type of MS	Description
Relapsing-remitting	• Symptoms occur as exacerbations or "attacks." • Between attacks, symptoms improve or resolve completely, resulting in remission. • Remission times between attacks vary from weeks to years.
Secondary-progressive	• Occurs after being diagnosed with relapsing-remitting type. • Symptoms begin to worsen over time with significant deterioration in physical functioning.
Primary-progressive	• Progressively worsening symptoms from the beginning without any exacerbations or periods of remission.
Progressive-relapsing	• Most rare subtype. • Steadily worsening symptoms from the beginning with acute relapses that further worsen symptoms.

TABLE 23.5 Subtypes of Multiple Sclerosis

The earliest signs and symptoms of MS include the following:

- blurry or double vision
- muscle weakness, most often in the hands and legs
- muscle spasms
- tingling or numbness
- clumsiness when walking
- inability to control bladder
- dizziness
- fatigue

In the later course of the disease, cognitive dysfunction is common. Patients may have trouble focusing on tasks, thinking, learning new things, or remembering memories. Unfortunately, there is no definitive cure for MS at present. There are, however, many treatments available for symptom control. Specifically, corticosteroids are used in an attempt to prevent the body from attacking its own myelin cells. Several disease-modifying medications have been approved for treatment of MS that work similarly to steroids to suppress the immune system.

PATIENT CONVERSATIONS

Your Patient Has Received a New Diagnosis of Multiple Sclerosis

Scenario: Nurse walks into the patient's room to check vital signs. The patient has just been diagnosed with relapsing-remitting multiple sclerosis (MS).

Nurse: Hi, my name is Dana, and I'll be your nurse today. Please confirm your name and date of birth before we get started.

Patient: Sure. It's Serena James and my birthday is 11/24/1986.

Nurse: Great, thank you. Before I check your vital signs, I just wanted to check in and see how you're feeling. I know that you were recently diagnosed with multiple sclerosis, which may be difficult to process. How are you doing?

Patient: I've definitely been better. I'm only in my 30s, so it's really unfair! I didn't have any questions when the doctor was in here but now that I've had a little time to think, I have a million things to ask. Would you be able to answer some of my questions?

Nurse: Of course. And if there's any question I don't know the answer to, I'm happy to relay the question to your doctor for you.

Patient: Thank you so much. For starters, what is MS? Like, how in the world did I get it when I'm so young and healthy?

Nurse: That's a really good question. Unfortunately, so far science hasn't shown a specific cause of MS, so we don't really know. In most cases though, there is some kind of autoimmune action occurring in your body. That means that your immune system is attacking the outside coating of your nerves, which eventually slows down brain signals to your muscles.

Patient: That sounds terrifying! What will happen to me when those signals are slowed down?

Nurse: It's hard to say because symptoms vary from person to person depending on the form of MS that you have, but most of the time symptoms of MS include blurry vision, muscle weakness, tingling in the hands and feet, and dizziness. Later on, you might start dealing with confusion or have trouble focusing on tasks.

Patient: What do you mean, the "form" I have?

Nurse: There are several different types of MS and thankfully, you were diagnosed with the mildest type. It's called relapsing-remitting MS. This means that you'll have periods of time where you have exacerbations, or "attacks" during which your symptoms get worse, but you'll also have periods of remission where your symptoms improve. Remission times can last anywhere from a few weeks to a few years.

Patient: I suppose that's reassuring. Are there any treatments available for it?

Nurse: There's no cure at the moment, but there are a lot of treatment options to help the symptoms and slow down the progression of the disease. A lot of patients with MS benefit from being on steroids that can slow your immune system down, which in turn slows down the disease. I think you would really benefit from a support group where you can talk about these things with other people your age who have also been diagnosed with this condition. Would it be okay if I print some resources and phone numbers for you to connect with these groups?

Patient: Yes, I would love that. Thank you so much!

Nurse: You're very welcome. I'm so sorry that you're dealing with this. Please let me know if there is anything else I can do to help you.

Cerebral Palsy

An umbrella term for a group of disorders that affect the ability to move and stay balanced is **cerebral palsy (CP)**, which occurs because of damage to the brain during pregnancy, childbirth, or in early infancy. There are several subtypes, each with their own associated signs and symptoms. Some early signs that a baby may have one of the forms of CP include the following:

- head lag when being picked up from lying on the back
- overly stiff or floppy extremities
- overextension of back and neck, making it seem as if the baby is pushing themselves away from the caregiver when being held
- leg stiffening or scissoring when being picked up
- inability to roll over after 6 months of age
- lopsided crawling or inability to crawl at all

Currently, there is no cure for CP; however, several interventions are available to treat symptoms of the condition. These interventions include medications, braces and adaptive devices, physical and occupational therapies, and potentially surgery in severe cases.

Spinal Cord Injuries

When there is damage to the spinal cord, a **spinal cord injury** occurs, often as a result of trauma (e.g., a motor vehicle accident, a fall) or cancer. The rest of the body below the damaged level of the spinal cord is affected and often results in irreversible damage and limited mobility. In some cases, the damage to the spinal cord is incomplete, leaving some sensation and mobility below the level of damage. However, in complete spinal cord injury, all feeling and ability to control movement are lost. This complete loss of sensation and mobility is called **paralysis**. Paralysis can be further classified as **tetraplegia** (quadriplegia), which is paralysis from the neck down, or **paraplegia**, which is paralysis of the legs and portions of the trunk but not the arms. Common symptoms of spinal cord injuries include the following:

- immobility of affected extremities
- loss or changes in sensation (e.g., feeling extreme temperatures)
- loss of bowel or bladder control
- involuntary muscle spasms
- hyperactive reflexes
- sexual dysfunction
- trouble breathing (more common with higher spinal cord injuries)

Treatment for spinal cord injuries depends on the extent of the damage but typically involves intense physical and occupational therapy.

REAL RN STORIES

Spinal Cord Injury

Nurse: Frankie, BSN
Clinical setting: Intensive care unit (ICU)
Years in practice: 5
Facility location: The inner city of a large metropolitan area in California

I arrived at work for my night shift at 1700 hours and was told that I'd be floating to the emergency department (ED). After I arrived in the ED, I was told by the charge nurse that a patient with suspected spinal cord injury would be arriving any minute and that I was being assigned to that patient. Not even three minutes later, paramedics rushed through the door with the patient.

The paramedics looked very concerned as they wheeled my patient into his assigned room. I could see that the patient was already intubated, on a ventilator, had a cervical collar on, and was not moving any of his extremities. Adhering to cervical spine precautions, we moved the patient from the stretcher onto the hospital bed. The paramedics then gave me a quick report of what happened.

"This is Josh Myers, 17-year-old male. He was swimming with friends and dove into shallow water. He was underwater for a few minutes before his friends realized he wasn't coming up to the surface. His friends pulled him out and called 911. They did CPR and by the time we got there he had a pulse, but we immediately had to intubate the patient. We have not seen any purposeful movement in any of his extremities, so we're worried about a high spinal cord injury. His parents have been contacted and they're on their way here now."

I began to assess the patient, confirming that there was no purposeful movement in his extremities. The trauma provider ordered a STAT CT scan, which showed a cervical spinal cord injury. I cared for this patient for three days in a row, ultimately learning that he would need to be on a ventilator for the rest of his life because the injury occurred so high in the spinal cord. The patient's mental state remained intact, which made this situation quite difficult for him to process, being only 17 years old. As a nurse, it was difficult for me as well to see a healthy teenager be permanently disabled from a completely preventable accident.

Effects of Neuromuscular Impairment

There are many disorders that can adversely affect the neuromuscular system, all with different causes and symptoms. However, many of these disorders share similar symptoms, including loss of balance; muscle weakness

and stiffness; muscle atrophy; pain; and breathing, swallowing, and vision impairment.

Loss of Balance

Loss of balance in neuromuscular conditions occurs via two main mechanisms. First, neuromuscular disorders cause muscle weakness, which in turn makes it difficult to maintain balance and posture. When muscles of the trunk and core are weak, the center of gravity of the body is off, making it difficult to stay balanced. The other mechanism behind loss of balance is related to slow nerve signals being sent to the muscles, such as seen in multiple sclerosis. Essentially, the muscles are not receiving signals from the brain in a timely manner, making it difficult to move in a way that consciously or unconsciously maintains balance and posture. Loss of balance can be dangerous, especially in older adults, who are already more prone to falls. For neuromuscular conditions that cause a loss of balance, adaptive devices may be required to assist with ambulation and other movements to decrease the risk of a fall and subsequent injury.

Muscle Weakness and Stiffness

Muscle weakness and/or stiffness are hallmark symptoms of many neuromuscular conditions. In fact, they are often the presenting symptom that indicates the need for follow-up, which leads to eventual diagnosis of the disorder. In some conditions, such as with myasthenia gravis, muscle weakness is related to the direct muscle damage that occurs as part of an autoimmune system attack on muscle tissue. In many other neuromuscular conditions, brain or nerve damage results in slowing of nerve signals sent to muscles. With a lack of nerve signals being sent to skeletal muscles, they are not used as often or as efficiently, resulting in weakness related to immobility. Most neuromuscular conditions that cause muscle weakness require extensive physical and occupational therapy in conjunction with adaptive devices to preserve and improve the patient's mobility.

Muscle Atrophy

Wasting and breakdown of muscle tissue, **muscle atrophy**, is another common clinical manifestation of many neuromuscular disorders (Figure 23.18). When muscles are not being used often enough, they become weak and waste away. This wasting away of muscles further contributes to the cycle of muscle weakness, resulting in an inability to effectively move and maintain balance and posture.

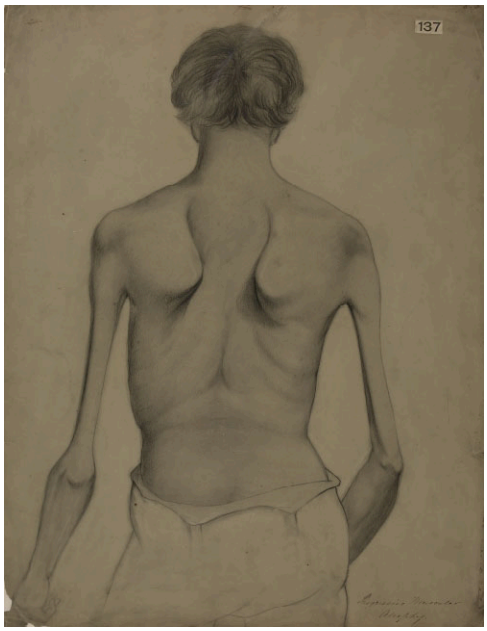

FIGURE 23.18 Muscle atrophy occurs as a manifestation of many neuromuscular conditions. (credit: "Case of progressive muscular atrophy"/Wellcome Images, CC BY 4.0)

Pain

Chronic pain is a common clinical manifestation of many neuromuscular conditions. In some conditions, such as Charcot-Marie-Tooth disease, pain can be severe and debilitating, affecting all aspects of everyday life. Other conditions, such as mild forms of multiple sclerosis, may cause some pain but not enough to significantly affect activities of daily living (ADLs). As with all patients, it is important for the healthcare team to recognize that "pain is

what the patient says it is," and treat them accordingly. It is also important to know that patients with neuromuscular disorders often have good days where pain is minimal and bad days where pain is debilitating. Pain management should be an included component in the care plan for every patient who is diagnosed with a neuromuscular disorder.

Breathing Impairment

Breathing impairment may occur with some neuromuscular disorders, most often at the end of the course of the disease. In conditions that cause muscle weakness and atrophy, muscles such as the diaphragm and intercostal muscles are eventually affected, resulting in an inability to breathe effectively. In fact, respiratory muscle weakness is one of the leading causes of death in patients with neuromuscular disorders (Khanbabaee et al., 2023). Additionally, in conditions that affect the cervical spinal cord, such as with high spinal cord injury, the nerves that innervate the breathing center of the brain may be affected, which inhibits the patient's ability to breathe. These patients often require a **tracheostomy** (an opening in the trachea into which a tube is placed that allows for mechanical ventilation to be delivered) for the course of their life because they are no longer able to breathe or breathe adequately on their own.

Swallowing Impairment

Difficulty swallowing, or dysphagia, is a common clinical manifestation of many neuromuscular disorders. Muscles of the mouth, pharynx, and upper esophagus become weakened, making it difficult for the patient to chew and swallow effectively. This is a concern for many reasons. First and foremost, dysphagia increases the risk of **aspiration**, which occurs when food or other foreign particles enter the airway. Aspiration can become life-threatening when it limits the patient's ability to breathe effectively. Another concern with dysphagia is that it can significantly and adversely affect the patient's quality of life. Dysphagia can cause malnutrition and can also take the enjoyment out of eating, resulting in depression and negative feelings toward food.

Vision Impairment

Vision impairment is not quite as common as the symptoms discussed in the previous sections but can still occur as a clinical manifestation of some neuromuscular disorders. In most cases, there is damage to the optic nerve, which results in pain and decreased vision. This is especially true for conditions such as multiple sclerosis that cause demyelination of nerve cells. When the optic nerve is attacked, vision is negatively affected.

23.3 Considerations for Care of Neuromuscular Impairment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe nursing considerations for impaired neuromuscular functioning
- Discuss collaborative care considerations for impaired neuromuscular functioning
- Identify environmental considerations for impaired neuromuscular functioning

Regardless of the setting you choose to practice in as a nurse, it is highly likely that you will at some point encounter a patient with neuromuscular impairment. When caring for these patients, nurses should keep in mind the nursing considerations specific to patients with neuromuscular conditions, the goals of collaboration between disciplines, and the importance of maintaining a safe environment to promote optimal outcomes.

Nursing Considerations

Nursing considerations for patients with neuromuscular impairment include physical needs such as maintaining respiratory function, promoting mobility, managing pain, ensuring optimal nutrition, and monitoring elimination and skin integrity. Beyond the physical needs, it is also important for nurses to consider the emotional needs of the patient because these disorders can negatively affect overall quality of life. The nurse can help by teaching coping strategies and providing family support. Infants and children with neuromuscular impairment also have developmental needs that nurses must be prepared to handle.

Physical Needs

Because the primary symptom of most neuromuscular disorders is muscle weakness, these patients have many physical needs. Specifically, they will need help maintaining respiratory function; preventing adverse effects of immobility; managing pain; and monitoring nutrition status, elimination, and skin integrity. Another significant role of

the nurse when caring for patients with neuromuscular impairment is assisting with activity of daily living (ADL).

Maintaining Respiratory Function

The muscle weakness that occurs with neuromuscular disorders eventually affects the diaphragm and intercostal muscles, resulting in impaired breathing. This typically occurs later in the course of the disease progression, and it is important for the nurse to be prepared to intervene in an effort to maintain respiratory function. First and foremost, it is important to always ensure airway patency. With weak muscles, it may be difficult for the patient to cough effectively and keep the airway clear of secretions. If secretions cannot be cleared, the patient is at high risk for aspiration and subsequent aspiration pneumonia, which can be life-threatening.

In some cases, patients with neuromuscular disorders may require supplemental oxygen to breathe effectively. In more mild situations, the patient may only need a few liters of oxygen via nasal cannula (Figure 23.19).

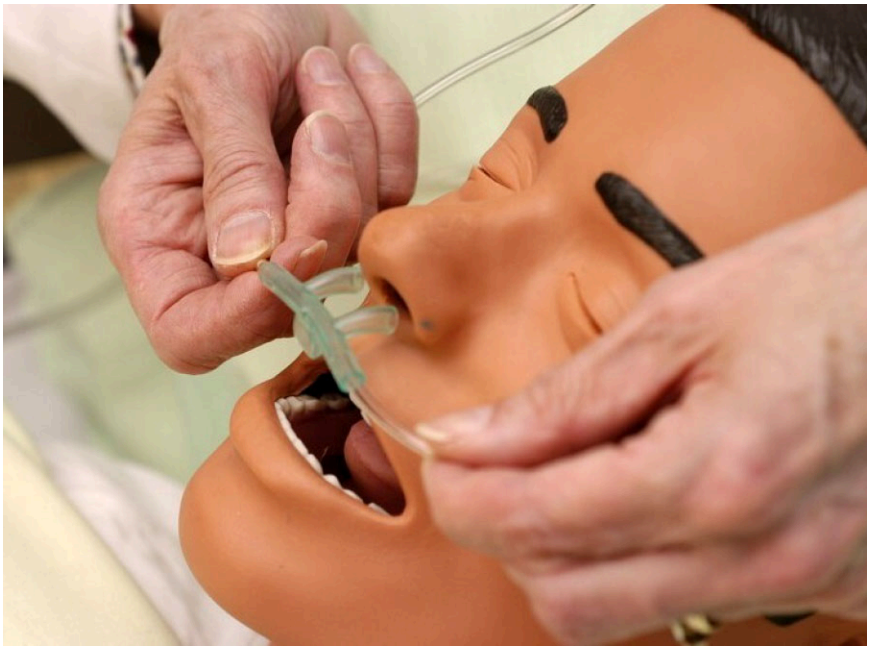

FIGURE 23.19 Patients with certain neuromuscular disorders may require supplemental oxygen to be delivered through a nasal cannula. (credit: *Nursing Skills [Internet]. 2nd edition*/NIH, CC BY 4.0)

In more severe situations, such as with higher level spinal cord injuries, the patient may require lifelong mechanical ventilation through a tracheostomy (Figure 23.20). For patients with tracheostomies, it is important for the nurse to provide “trach” care as ordered to keep the airway clear and prevent infection. Additionally, the nurse should have familiarity with the ventilator settings and be able to intervene appropriately for various alarms.

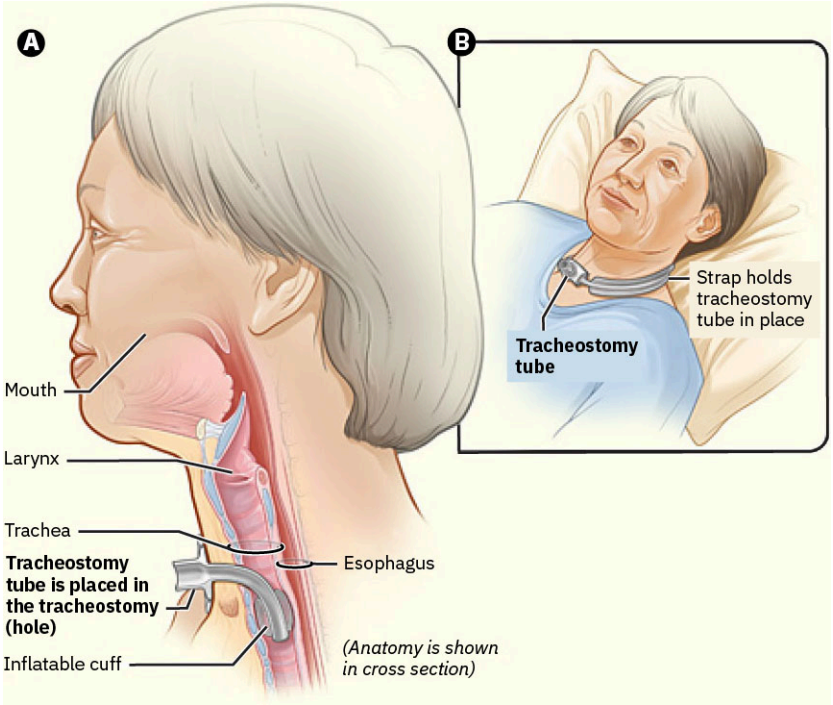

FIGURE 23.20 A patient with a neuromuscular disorder may have a tracheostomy, which is connected to a mechanical ventilator. This surgically created opening in the trachea helps provide oxygen to the lungs. (credit: National Heart Lung and Blood Institute/Wikimedia Commons, Public Domain)

Dealing with Immobility Considerations

Patients with muscle weakness from neuromuscular conditions often spend an extended period of time in bed and thus can develop a variety of complications related to loss of muscle strength. Regardless of the cause, immobility can cause degradation of cardiovascular, respiratory, gastrointestinal, and musculoskeletal functioning. Promoting mobility can prevent these complications from occurring. Studies have shown several benefits of mobilization, including less delirium, pain, urinary discomfort, urinary tract infection, fatigue, **deep vein thrombosis (DVT)**, skin breakdown, and pneumonia, as well as an improved ability to void (Alaparthi et al., 2020). (Figure 23.21). Additionally, the use of adaptive equipment and assistive devices (e.g., wheelchairs, walkers, canes) can restore some mobility, allowing for increased independence and participation in self-care activities.

FIGURE 23.21 The patient's leg is red and swollen; the arrow points to the deep vein thrombosis that has developed as a complication of

prolonged immobility. (credit: Seyahi E, Yurdakul S/NIH, CC BY 2.0)

Nurses should understand the effects of immobility on these body systems as well as the complications. It also is important for nurses to be prepared to implement associated nursing interventions related to immobility (Table 23.6).

Body System	Immobility Effects	Nursing Interventions
Cardiovascular	• Decreased systemic vascular resistance, causing venous pooling in extremities • Decreased cardiac output	• Monitor blood pressure regularly. • Encourage fluids for adequate hydration. • Administer prophylactic anticoagulant, as ordered.
Gastrointestinal	• Decreased peristalsis • Anorexia • Decreased fluid intake • Increased intestinal gas • Altered swallowing	• Offer high-calorie foods such as protein shakes. • Encourage fluid intake. • Puree foods as needed.
Genitourinary	• Urinary discomfort • Urinary retention • Urinary calculi • Urinary tract infections	• Implement toileting schedule. • Use a bladder scan and straight catheterization techniques as needed. • Encourage adequate hydration.
Integumentary	• Decreased delivery of oxygen and nutrients to tissues • Tissue ischemia • Inflammation over bony prominences • Friction and shear	• Turn the patient every two hours. • Monitor for skin breakdown and intervene immediately if noticed.
Musculoskeletal	• Reduced muscle mass and strength • Decreased endurance • Impaired joint mobility	• Perform active and passive range of motion exercises as tolerated. • Encourage ambulation and movement as tolerated.
Psychological	• Depression • Anxiety • Distress	• Provide support. • Connect patient to social worker, support groups, and other resources.
Respiratory	• Decreased strength of respiratory muscles • Diminished lung expansion • Hypoventilation • Impaired gas exchange • Decreased cough reflex • Pulmonary secretion pooling	• Provide supplemental oxygen, as ordered. • Encourage incentive spirometer use. • Ambulate patient as tolerated to facilitate lung expansion.

TABLE 23.6 Nursing Considerations for Body Systems Affected by Immobility

Managing Pain

Pain is another common clinical manifestation of neuromuscular disorders. Pain management requires collaboration with the interdisciplinary team, including nurses, healthcare providers, pharmacists, and sometimes pain specialists. There are many different types of pain medications (called analgesics) that can be administered by various routes. Analgesics are classified as nonopioids, opioids, or adjuvants. An adjuvant is a medication that has been found in clinical practice to have either an independent analgesic effect or additive analgesic properties when administered with opioids. Examples of adjuvant medications include antidepressants (e.g., amitriptyline) and anti-seizure medications (e.g., gabapentin). It is important for the nurse to be familiar with analgesic medications, especially their potential side effects before administering them. For example, overuse of opioids can lead to constipation, which can cause more pain for a patient experiencing muscle weakness from a neuromuscular disorder.

In addition to medications, numerous nonpharmacological interventions can be used to treat pain associated with neuromuscular disorders. Some of these interventions include the following:

- distraction (e.g., playing games, watching television)
- relaxation through meditation, hypnosis, prayer, breathing, or music therapy
- comfort measures including repositioning and massage as tolerated
- application of heat or cold
- exercise or physical therapy as tolerated
- aromatherapy

Monitoring Nutritional Status

Monitoring nutritional status is important for all patients but is especially important for patients with neuromuscular disorders. These patients experience severe muscle weakness, which can be exacerbated by malnourished states. If the patient is unable to eat enough, the muscles are not getting the nutrients they need, further contributing to their weakened state. To improve this, the nurse should try to encourage the patient to eat when they are able to, and to consume high-calorie, nutrient-dense foods when possible. It may be beneficial for these patients to increase their intake of protein as well to help repair muscle tissue. It is important to note that although consuming more protein and calories can help alleviate some muscle weakness, it is not a cure for the underlying disorder. And in some cases, altering nutrition will still not help symptoms significantly. Some patients with neuromuscular disorders may have difficulty swallowing (known as dysphagia), making it even more difficult to eat. In these cases, enteral or parenteral nutrition therapies may be ordered. It is important for the nurse to collaborate effectively with the care team, including dieticians and speech therapists, to ensure the patient is receiving appropriate nutrition, especially if they are experiencing dysphagia.

Monitoring Elimination

Muscles of the bowel and bladder often become weak in neuromuscular conditions, especially in the later stages of disease progression. This can lead to urinary or bowel **incontinence**, which is the involuntary expulsion of urine or feces from the body. Nurses should use therapeutic communication with patients experiencing incontinence to help them feel comfortable in expressing their fears, worries, and embarrassment about incontinence and work toward improving their quality of life. Nurses should be prepared to provide education about pelvic floor muscle training exercises, timed voiding, lifestyle modification, and incontinence products. Encourage patients to learn more about their condition so they can optimally manage it and improve their quality of life. In more severe cases where the patient cannot manage the incontinence themselves, it is important for the nurse to check the patient frequently to ensure they are clean and dry to help prevent skin breakdown or the development of a urinary tract infection. If the patient is being discharged home, the nurse should provide education to the family or primary caregiver about the importance of keeping the patient clean and dry to prevent complications.

Monitoring Skin Integrity

Patients with neuromuscular disorders often spend extended periods of time in bed or sitting in wheelchairs because they have muscle weakness, making it difficult or impossible to ambulate. These periods of immobility increase their risk of skin breakdown and pressure injuries. A pressure injury is defined as breakdown of skin integrity caused by prolonged internal pressure against a bony prominence or persistent contact with an external surface (e.g., furniture, medical or other devices) often in combination with shear. Pressure injuries commonly occur

on the sacrum, heels, ischial tuberosities, and coccyx and form when a layer of skin tissue gets caught between an external hard surface, such as a bed or chair, and the internal hard surface of a bone. Nursing interventions for the care of a patient with or at risk for pressure injuries include the following:

- assessing and documenting skin status frequently
- applying prophylactic dressings to high-risk areas
- keeping skin free of excessive moisture
- promoting a high-protein diet (if appropriate for patient) and encouraging fluid intake
- repositioning the patient frequently (e.g., every two hours)
- keeping bed linens clean and free from wrinkles

Assisting with ADLs

Muscle weakness often makes it difficult or impossible for patients with neuromuscular disorders to perform ADLs on their own. The nurse should encourage the patient to perform ADLs as independently as possible and participate in prescribed physical therapy. For instance, the nurse should encourage the patient to perform active or passive range of motion exercises as prescribed by the physical therapist or if necessary perform these ADLs for the patient. The nurse should be aware that pain and fear of falling can be major deterrents to a patient's willingness to ambulate or perform physical therapy, so the nurse should educate the patient about appropriately using assistive devices and adhering to other fall precautions. The nurse should encourage rest between activities. For patients who are bedridden, the nurse should elevate the head of the bed to 30 to 45 degrees, unless medically contraindicated, and turn and reposition the patient every two hours. Furthermore, the nurse should perform hourly rounding to check on the patient's needs and prevent falls. In some cases, the use of assistive devices may be used to restore some of the patient's mobility, increasing their ability to participate in performing ADLs. Examples of these devices include canes, walkers, crutches, wheelchairs, mobility scooters, and braces.

Emotional Needs

Patients with neuromuscular disorders often have emotional needs in addition to physical needs. These disorders can be debilitating, which can negatively affect the patient's quality of life and result in depression or anxiety. To improve this, the nurse should provide support for both the patient and their family members and teach effective coping strategies.

Provide Patient and Family Support

Many patients with neuromuscular disorders have family caregivers who are an extension of the healthcare team and constantly work with the patient. It is important for nurses to also assess the caregiver when seeing them with the patient in the home, clinic, hospital, or long-term care setting and provide encouragement. What do caregivers want? Research shows that caregivers want and need the following (Lowey, 2024):

- support, assistance, and practical help (e.g., finding others to assist with grocery shopping, going to the pharmacy, and food preparation)
- honest conversations with the healthcare team
- assurance that their loved one is being honored
- inclusion in decision-making
- desire to be listened to and their concerns heard
- remembrance as a good and compassionate caregiver
- assurance that they did all they possibly could for their loved one

Nurses should assess caregivers' social support network and any needs for further assistance. This assessment includes assessing the caregiver's physical needs, sleep patterns, and ability to perform other responsibilities. Nurses should watch for signs of declining health, clinical depression, or increased use of alcohol and drugs. Listening to their stories and providing presence, active listening, and touch contributes greatly to the caregiver's sense of worth. The nurse should help the patient's caregiver in identifying and using support systems and should refer them to resources and support groups in the community as needed.

Teach Coping Strategies

Interventions to enhance coping can be implemented for patients with neuromuscular disorders as well as for family members. Sample interventions that the nurse should consider implementing include the following:

- Assist the patient in identifying short- and long-term goals.
- Help the patient find available resources to meet the goals.
- Encourage relationships with others who have common interests and goals.
- Help the patient solve problems in a constructive manner.
- Assist the patient in breaking down complex tasks into small, manageable steps.
- Help the patient identify alternative responses to difficult situations.
- Use a calm, reassuring approach.
- Provide an atmosphere of acceptance.
- Help the patient identify information they are most interested in obtaining.
- Provide factual information regarding medical diagnosis, treatment, and prognosis.
- Provide the patient with realistic choices about certain aspects of care.
- Encourage an attitude of realistic hope as a way of dealing with hopelessness.
- Seek to understand the patient's perspective of a stressful situation.
- Discourage decision-making when the patient is under severe stress.
- Acknowledge the patient's cultural and spiritual background and encourage use of spiritual resources, if desired.
- Encourage verbalization of feelings, perceptions, and fears.
- Encourage family involvement, as appropriate.
- Help the patient identify positive strategies to deal with limitations and manage needed lifestyle or role changes.
- Instruct the patient on the use of relaxation techniques.

PATIENT CONVERSATIONS

Teaching Visualization and Mindfulness as Coping Strategies

Scenario: The patient is a 67-year-old male being seen in a multiple sclerosis rehabilitation clinic.

Nurse: Hi, my name is Jaxson. I'll be your nurse today. How are you feeling about everything?

Patient: I'm actually feeling really overwhelmed. All I can think about is MS and how it's turned my life upside down.

Nurse. I understand. It's natural to feel anxious about MS. Before you meet with your occupational therapists, why don't we work on some coping strategies together. Have you ever tried any techniques to manage your anxiety?

Patient: Not really. I've just been trying to keep busy, but it's not helping much.

Nurse: I see. Let's try something different. One effective technique is visualization. Close your eyes and imagine yourself in a calm and peaceful place. It could be a beach, a forest, or anywhere that makes you feel relaxed. Picture the details—the sights, sounds, and smells.

Patient: That sounds nice. I'll give it a try.

Nurse: Great. Another technique is mindfulness meditation. It involves focusing on the present moment without judgment. Pay attention to your thoughts, feelings, and sensations without trying to change them.

Patient: How do I do that?

Nurse: Start by sitting comfortably and bringing your attention to your breath. Notice the sensation of each inhale and exhale. If your mind starts to wander, gently bring it back to your breath.

Patient: Okay, I think I can do that.

Nurse: Practice these techniques daily for ten to fifteen minutes. They can help you feel more calm and centered. And remember, if you ever need support, I'm here for you.

Patient: Thank you so much. I really appreciate it.

Nurse: You're welcome. Take care, and remember to be gentle with yourself during this time.

Developmental Needs

Many neuromuscular disorders are diagnosed in early childhood, which emphasizes the need to discuss the patient's developmental needs. These needs will be quite different for children versus adults. Some challenges and considerations related to the developmental needs of children with neuromuscular disorders are described in (Table 23.7).

Challenge	Pediatric Nursing Considerations
Decreased muscle tone, strength, and coordination	• Gross and fine motor skill development may be delayed. • Specialized therapy (e.g., physical therapy, occupational therapy) may be required to improve motor function, mobility, and independence with ADLs.
Delayed or impaired cognitive development	• Potential for condition to cause intellectual disabilities. • Children with cognitive impairment may benefit from educational interventions, cognitive-behavioral therapy, and strategies to support learning and academic achievement.
Mental health challenges	• Living with a neuromuscular condition can impact social interactions, self-esteem, and emotional well-being. • Individuals may experience feelings of frustration, isolation, or anxiety related to their condition. • Supportive interventions, such as counseling, peer support groups, and social skills training, can help individuals navigate social challenges and build resilience.
Decreased independence	• Neuromuscular conditions may affect an individual's ability to perform self-care tasks independently, such as dressing, feeding, grooming, and toileting. • Occupational therapists can provide training and adaptive equipment to promote independence and maximize functional abilities in daily activities.
Difficulty transitioning to adulthood	• As individuals with neuromuscular conditions transition to adulthood, they may face additional challenges related to independence, employment, health care, and social integration. • Transition planning should address vocational training, job placement, independent living skills, and access to adult healthcare services.

TABLE 23.7 **Developmental Challenges and Considerations for Children with Neuromuscular Disorders**

Provide Education

Parents of children with newly diagnosed neuromuscular disorders are often scared and anxious about many aspects of their new reality with a sick child. For this reason, it is important that the nurse provides thorough education regarding the diagnosis itself and how to care for the child in the home setting. Additionally, the nurse will need to educate patients and families about typical developmental milestones and how neuromuscular conditions may affect the attainment of these milestones. The nurse should emphasize the importance of early intervention services and explain how these therapies can help promote optimal development, improve functional abilities, and enhance quality of life. The nurse can also provide information about adaptive strategies, assistive devices, and

mobility aids that can support independence and participation in daily activities. Thinking on a bigger scale, the nurse can also educate families and educators about the educational rights and needs of individuals with neuromuscular conditions to promote advocacy.

The nurse must also be prepared to address any other questions the parents or guardians may have. It is important to remember that parents may require repetition of information because often they are anxious, making it difficult for them to process large amounts of information. Most importantly, the nurse should be patient, kind, and nonjudgmental when providing education and interacting with both the child and family.

Promote Self-Care Regimens

Often, young children are unable to participate in a self-care regimen, but as they get older, the nurse should emphasize the importance of allowing children to perform as much of their own self-care as possible. Having a neuromuscular disorder takes away much of a person's independence, so they should be encouraged to perform as much care for themselves as possible in an effort to restore some of that autonomy. In the hospital setting, the nurse should allow the patient to do as much on their own as possible while still remaining in close proximity to be prepared to help if the patient requires assistance.

Collaborative Care Considerations

Caring for patients with neuromuscular disorders requires collaboration between various disciplines to promote optimal outcomes. Some of the members of the interdisciplinary team are discussed in the next section.

Specialty Consults

Many specialty healthcare personnel may be part of the interdisciplinary team caring for a patient with a neuromuscular disorder. These include dieticians, occupational therapists (OT), physical therapists (PT), psychologists and psychiatrists, respiratory therapists, social workers, and speech therapists.

- Dieticians: Dieticians assess, plan, implement, and evaluate interventions including those relating to dietary needs. They also provide dietary education and work with other members of the healthcare team when a client has dietary needs secondary to neuromuscular disorders (e.g., dysphagia).
- Occupational therapists (OT): Occupational therapists are licensed healthcare professionals who assess, plan, implement, and evaluate interventions related to independence. This includes activities that facilitate the patient's ability to achieve their highest possible level of independence in their ADLs (e.g., bathing, grooming, eating, dressing).
- Physical therapists (PT): Physical therapists are licensed healthcare professionals who assess, plan, implement, and evaluate interventions related to the patient's functional abilities (e.g., strength, mobility, balance, gait, coordination, joint range of motion). They supervise prescribed exercise activities according to a patient's condition and provide and teach patients how to use assistive aids (e.g., walkers, canes) and perform exercise regimens.
- Psychologists and psychiatrists: Psychologists and psychiatrists are licensed healthcare professionals who provide mental health and psychiatric services to patients with mental health disorders. They also provide psychological support to family members and significant others as indicated. Patients with neuromuscular disorders are prone to anxiety and depression, so having a mental health professional on the care team offers many benefits.
- Respiratory therapists: Respiratory therapists are licensed healthcare professionals who treat respiratory-related conditions in patients. Their specialized respiratory care includes managing oxygen therapy and managing patients on specialized oxygenation devices (e.g., mechanical ventilators), which are used by some patients with severe neuromuscular disorders.
- Social workers: Social workers are licensed healthcare professionals who counsel patients and provide psychological support, help set up community resources according to patients' financial needs, and serve as part of the team that ensures continuity of care after the person is discharged.
- Speech therapists: Speech therapists are licensed healthcare professionals who assess, diagnose, and treat communication and swallowing disorders. They play a large role in assisting with dysphagia associated with neuromuscular disorders.

Caregiver Resources

Caregivers of patients with neuromuscular disorders are often the closest family member (e.g., spouse, adult children, siblings, parents). They may provide the bulk of the care for the patient in the home setting. Because of this, these caregivers are prone to burnout and caregiver fatigue. It is important for the nurse to provide caregivers with resources to take good care of the patient but to also take care of themselves. In some cases, this may mean referring the family to a social worker who can assist with finding in-home help or a long-term care center. Social workers can help provide the caregiver with contact information for a community support group to connect with other caregivers. The nurse should openly discuss the needs of the caregiver to determine the most appropriate resources to provide.

LINK TO LEARNING

Nearly every neuromuscular disorder has a dedicated foundation or association that provides resources to patients and families. Most of these organizations also provide resources for caregivers. For example, the Muscular Dystrophy Association (MDA) has published this list of resources (https://openstax.org/r/77mda) for caregivers of patients with MD.

Environmental Considerations

The muscle weakness caused by neuromuscular disorders puts these patients at higher risk for falls and other injuries. This risk highlights the importance of maintaining a safe environment. Interventions to ensure a safe environment and prevent falls for patients with neuromuscular disorders include the following:

- removing clutter from walking areas
- reminding the patient to use a call light before getting out of bed
- setting bed alarms before leaving the room
- keeping the bed in the lowest and locked position
- having the patient wear brightly colored “fall-risk” socks or a fall-risk armband to increase team member awareness of the patient’s fall risk

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety

Definition: Minimizes risk of harm to patients and providers through both system effectiveness and individual performance. The nurse will:

- Value vigilance and monitoring (even of own performance of care activities) by patients, families, and other members of the healthcare team.
- Communicate observations or concerns related to hazards and errors to patients, families, and the healthcare team.
- Demonstrate effective use of strategies to reduce risk of harm to self or others.

Summary

23.1 Foundations of Neuromuscular Functioning

The neuromuscular system is the combination of the neurological system and the musculoskeletal system working together effectively. The neurological system is composed of the brain, spinal cord, and peripheral nerves. The musculoskeletal system is made up of bones, muscles, and various connective tissues. Signals from the neurological system send messages to the musculoskeletal system to cause responses and reactions to external and internal stimuli to maintain homeostasis and protect the body from injury. The primary functions of the neuromuscular system include essential body movement, posture control, breathing, and maintenance of homeostasis.

23.2 Factors Affecting Neuromuscular Functioning

Several diagnostic tests can be used to help diagnose neuromuscular disorders or rule out other conditions that may be causing similar symptoms. These tests include blood tests, electromyography (EMG), radiographic imaging, nerve condition velocity testing, muscle biopsies, and genetic tests. Used in combination, these tests can help narrow down which specific disorder, among the many different types of neuromuscular conditions, the patient is experiencing, all of which have varying clinical manifestations and prognoses. Common disorders that impair the neuromuscular system include Charcot-Marie-Tooth disease, congenital myopathy, muscular dystrophy, amyotrophic lateral sclerosis, multiple sclerosis, cerebral palsy, and spinal cord injuries. Although these disorders are different in many ways, they typically all involve similar symptoms of neuromuscular impairment including loss of balance; muscle weakness, stiffness, and atrophy; pain; and breathing, swallowing, and vision impairment.

23.3 Considerations for Care of Neuromuscular Impairment

Nursing considerations for patients with neuromuscular impairment include physical needs such as maintaining respiratory function, promoting mobility, implementing pain management strategies, ensuring optimal nutrition, and monitoring elimination and skin integrity. Beyond the physical needs, it is also important for nurses to consider the emotional needs of the patient because these disorders can negatively impact overall quality of life. Additionally, it is important for nurses to collaborate with other members of the healthcare team to ensure optimal patient outcomes. This typically involves collaboration with specialty consults including dieticians, occupational and physical therapists, social workers, and speech therapists, among others. Environmental considerations for patients with neuromuscular conditions involve maintaining a safe environment because these patients are at higher risk for falls and injury. Some interventions for maintaining a safe environment include removing clutter from the room, ensuring bed alarms are on, and keeping the bed in the lowest and locked position.

Key Terms

amyotrophic lateral sclerosis (ALS) a progressive neurological disorder that affects motor neurons
anterior horn gray-matter region of the spinal cord that contains multipolar motor neurons, sometimes referred to as the ventral horn
appendicular skeleton consists of the limbs, which are attached to the axial skeleton
ascending tract a column of nervous system fibers that carry sensory information up to the brain
aspiration the process of food or other foreign particles entering the airway
autonomic nervous system (ANS) component of the peripheral nervous system that regulates involuntary physiologic responses and includes the sympathetic and parasympathetic nervous system
axial skeleton consists of 80 bones that form the head and trunk of the body
bone hard, dense connective tissue that form most of the adult skeleton, the primary support structure of the body
brain contained within the cranial cavity of the skull is the central organ of the nervous system responsible for controlling bodily functions, processing sensory information, and enabling cognitive processes such as learning and memory
brain stem region of the adult brain that includes the midbrain, pons, and medulla oblongata, which develops from the mesencephalon, metencephalon, and myelencephalon of the embryonic brain
cardiac muscle muscle specifically related to cardiac tissue
cartilage type of connective tissue that provides structural support and flexibility and helps reduce friction during joint movement

cauda equina a bundle of nerve roots located at the end of the spinal cord that resembles a horse's tail
central nervous system (CNS) the primary processing center of the body; includes the brain and spinal cord
cerebellum an area of the brain largely responsible for comparing information from the cerebrum with sensory feedback from the periphery through the spinal cord
cerebral cortex the outer gray matter covering the forebrain, marked by wrinkles and grooves known as gyri and sulci
cerebral hemisphere one half of the bilaterally symmetrical cerebrum
cerebral palsy (CP) an umbrella term for a group of disorders caused by damage to the brain during pregnancy, childbirth, or in early infancy that affect the ability to move and stay balanced
cerebrum the region of the brain responsible for higher neurological functions such as memory, emotion, consciousness, and voluntary muscle movement
Charcot-Marie-Tooth (CMT) disease a progressive genetic neuromuscular disorder that affects the peripheral nerves, most often those of the arms, hands, legs, and feet
congenital myopathy a genetic muscle deformity that is present from birth resulting in a lack of muscle tone and severe muscle weakness
connective tissue cartilage, ligaments, and tendons that connect tissues and organs
corpus callosum the large white matter structure that connects the cerebrum to the rest of the nervous system and provides the major pathway for communication between the right and left cerebral hemispheres
cranial nerve one of twelve nerves connected to the brain that are responsible for sensory and motor functions of the head and neck
deep vein thrombosis (DVT) the formation of a blood clot in the deep veins in the body, usually in the legs
descending tract a column of nervous system fibers that carry motor commands from the brain
diencephalon the region of the adult brain that retains its name from embryonic development and includes the thalamus and hypothalamus
diplopia double vision
electromyography (EMG) a diagnostic procedure involving small needles that record electrical activity in the muscles
excitability the ability of muscle plasma membranes to change electrical states and send action potentials along the entire length of a membrane to cause contraction
gray matter the butterfly-shaped structure consisting of neuronal cell bodies that is subdivided into regions called horns and is involved in processing information in the brain.
gyri a wrinkle or fold formed by convolutions in the surface of the cerebral cortex
hypothalamus a collection of nuclei that are largely involved in regulating homeostasis
hypotonia decreased muscle tone
incontinence the involuntary expulsion of urine or feces from the body
joint a location where bones come into contact, allowing for movement
lateral horn the region of the spinal cord gray matter in the thoracic, upper lumbar, and sacral regions that is the central component of the sympathetic division of the autonomic nervous system
ligament tough but flexible fibrous tissue that connects bones or holds joints together
longitudinal fissure the separation of tissue in the cerebrum that divides the brain into two distinct halves (cerebral hemispheres)
medulla the connection point between the brain stem and spinal cord
motor neuron a nerve cell that receive signals from the brain and spinal cord to cause voluntary skeletal muscle movements and breathing
multiple sclerosis (MS) a neurological disorder that causes immune system cells to attack myelin; subtypes of MS include relapsing-remitting, secondary-progressive, primary-progressive, and progressive-relapsing
muscle atrophy the wasting and breakdown of muscle tissue
muscular dystrophy a genetic muscular disorder that results in progressive muscle weakness
myasthenia gravis an autoimmune disorder in which antibodies attack the neuromuscular junction of skeletal muscles, resulting in progressive muscle weakness (e.g., arms, hands, fingers, legs, neck) and fatigue
myelin the protective coating on nerves
negative feedback a mechanism that reverses a deviation from the set point
nerve conduction velocity (NCV) testing a diagnostic procedure involving placement of electrodes over nerves to

determine how fast nerve signals are sent to skeletal muscles

neuromuscular junction (NMJ) the site where a motor neuron's terminal meets the muscle fiber and responds to motor signals

paralysis a complete loss of sensation and mobility

paraplegia paralysis of the legs and portions of the trunk but not the arms

parasympathetic nervous system the part of the ANS that results in involuntary "rest and digest" types of reactions

peripheral nervous system (PNS) the portion of the nervous system located on the periphery of the central nervous system containing peripheral structures including ganglia and nerves

pons the connection point between the medulla and the thalamus

posterior horn the gray-matter region of the spinal cord in which sensory input arrives

ptosis eyelid drooping

set point the physiological value around which the normal range fluctuates

skeletal muscle muscle that attaches to bone and creates intentional movement as it contracts and relaxes, causing the bones to move

skeletal system the bones, joints, and other structures that allow for movement, form the body, make blood cells, and shield organs

smooth muscle muscle in the walls of hollow organs such as the urinary bladder, uterus, stomach, and intestines

somatic nervous system the part of the peripheral nervous system that controls voluntary movements of skeletal muscle

spinal cord a long, thin, tube-shaped bundle of nerves that extends from the base of the brain through the vertebral column; contained within the vertebral cavity of the vertebral column

spinal cord injury damage to the spinal cord, often as a result of trauma (e.g., a motor vehicle accident, a fall) or cancer

spinal nerve one of thirty-one peripheral nerves connected to the spinal cord; each is named for the level of the spinal cord at which it emerges

sulci grooves formed by convolutions in the surface of the cerebral cortex

sympathetic nervous system the part of the ANS that causes involuntary reactions in the body to help combat a perceived threat resulting in "fight or flight" types of reactions

tendon a tough connective tissue located on each side of a joint that controls joint movement

tetraplegia paralysis from the neck down

thalamus a collection of nuclei that relay information between the cerebral cortex and the brain stem, spinal cord, and periphery

tracheostomy an opening in the trachea into which a tube is placed that allows for mechanical ventilation to be delivered

white matter myelinated nerve fibers that facilitate communication between different regions of the brain

Assessments

Review Questions

1. The nurse is caring for an older adult patient who is concerned about losing their memory. What statement by the nurse best describes what the patient can expect as they age?

a. "There are no changes that occur within the brain that are associated with aging."
b. "You can expect to see an improvement in your memory as you get older."
c. "You gain extra brain tissue with age, but this can cause your memory to decrease."
d. "Neurological messages may be sent more slowly as you age, resulting in decreased reaction times."

2. The student nurse is reviewing the function of the cranial nerves. What nerve does the student nurse recognize as being responsible for movements of the tongue?

a. hypoglossal nerve
b. olfactory nerve
c. spinal accessory nerve
d. trochlear nerve

3. The nurse is caring for a patient who is feeling anxious before a medical procedure. What clinical manifestation would the nurse expect that would be consistent with activation of the patient's sympathetic nervous system?
    a. decreased heart rate
    b. pupil dilation
    c. tightening of airway muscles
    d. increased digestion

4. What type of connective tissue found within the musculoskeletal system is responsible for limiting movement of joints?
    a. cartilage
    b. tendons
    c. bones
    d. ligaments

5. What is a major function of the neuromuscular system?
    a. digestion
    b. lymph production
    c. breathing regulation
    d. cardiovascular control

6. The nurse is caring for a patient undergoing diagnostic testing for multiple sclerosis (MS). The patient asks the nurse what the creatine kinase (CK) test is checking for. What response by the nurse is correct?
    a. "This test shows us how quickly your blood clots."
    b. "Creatine kinase is a reflection of how much inflammation there is in your body."
    c. "This test indicates whether there is muscle damage occurring somewhere in the body."
    d. "Creatine kinase will determine whether or not you have an infection of some kind."

7. The nurse is caring for a patient who presents with a history of cold hands and feet, weak grips, and difficulty walking. Upon assessing the patient, the nurse notices that the patient has curled toes on both feet. What neuromuscular condition does the nurse suspect the patient may have based on these findings?
    a. multiple sclerosis
    b. Charcot-Marie-Tooth disease
    c. muscular dystrophy
    d. myasthenia gravis

8. The nurse is caring for a patient with Duchenne muscular dystrophy (DMD). What finding is most consistent with this specific type of muscular dystrophy?
    a. The patient is female.
    b. The patient was diagnosed at age 5.
    c. The patient has enlarged calf muscles.
    d. The patient has an outward curvature of the spine.

9. The nurse is caring for a patient newly diagnosed with the primary-progressive form of multiple sclerosis. The patient asks the nurse what they should expect with this type of disease. What statement by the nurse is correct?
    a. "You should expect to have good days and bad days."
    b. "It is likely that your symptoms will be completely gone for weeks at a time."
    c. "Expect to have symptoms that get worse over time with frequent symptom attacks."
    d. "Your symptoms will likely get worse over time without any extra attacks or periods of remission.

10. What mechanism best describes why patients with neuromuscular disorders experience vision problems?
    a. Eye muscles become weak.

b. Progressive eye muscle atrophy is occurring.
c. High cervical spinal injury damages eyesight.
d. Demyelination of nerve cells of the eyes occurs.

11. The nurse is caring for a patient with a neuromuscular disorder. What intervention does the nurse know is the highest priority?
a. maintaining a patent airway
b. removing clutter from the floor
c. administering prophylactic heparin
d. providing emotional support

12. The nurse is caring for a patient who is bedridden with a neuromuscular disorder. What intervention is most appropriate for preventing complications associated with immobility?
a. turning the patient every four hours
b. removing clutter from the floor
c. performing active range of motion exercises
d. implementing a fluid restriction

13. What breakfast would be most appropriate for a patient with muscle weakness from a neuromuscular disorder?
a. bagel and cream cheese
b. oatmeal and yogurt
c. English muffin, eggs, and cereal
d. orange juice and a granola bar

14. What member of the interdisciplinary care team is most likely to assist a patient who has a neuromuscular disorder with washing their face and brushing their teeth?
a. dietician
b. physical therapist
c. speech therapist
d. occupational therapist

15. The nursing student is preparing to leave the room of a patient who has a neuromuscular disorder. What action by the nursing student would require the nurse to intervene?
a. The student nurse places the patient's robe and slippers on the bedside table for easy access.
b. The student nurse leaves the bed alarm off because the patient agreed to call before getting up.
c. The student nurse locks the bed and makes sure it is in the lowest position.
d. The student nurse double-checks that the patient is wearing a fall-risk band.

Check Your Understanding Questions

1. What is the purpose and function of the thalamus and hypothalamus in the neurological system?

2. What is the difference between the sympathetic nervous system and the parasympathetic nervous system?

3. What are the three different types of muscle in the body and their functions?

4. You are caring for a patient who is about to undergo electromyography (EMG) testing. How would you explain the procedure to the patient?

5. What is the difference between electromyography (EMG) and nerve conduction velocity (NCV) testing?

6. What are early symptoms of amyotrophic lateral sclerosis (ALS)? What are late symptoms?

7. Based on your knowledge of immobility seen in patients with neuromuscular disorders, what are some nursing interventions you could implement to prevent associated complications?

8. What are some strategies you could use when teaching coping skills to a patient with a neuromuscular disorder?

Reflection Questions

1. Reflect on the anatomy of the spinal cord and identify a difference between the adult spinal cord and that of an infant.
2. Reflect on the mutually supportive functions of the different types of connective tissue found in the musculoskeletal system.
3. Imagine you are caring for a pediatric patient who has just been diagnosed with Duchenne muscular dystrophy (DMD). The parents of the child are extremely upset about the diagnosis. How would you manage the situation?
4. Imagine that you are caring for a 94-year-old female whose family is concerned about her memory lapses and difficulty with self-care and movement. Reflect on how aging affects the neuromuscular function for this patient.
5. What kinds of nonpharmacological interventions to address pain and discomfort could you use for a patient with a neuromuscular disorder?

What Should the Nurse Do?

1. The nurse is caring for a patient who just arrived in the emergency department by ambulance with a left shoulder gunshot wound. Upon initial assessment, the nurse observes that the patient is sitting upright, eyes wide with pupils fully dilated, and breathing rapidly. What should the nurse do next?

The nurse is caring for a patient who presents to the emergency department with double vision, dysphagia, and muscle weakness.

2. What follow-up questions should the nurse ask to obtain subjective data from the patient?
3. What assessments would you perform to obtain objective data?
4. What do you suspect is going on with the patient based on the provided information?
5. The nurse is caring for a patient with a neuromuscular disorder. When assessing pain, the patient reports a 10/10 stabbing pain in their legs. What should the nurse do next?

Competency-Based Assessments

1. Perform a complete cranial nerve assessment on a peer or draw a diagram depicting cranial nerve placement and function.
2. Create a table comparing and contrasting the pathophysiology, clinical manifestations, and diagnostic tests for three different neuromuscular disorders.
3. Role-play with a peer, family member, or friend to perform a focused skin assessment on a patient who uses a wheelchair or is bedridden due to a neuromuscular disorder.
4. Role-play with a peer, family member, or friend to demonstrate minimizing risk of harm to patients and providers.

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CHAPTER 24
Skin Integrity

FIGURE 24.1 This is a surgical wound created upon the removal of a large sebaceous cyst on the back of the neck after having been packed with gauze. (credit: modification of "Woundsm" by Wikimedia Commons, Public Domain)

CHAPTER OUTLINE

24.1 Structures and Function of the Skin
24.2 Skin Integrity
24.3 Wound Classification
24.4 Wound Healing

INTRODUCTION The integumentary system is an essential component to every healthcare encounter. The condition of an individual's skin, hair, and nails provides important information about their physical and emotional health. The structures of the integumentary system play significant functions in the body and reflect dysfunctions from other body systems. For example, someone with inadequate perfusion may have a cyanotic, or blue, appearance to their skin. Thus, when a nurse notes this abnormal skin appearance, appropriate interventions can be identified and implemented to promote optimal outcomes. Therefore, nurses must be competent in the anatomy and physiology of the integumentary system to adequately develop a plan of care, identify potential risks, and implement appropriate nursing interventions. The nurse must also have knowledge of factors affecting skin integrity, wounds, and wound management.

24.1 Structures and Function of the Skin

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Review the anatomy and functions of the skin
- Identify functions of skin and mucous membranes
- Recognize how assessment findings may vary in special populations

The integumentary system is the body's first line of defense, serving as a physical barrier between the external and internal environments. The external environment includes microorganisms, radiation, temperature, or other threats of physical trauma or injury. The internal environment is the body that the integumentary system serves to protect and maintain homeostasis. The integumentary system includes the skin, hair, nails, as well as glands (e.g., sebaceous, sweat, mammary) (Kim & Dao, 2023).

Nurses play a vital role in maintaining skin integrity and promoting wound healing. To effectively protect and preserve a patient's skin, the nurse must understand the anatomy and physiology of the integumentary system, factors affecting skin integrity, and how to appropriately manage wounds.

Anatomy of the Skin

The skin, which covers the body entirely, is the largest organ of the body. It serves as a protective barrier against heat, light, infection, and injury and performs additional essential functions. The skin varies in thickness, color, and texture across the body. For example, the palms of the hands and soles of the feet are thicker than skin on the abdomen. The skin is made up of three distinctive layers: the epidermis (i.e., the outermost layer of the skin); dermis (i.e., the layer below the epidermis); and hypodermis or subcutaneous tissue (i.e., the deepest layer) (Figure 24.2). Each layer varies in its anatomy and function (Yousef et al., 2022).

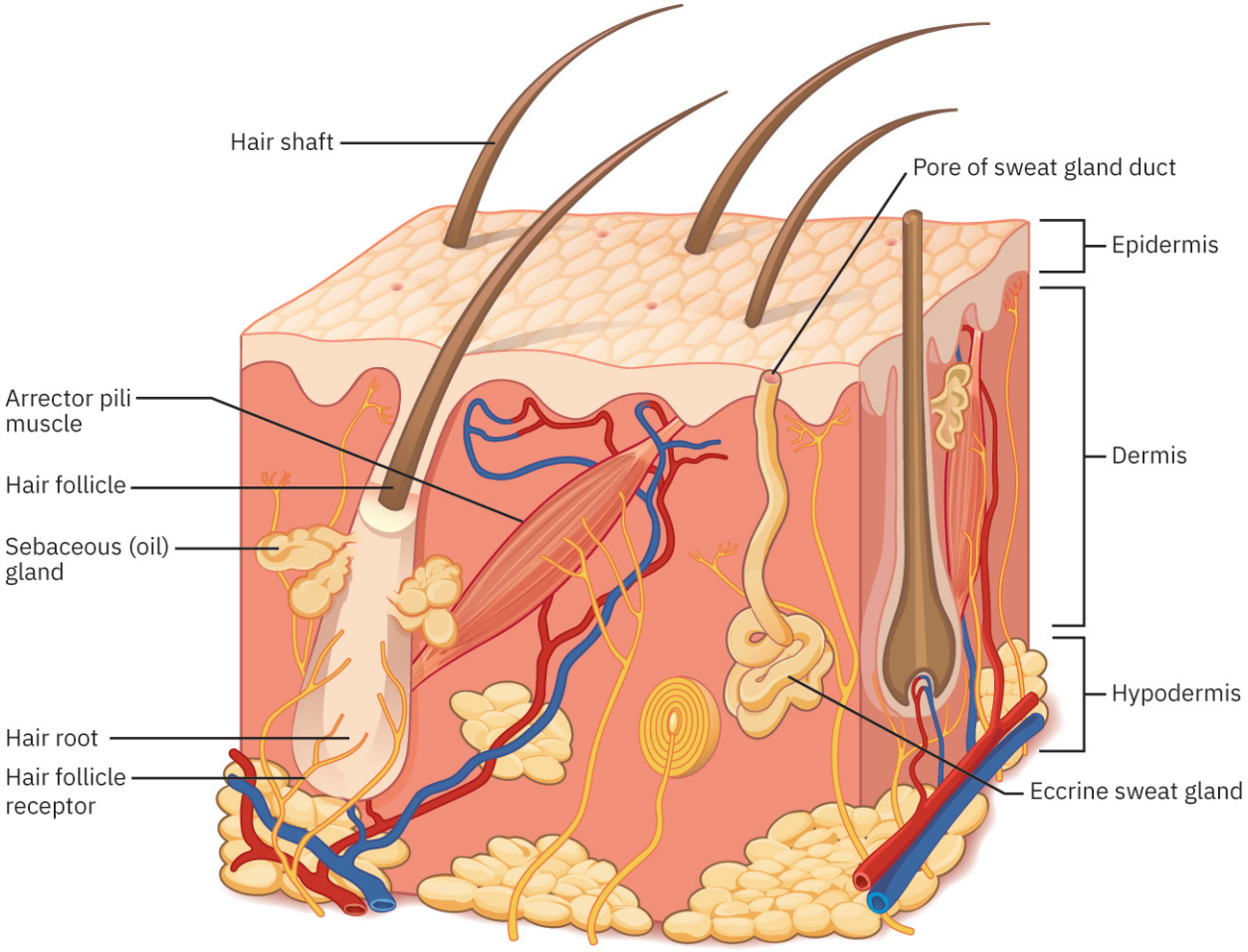


FIGURE 24.2 The skin is composed of the epidermis, dermis, and hypodermis layers. The nurse must be competent in the anatomy of the skin to adequately assess and manage an individual's skin integrity. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Epidermis

The epidermis is the thin outer layer of the skin and consists of epithelial cells. The main function of the epidermis is to protect deeper tissue layers from water, mechanical and chemical trauma, exposure to microorganisms, and damage from ultraviolet (UV) light. The epidermis has four or five layers depending on its location (Figure 24.3). There are five layers over the palms of the hands and soles of the feet while the rest of the body has four layers. Starting from the bottom, the layers are the stratum basale, stratum spinosum, stratum granulosum, stratum lucidum, and stratum corneum.

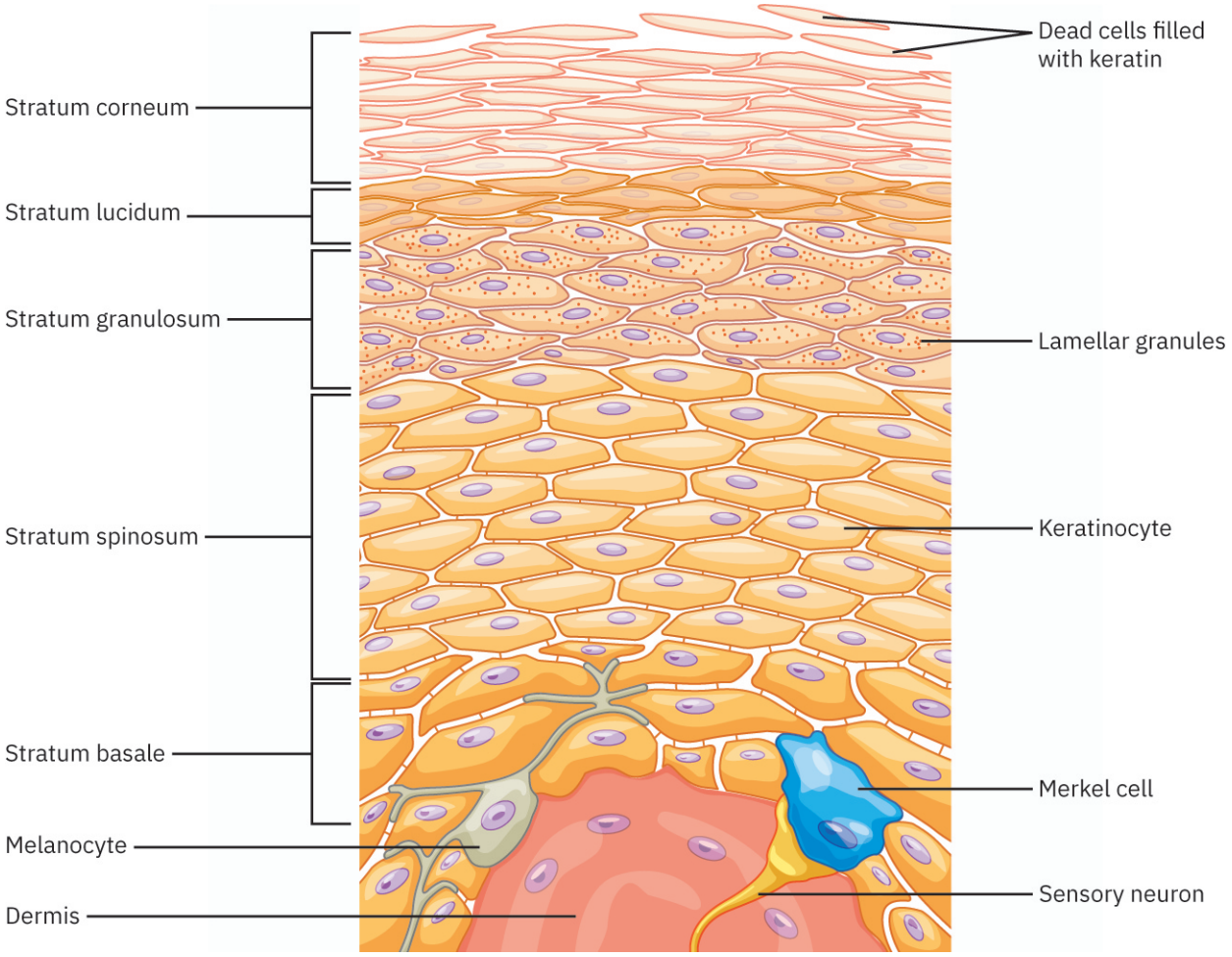


FIGURE 24.3 The epidermal layers include the stratum basale, stratum spinosum, stratum granulosum, stratum lucidum, and stratum corneum. The stratum lucidum is only present in the soles of the feet and palms of the hand. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The **stratum basale** (i.e., stratum germinativum) is the deepest layer of the epidermis and contains a type of cell known as a **melanocyte**, which produces a pigment called **melanin** and a cell called **keratinocyte** that produces **keratin**. Melanin forms a protective shield to protect the keratinocytes and nerve endings from damage caused by ultraviolet light. Melanin is also responsible for the color of the skin. Keratin is a fibrous, water-repellent protein that gives the epidermis its strong, protective quality. The keratinocytes move upward through the layers as they mature and become dead cells on the outermost layer of the skin (Osseiran et al., 2018). A **Merkel cell** serveas a s sensory receptor for light touch. These cells are also found in the stratum basale.

The next layer above the stratum basale is the **stratum spinosum**. This layer is several layers thick and contains cells that arise from the bone marrow and move up to the epidermis. The cells are "irregular, polyhedral cells with cytoplasmic processes and are often called 'spines' that extend outward and contact neighboring cells by desmosomes" (Yousef et al., 2022). A cell called a **Langerhans cells** is primarily located in the stratum spinosum. These cells are first-line defenders and are antigen-producing cells that determine the appropriate response to, for example, inflammation, or tolerance of foreign substances.

The next layer, the **stratum granulosum**, is only two to three cell layers thick. This layer contains a glycolipid that slows water loss across the epidermis. A thickening of plasma membranes of a cell, or **keratinization**, begins in this layer. The next layer, the **stratum lucidum**, is only found in the thicker areas of the skin (e.g., palms and soles of feet). It is two to three cell layers thick and is made up of flattened, dead keratinocytes. The outermost layer of the epidermis, the **stratum corneum**, is the thickest layer and makes up about 75 percent of the total thickness. This layer contains dead keratinocytes that secrete **defensin** (i.e., a class of host-defense peptides found in neutrophils that have antimicrobial and/or cytotoxic properties) and is part of the body's first immune defense.

Dermis

The second, deeper layer of the skin is the **dermis**, which is connected to the epidermis by dermal papillae. Its main function is regulating temperature and supporting, protecting, and nourishing the epidermis. This layer consists of the **papillary layer** and **reticular layer**. The upper papillary layer is the thinner of the two and is composed of loose connective tissue and contacts the epidermis. It also contains capillaries as well as touch and pain receptors. The deeper layer, the reticular layer, is the thicker of the two. This layer consists of dense connective tissue and collagen bundles and houses most of the sweat glands, sebaceous glands, hair follicles, hair, muscles, blood vessels, and deep sensory neurons (Yousuf et al., 2022).

The **sebaceous gland** is attached to the hair follicles and are present over the body minus the palms of hands and soles of feet. The sebaceous glands secrete sebum, an oily substance that makes the hair and skin waterproof. There are two types of sweat glands: eccrine glands and apocrine glands. The eccrine gland is located over the skin entirely, secretes sweat, and aids in thermoregulation. The apocrine gland correlates with the hair follicles present in the perineum, axillae, and areolae of the breasts. These glands are nonfunctioning and small until puberty has been reached. After the onset of puberty, the glands secrete a milky sweat.

Hypodermis

The **hypodermis** (i.e., **subcutaneous tissue**) is the subcutaneous fatty layer beneath the dermis that separates the skin from the underlying tissue. The hypodermis also anchors the dermis to the underlying tissues of the body and insulates, protects, and stores fat for the body. This layer is made up of loose connective tissue and stores about half of the body's fat cells. This layer provides a cushion for the body against trauma, stores fat for energy, and insulates the body from heat loss. Some skin appendages (e.g., hair follicles, blood vessels, sensory neurons) are found in the hypodermis. This layer also contains blood and lymph vessels and nerves. The blood vessels supply nutrients to the tissues, and the lymph vessels provide a pathway for the movement of waste products to and from the skin.

Functions of the Skin

The skin performs essential functions including protection, thermoregulation, sensation, absorption, elimination, and vitamin D production. The skin contributes to the psychosocial aspect of an individual because of its contribution to the external appearance of the person and plays a role in self-esteem. The skin also aids in communication with the brain via the sensory neurons located in the skin.

Protection

The skin provides protection because it covers the body entirely and serves as the physical barrier between the internal and external environments. Breaks in the skin trigger an immune response to promote healing and fight off foreign debris that may lead to infection. The many layers of the skin provide protection from injury to underlying tissues and organs. The skin also acts as a shield from microorganisms, damaging ultraviolet rays, and other substances including water. The layers of keratin and glycolipids in the skin serve to protect the body against moisture loss from both the surface and underlying structures.

Thermoregulation

Temperature regulation is another function of the skin. The skin is highly vascularized, which allows the body to regulate body temperature through vasoconstriction and vasodilation of blood vessels. When body temperature decreases, blood vessels vasoconstrict to decrease blood flow to the periphery in an effort to conserve core body heat. A muscle called the **arrector pili muscle** triggers hair follicles on the body to flex causing the hair to rise up (i.e., goosebumps), which further prevents heat loss (Figure 24.4). When body temperature increases, blood vessels vasodilate to increase blood flow. Sweat is secreted, which evaporates from the skin contributing to heat loss bringing the body temperature down (Kim & Dao, 2023).

FIGURE 24.4 The arrector pili muscles pull hair upright in an attempt to prevent heat loss and is also part of the fight-or-flight response of the sympathetic nervous system. (credit: "fresh breeze" by Everjean/Flickr, CC BY 2.0)

LIFE-STAGE CONTEXT

Thermoregulation and Newborns

During the first hours of life, newborns experience difficulties regulating their body temperature. The balance of heat production and heat loss is linked to the metabolism and oxygen consumption of the newborn. Newborns can attempt to conserve heat and increase their heat production by increasing peripheral vasoconstriction, metabolic rate, and muscular activity through moving. Newborns may also assume a fetal position to hold in heat and decrease body surface area exposure. Nursing interventions to aid in maintaining body temperature of newborns include the following (Albahrani & Hunt, 2019):

- Dry newborns completely after birth or baths to prevent heat loss through evaporation. (Baths should be performed after newborn is stable, and a radiant heat source should be used.)
- Prewarm blankets and caps to reduce heat loss through conduction.
- Place a cap on a newborn after drying thoroughly.
- Use a warm cover on the scale when weighing a newborn.
- Warm stethoscopes and hands before touching a newborn.
- Avoid placing a newborn near air vents or areas with drafts, and avoid placing cribs near cold outer walls.
- Keep infant transporter fully charged and heated.
- Avoid placing skin temperature probes over brown fat areas (found on the back, neck, and shoulders in babies to help regulate body temperature).
- Encourage parent skin-to-skin contact with stable newborns.
- Use heated and humified oxygen.

Sensation

The skin provides sensation for the body and allows a patient to feel temperature, pressure, pain, and touch through the various sensory nerve endings. Each type of sensory receptor sends signals to the brain and spinal cord that allow a patient to respond and adjust to the environment as needed. For example, when a patient touches something that is extremely hot, they typically move their hand away quickly, which is the body's reflex in response

to the external stimuli in an effort to protect itself from harm.

PATIENT CONVERSATIONS

Older Adults and Decreased Sensation

Scenario: A nurse is assessing an older adult with diabetic neuropathy who is being seen in the clinic for a sore on his right foot.

Nurse: Hi. My name is Linda, and I will be your nurse today. Will you tell me your name and date of birth?

Patient: Yes. Hi, my name is Joseph Gellar. My date of birth is April 25, 1941.

Nurse: Thank you. What brings you in today?

Patient: Well, I have this sore on my foot, and I am not sure how I got it.

Nurse: Okay, let me take a look. [The nurse assesses the wound.] Let's verify your health history

Patient: Well, I have diabetes, high blood pressure, and high cholesterol.

Nurse: What medications do you currently take?

Patient: I take my insulin, metoprolol, and atorvastatin. But I forgot to check my blood sugar today and take my insulin.

Nurse: Okay, have you noticed any changes in sensation? Like being able to feel things that are painful, hot, or cold?

Patient: Yeah, I noticed that a few years ago, but I just thought it was normal.

Nurse: Diabetic neuropathy is common with uncontrolled blood sugar and high levels of fat that can cause nerve damage. Because of this, it is important to be aware of your surroundings to avoid injury. Check your feet every day for any injuries like cuts, scrapes, or bruises. It is also important to try to manage your blood sugar as much as possible with your diet, exercise, and medications.

Patient: Oh, that makes sense. I think my wife and I have a friend who had something similar happen.

Nurse: Yes sir. Do you have any questions for me before I give an update to your doctor, so he can come in and see you?

Patient: No, that will be it for now.

Nurse: Okay, great. I will be in after the doctor sees you to go over any orders or treatments he prescribes for you.

Absorption

The skin is porous and therefore absorbs substances that may be on it. Substances that can be absorbed through the skin will enter the bloodstream. Certain medications may be absorbed by **transdermal administration** (placed on the skin and absorbed either locally or systemically), including scopolamine, estrogen, testosterone, some opioids, nicotine, and some contraceptives. It is important to note that anything on the skin may be absorbed and thus has the potential to cause harm. Certain chemicals and medications require appropriate handling to avoid the risk of harm or injury. For example, when administering fentanyl, it is important to wear gloves to avoid accidental absorption into the bloodstream. This is also why sunscreen or other lotions are not used on babies under 6 months old due to thin skin and increased absorption.

Elimination

The elimination function of the skin helps the body get rid of excess water and salts through sweat produced by the sweat glands. Sweat, or **perspiration**, may contain electrolytes, water, and nitrogenous wastes like urea, uric acid, and ammonia. In the event other organs become unable to eliminate toxins, the skin will try to push out toxins to aid in removal. In addition to removing wastes, the excretion function of the skin aids in regulating body temperature as previously described.

Vitamin D Production

The skin initiates the biochemical processes necessary for vitamin D production. Ultraviolet sun exposure leads to the conversion of 7-dehydrocholesterol to cholecalciferol (i.e., vitamin D_3) in the skin. Cholecalciferol is hydroxylated in the liver and then in the kidneys, which converts it into the active, metabolite form, calcitriol. The chemical process in which a hydroxl group (-OH) is introduced into an organic compound is called **hydroxylation**. This metabolite leads to enhanced calcium production in the gut and is vital for bone health (Kim & Dao, 2023).

Assessment Findings for Special Populations

There are distinct considerations for special populations that the nurse must consider when assessing a patient's skin. The assessments findings may vary among different cultures and ethnicities, developmental levels, and age groups. It is essential that the nurse be aware of the variations when performing a skin assessment to avoid stereotypes and to ensure accuracy when developing a plan of care to promote optimal outcomes. For example, darker skinned patients may not show pallor in the same way a lighter skinned patient would. The nurse must assess the mucous membranes, such as their gums or palpebral conjunctiva, of a darker skinned patient to adequately assess for pallor.

REAL RN STORIES

Identifying Dermal Melanocytosis

Name: Bailey, BSN
Clinical setting: Pediatric clinic
Years in practice: 3
Facility location: Rural area of Kansas

Our pediatric clinic is the only one in a 50-mile radius, so we are always swamped. One day, I was working in the well-baby side of our clinic. I was assessing a baby who was here for her 6-month wellness visit. Her mother, Ali, brought her in and introduced her baby girl as Alexis. After taking her medical history, I began the physical assessment. I noticed what appeared to be bruises along Alexis's back similar to those seen in abuse cases (Figure 24.5). I was concerned and thought that the baby may be experiencing abuse at home. The spots were bluish in color and along the baby's backside, so the areas were not visible to others.

As I began to plan my next steps, Alexis's mother stated, "I am ready for the Mongolian spots to start disappearing!" Then, I recalled learning about these in nursing school. I put my fingers on the skin to blanch the area and was relieved when I observed that the spots were nonblanchable, confirming dermal melanocytosis, formerly known as Mongolian spots. The spots are actually pigmented skin lesions that may be present at birth or develop within the first few weeks of life.

I asked Ali about the first noticeable spot, and she said they showed up when Alexis was about 2 weeks old. We then discussed how Mongolian spots may disappear by childhood. Ali said she understood but would be happy when they were gone. It was the first time I had actually seen Mongolian spots, and I was really relieved that they were bruises from abuse.

FIGURE 24.5 Dermal melanocytosis presents as skin lesions that may be present at birth or develop within the first few weeks of life. (credit: "6 month old Taiwanese baby girl," by abby/Flickr, CC BY 2.0)

Cultural Considerations

While people share a similar number and distribution of eccrine glands over the body, the glands vary in activity depending on patient-specific characteristics and environmental adaptations. For example, those born in tropical areas have more functioning eccrine glands than those who move there later in life. People who acclimate to hot environments do not excrete as much chloride in their sweat as others. People of Asian and American Indian descent have fewer functioning apocrine glands than White and Black people. The amount of sweat and body odor an individual has is genetically determined and is in relation to the functionality of the apocrine glands. Therefore, Asians and American Indians have little to no underarm sweat or body odor. People born farther from the equator usually have fairer skin and are at a greater risk of developing skin cancers due to lower levels of the protective pigment, melanin. Additional factors for fair-skinned individuals include the presence of freckles and an increased susceptibility to sunburn. However, all people with excessive levels of sun exposure are at risk for sun damage to skin and skin cancer and should, therefore, avoid excessive exposure to UV light. Darker skinned patients typically produce more melanin in general (Salminen et al., 2023). The higher levels of melanin are a protective factor and reduce the risk of developing skin cancers. However, darker skinned individuals are more susceptible to certain skin abnormalities (Figure 24.6):

- **post-inflammatory hyperpigmentation** (temporary pigmentation that occurs after an injury or inflammatory skin condition, most commonly seen in patients with darker skin types)
- **dermatosis papulose nigra** (small dark or skin-colored bumps on the face, neck, and upper torso, common in patients with darker skin colors)
- **keloid** (a thick fibrous scar caused by excessive collagen formation in response to trauma or a surgical incision)
- **pityriasis** (any of various skin conditions characterized by dry scaling patches of skin)
- **vitiligo** (chronic autoimmune disorder that causes partial or total loss of skin color in patches)
- hair loss
- dry skin

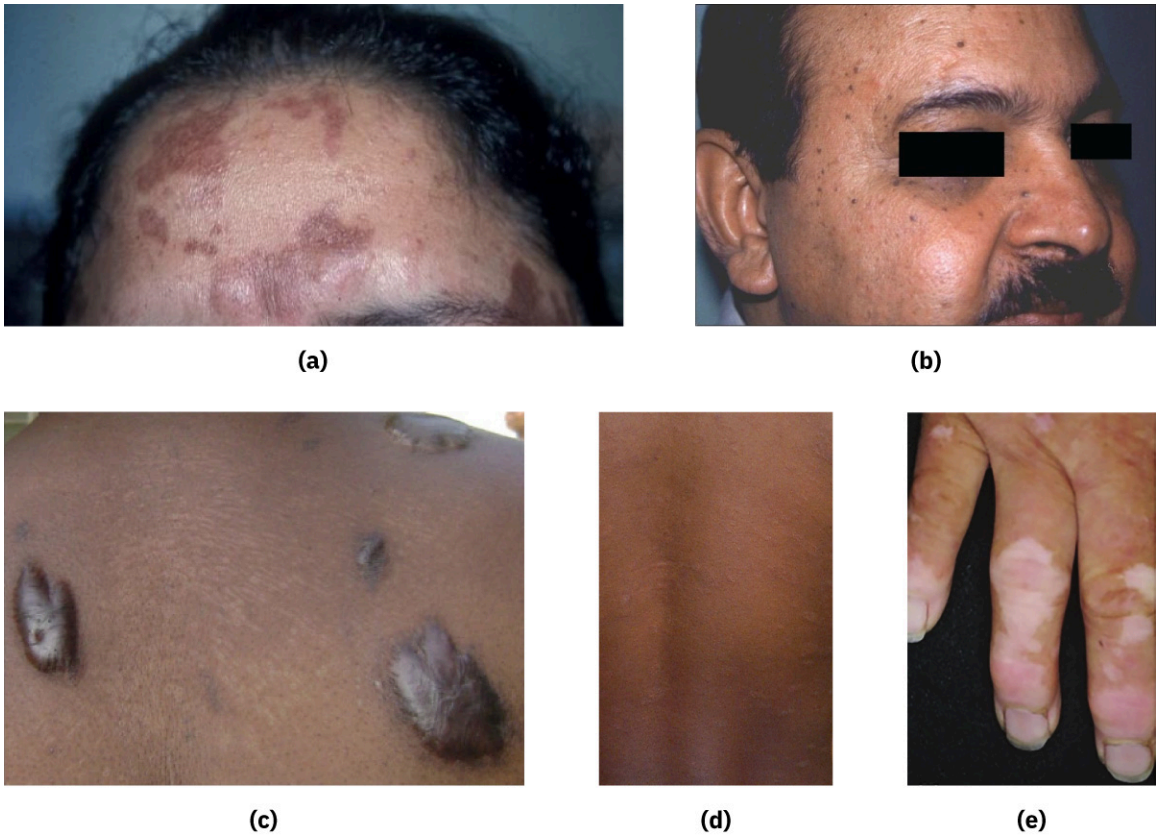


FIGURE 24.6 The skin abnormalities are as follows: (a) post-inflammatory hyperpigmentation, (b) dermatosis papulosa nigra, (c) keloids (d) pityriasis, and (e) vitiligo. (credit a: "Post inflammatory hyperpigmentation" by Kylie Aquino/Flick, Public Domain; credit b: "Figure 13" by Wolters Kluwer -- Medknow Publications, CC BY 2.0; credit c: modification of "Figure 1" by BMC Medicl Ethics, CC BY; credit d: "Pityriasis rosea 1," by Mike Blyth/Wikimedia Commons, CC BY 3.0; credit e: modification of "Figure 3" by Stacie J. Becker & Jeffrey E. Cassisi, CC BY 4.0)

Developmental Considerations of Infants and Children

A person's skin undergoes changes throughout the life span. Sebaceous glands do not function maturely at birth. Sebum production increases in the prepubescent and adolescent years, which makes individuals within these age ranges more prone to acne. The sweat glands of an infant function to some degree and produce sweat in response to heat or emotional stimuli. By the time the child reaches middle child years, the sweat glands are fully functional. Until the glands function fully, temperature regulation is not as efficient as it is with the fully functioning glands of older children and adults.

Infants also have a thinner epidermis than adults. Infants have less subcutaneous tissue, so the blood vessels lie closer to the skin's surface. Therefore, an infant loses more heat through the skin's surface than an older child or adult. In addition, substances absorb more readily through infant skin than adult skin because of the thinness of the skin. Infant skin contains more water than adult skin. The epidermis is loosely bound to the dermis, and that means that friction may easily separate the layers, resulting in blisters or skin breakdown.

Regardless of ethnicity, infant skin is less pigmented, placing the infant at higher risk of skin damage from sun exposure. As the infant ages, the skin becomes tougher and less hydrated, making the infant less susceptible to invasions from microorganisms. When the child reaches teenage years, the skin characteristics and thickness are at the adult level. Infant skin and mucous membranes are more easily injured and susceptible to infection; therefore, the nurse must carefully handle infants to protect them from harm or infection.

LIFE-STAGE CONTEXT

Overheating Infants

Overheating an infant can easily happen if a caregiver fears that the infant is cold. Newborns and infants do not have

a mature thermoregulatory system. This means that they are more vulnerable to overheating. Signs and symptoms of overheating include the infant

- feeling warm to the touch;
- having flushed or red skin;
- developing heat rash;
- sweating or having damp hair;
- developing tachycardia;
- developing tachypnea;
- acting fussy;
- appearing sluggish, confused, or dizzy; or
- becoming unresponsive.

Nurses should be aware of these signs and the interventions needed: administer fluids (e.g., breast milk, water, or formula depending on their age), apply cold compresses, take off any excessive clothing or bedding, and go to a well-ventilated area. If the nurse is educating a caregiver, they should also include the need to call 911 if the child is unresponsive. Interventions to prevent overheating include avoiding the use of excessive clothing and bedding, keeping the room temperature between 68°F and 72°F (20°C and 22°C), ensuring adequate room ventilation, using curtains if needed to block out excessive light and heat, and avoiding the use of heating pads.

The nurse must also consider patients with developmental differences, such as cognitive disabilities. Individuals with cognitive dysfunction may not know how to check their own skin for abnormalities or impairments, or they may not recognize any changes in their skin. These patients may also neglect skin care. This can lead to itching, scratching, and picking because of buildup of dead skin and other debris, which can lead to injury or infection. The nurse may need to establish rapport with those who have disabilities to gain their trust. This enables the nurse to perform an assessment and provide coaching to teach them how to perform skin assessments at home. If a patient with a disability has a caregiver, the caregiver should be included in education of skin assessment as well as findings to report.

The nurse must also consider the patient's developmental level when communicating and when describing the steps of assessment. For example, an infant may be examined in the caregiver's lap versus the school-aged child who can sit on the examination table. The nurse should speak with terms that are appropriate for the age or developmental level. The nurse should also speak to the patient regardless of the developmental level, especially school-age children and adolescents, to help them feel included in the plan of care.

Age-Related Considerations

Much like the infant's skin changes from birth to adulthood, the skin continues to change as a person ages (Figure 24.7). The thickness of the epidermis in older people decreases, making the skin more delicate and at risk of tears or injury. The subcutaneous (SQ) tissues also become thinner, making thermoregulation more difficult and increasing the risk of pressure ulcers. The degree in which a population of cells proliferates, or **mitotic activity**, decreases leading to delayed wound healing. As the subcutaneous and dermal tissues thin with age, the skin becomes more prone to wrinkles, and pressure and pain sensations are reduced.

FIGURE 24.7 Aging is a normal part of life and includes skin changes. The skin layers become thinner and less elastic, making the skin more prone to wrinkles and impaired skin integrity. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

As the activity levels of the sebaceous and sweat glands decrease, the skin becomes dryer, and older people may experience **pruritis**, itching. Melanin declines with age leading to unevenly pigmented skin and gray or white hair. Hyperplasia of the melanocytes may lead to small areas of **hyperpigmentation**, darkened patches of skin (liver spots). Decreased melanin in an area can cause **hypopigmentation**, lighter patches of skin (age spots). The elastic fibers degenerate causing the skin to lose its elasticity. There is often a redistribution of adipose tissue leading to cellulite (lumpy skin), increased abdominal fat, sagging of breasts, and reduced **tenting** (when the skin does not snap back when pinched; instead, it maintains a tentlike shape, which may indicate dehydration). Decreased vitamin D production, which is normal with aging, increases the risk of osteomalacia (bone demineralization) and osteoporosis (a decrease in bone mass and density).

24.2 Skin Integrity

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify risk factors for impaired skin integrity
- Examine common skin disorders that cause impaired skin integrity
- Describe health promotion behaviors related to skin integrity

Skin integrity refers to the overall health of the skin. Factors that influence healthy skin are patient specific. These factors include age, genetics, and overall health. For example, the skin color of a patient of Asian descent will appear different from that of a patient of Eastern European descent. In addition, skin changes as people age, so the nurse must consider age when assessing a patient's skin. It is crucial that nurses obtain the patient's health history and perform an assessment to identify risk factors for impaired skin integrity to effectively implement nursing interventions and provide education to patients and families. The nurse must be aware of common skin disorders that can lead to impaired skin integrity as well as health promotion behaviors related to skin integrity.

Risk Factors for Impaired Skin Integrity

When the skin is healthy and unbroken, the skin is able to efficiently carry out its functions. Resistance of the skin and mucous membranes to injury varies among patients and is dependent on factors including age and medical conditions. Patients with adequate nutrition are also more resistant to injury or disease. Adequate perfusion is vital in maintaining cell life. When skin integrity is impaired, cells do not get the nourishment they need and cannot eliminate wastes effectively. To identify risks for impaired skin integrity, the nurse must examine lifestyle and behavioral factors as well as genetic and state of health factors.

Lifestyle and Behavioral Factors

Lifestyle and behavioral factors that affect skin integrity include a patient's nutrition, activity levels, sexuality, medications used, illicit drug use, body piercings, tattoos, and substances that come in contact with the skin like soaps, detergents, and lotions. Nutrition plays an important role in the health of a patient's skin. Inadequate nutrition may lead to skin breakdown, delayed wound healing, premature aging of the skin, inflammation, dryness, and changes in hair. A patient's exposure to the sun or other UV light may place them at risk of skin cancer as a result of prolonged exposure.

The use of certain types of hygiene products may also place a patient at risk of impaired skin integrity. Certain types of soaps, lotions, and detergents may be too harsh for a person's skin based on their age, health condition, and genetics. Some detergents and soaps increase the pH levels of the stratum corneum, and those products may cause rashes, inflammation, dermatitis, and acne breakouts. Older people who do not use **emollients** (ingredients that soothe dryness) are at risk of impaired skin integrity because their skin is dry and more susceptible to cracking.

State of Health and Genetic Factors

State of health and genetic factors may affect the skin. Nutrition can adversely or positively affect the health of the skin. Some people experience dehydration and malnourishment caused by an illness versus a lifestyle choice. Dehydration and malnourishment result in a deficiency in fluids, protein, and vitamin C. This causes the skin to lose its elasticity and become more susceptible to breakdown.

Side effects of certain medications may also affect skin. For example, localized pruritis (itching) is common with hydrocodone, and patients may scratch themselves in an attempt to relieve the itching. Corticosteroids cause thinning of the skin making it more susceptible to injury, and certain antibiotics increase sensitivity to sunlight causing an individual to burn easily. Patients who experience incontinence or have issues with diarrhea are at risk of skin breakdown as a result of the excess moisture. Patients with jaundice are at risk of lesions and infections from scratching because of dry, itchy skin. There are also numerous conditions that cause secondary disruptions to the integumentary system. For example, patients undergoing radiation treatment for cancer are at risk of **erythema** (reddening of the skin), pruritus, or loss of skin integrity (Figure 24.8).

FIGURE 24.8 Erythema (i.e., reddening of the skin) has multiple causes—in this case, heat rash. (credit: "16850" by Dr. Lester Cordes/CDC, Public Domain)

Common Skin Disorders

There are various skin disorders that the nurse should be aware of to effectively care for their patients. Common

skin disorder classifications include bacterial infections, viral infections, fungal infections, inflammatory reactions, and skin cancers. It is crucial for the nurse to be able to identify and describe skin disorders as well as their underlying cause and treatment.

Bacterial Infections

Bacteria naturally reside on the skin. An infection can occur, however, when the skin is not intact allowing bacteria to enter through hair follicles or breaks in the skin (e.g., scrapes, surgical incisions, bites). Some bacterial infections are localized and involve just the skin or the soft tissues under the skin, or they can become systemic involving multiple body systems. Common bacterial infections of the skin include impetigo, folliculitis, carbuncles, and cellulitis (Table 24.1).

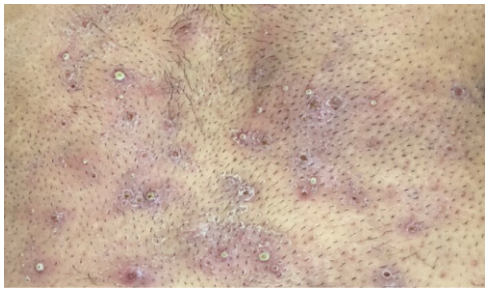
Disorder	Description	Example
Impetigo	Contagious superficial skin infection	(attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)
Folliculitis	Infection of the hair follicle	 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

TABLE 24.1 Common Bacterial Skin Disorders

Disorder	Description	Example
Carbuncle	Clusters of deep skin abscesses	(credit: "Cutaneous abscess caused by MRSA on the hip" by CDC, Public Domain)
Cellulitis	Localized infection and inflammation	(credit: "Cellulitis toes (44699139982)" by John Campbell/Wikimedia Commons, Public Domain)

TABLE 24.1 Common Bacterial Skin Disorders

Impetigo

A highly contagious superficial skin infection called **impetigo** is most commonly found in children. Patients with impetigo can spread it to other areas of their own body as well as to other people they come in contact with. Although it can occur anywhere on the body, it primarily occurs on the arms, legs, and face. Impetigo is either bullous or nonbullous in nature. Caused by *Staphylococcus aureus*, **bullous impetigo** is usually sporadic and develops on intact skin. Flaccid bullae generally grow in size to form larger blisters filled with clear yellow to dark turbid fluid and burst to expose raw skin that becomes covered with a thin brown crust. The most common kind of impetigo, **nonbullous impetigo**, usually occurs after injury to the skin or as a secondary bacterial infection of another skin disorder like atopic dermatitis. Nonbullous impetigo presents as clusters of pustules that rapidly break down and form thick adherent honey-colored crusts on the face and extremities. Other risk factors for impetigo include poor hygiene and a moist environment. Treatment for impetigo may include topical or oral antibiotics.

Often called deep impetigo, **ecthyma** is a skin infection that occurs deep inside the skin characterized by shallow, small ulcers that look punched out and may contain pus. The brown crust that covers the ulcers is thicker than the crust that covers the ulcers of impetigo. Treatment options for impetigo and ecthyma include antibiotic ointments or creams for smaller areas. Larger infected areas or areas that are not responding to the topical antibiotics may require oral antibiotics. The infected areas should be washed gently with soap and water multiple times a day to remove crusts. Individuals who have recurrent infections should have a nasal swab cultured to see if they are a nasal carrier of *Staphylococci* or *Streptococci*. People who are nasal carriers will need a topical antibiotic applied to their nasal passages (Rehmus, 2023).

Folliculitis

An infection of the hair follicle that often results from occluded hair follicles is called **folliculitis**. It may affect a single hair follicle or multiple hair follicles. Common risk factors for folliculitis include poor hygiene, maceration (i.e.,

occurs when skin is exposed to a moist environment for too long), occlusive emollient products, and contact with contaminated water. Folliculitis often appear as pustules surrounded by erythema where a hair follicle is present. Hair follicles may easily fall out as well. Treatment includes warm compresses after washing with antibacterial soap and water multiple times a day, topical antibiotics, and oral antibiotics.

Carbuncle

Clusters of skin abscesses connected to one another below the surface of the skin, known as **carbuncles**, often form when one or more hair follicles become infected. If left untreated, the abscesses fill with pus and will rupture, discharging a creamy pink or white fluid. If the abscess is too deep, it may not be able to drain on its own. Bacteria can spread from the abscess and infect surrounding tissues and lymph nodes. Infected individuals may also have a fever, chills, and malaise. Carbuncles are likely to leave a scar. Most carbuncles are caused by *Staphylococcus aureus*. Risk factors for the development of carbuncles include poor overall health, friction from shaving or clothing, and poor hygiene. Patients with weakened immune systems are more likely to develop *Staphylococcus* infections that lead to carbuncles. Some skin abscesses may go away on their own with the use of warm compresses. However, some carbuncles may require a provider to open and drain the abscess and then wash out the pocket with a sterile saline solution. Oral antibiotics may also be needed to aid in treating the infection. Individuals with recurrent skin abscesses may be instructed to wash their skin with antiseptic solutions (e.g., iodine) (Rehmus, 2023).

Cellulitis

A localized infection and inflammation of the skin and tissues beneath the skin is called **cellulitis**. It is most often caused by *Streptococcus*, *Staphylococcus*, and methicillin-resistant *Staphylococcus aureus.* The infection usually occurs when the bacteria enter open wounds, skin abscesses, fungal infections, or other skin conditions. Although cellulitis can occur anywhere on the body, it occurs most often on the legs and affects one side of the body. Bilateral cellulitis is rare, and its presence should warrant assessment of other health conditions (Chuang et al., 2022).

The infection generally presents with redness, tenderness, and pain. The skin also often becomes hot and swollen and may look slightly pitted. Fluid-filled **vesicles** (small blisters) or **bullae** (large blisters) may appear on the infected areas. Some patients may experience fever, rapid heart rate, headache, confusion, hypotension, or chills. If the infection spreads to the lymph nodes, the nodes can become tender and swollen, and the vessels can become inflamed. Treatment may include antibiotics, drainage of any abscesses, and treatment of any disorders contributing to the infection (Rehmus, 2023). Compression stockings (i.e., thromboembolic deterrent [TED] hose) may also be effective by reducing **edema** (swelling caused by excessive buildup of fluid in tissue spaces or a body cavity) and increasing blood flow.

Viral Infections

Viral skin infections are the result of a reaction from a systemic virus within the body or an infection of the skin itself. This type of infection encompasses a variety of conditions such as herpes simplex, herpes zoster, verruca, and human papillomavirus (Table 24.2). Viral skin infections are often contagious, and some may be passed by skin-to-skin contact or through the air when the infected individual coughs or sneezes.

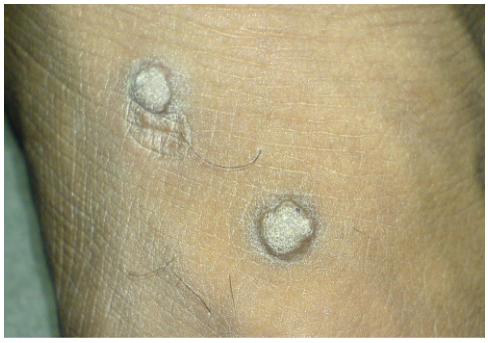
Disorder	Description	Example
Herpes simplex	Infection caused by herpes simplex virus type 1 (HSV-1) and type 2 (HSV-2)	(credit: “Herpes labialis - opryszczka wargowa” by Jojo/ Wikimedia Commons, Public Domain)
Shingles	Rash associated with varicella-zoster virus	(credit: modification of “21506” by K.L. Herrmann/CDC, Public Domain)
Verruca	Growths on the skin caused by human papillomavirus	 (credit: “Verruca vulgaris” by Abbassyma/Wikimedia Commons, Public Domain)

TABLE 24.2 **Common Viral Skin Disorders**

Herpes Simplex

A viral infection that can cause painful blisters or ulcers is called **herpes simplex** and is categorized into herpes simplex virus type 1 (HSV-1) and type 2 (HSV-2). Most often, HSV-1 spreads by oral contact and causes infections in or around the mouth or lips. This virus presents as ulcers or blisters (cold sores). It can also cause genital herpes if an infected person made contact with another person’s genital mucosa. Herpes simplex virus type 1 is commonly spread through kissing, sharing objects that are in or near the mouth, and any other skin-to-skin contact. On the other hand, HSV-2 is spread by sexual contact and causes genital herpes. This virus usually presents as open sores, blisters, or bumps around the anus or genitals. It may also appear in the sacral area. The virus can also be spread

from mother to baby during childbirth if the mother has an active outbreak.

Herpes Zoster

Chicken pox, or **varicella**, is caused by the varicella-zoster virus. After the initial illness has ended, the virus remains dormant in the dorsal root ganglia and can reactivate later in the person's life causing a painful, maculopapular rash called **herpes zoster** (or shingles). Patients who have received a varicella vaccine are also at risk of developing herpes zoster later. The rash associated with shingles most often appears on the trunk of the body along a thoracic dermatome. The rash primarily stays on one side of the body, follows dermatomes, and does not cross the midline. Although not common, the rash can affect three or more dermatomes and is called **disseminated zoster**. This type of rash occurs in patients with a weakened or suppressed immune system. The symptoms are often painful, tingly, or itchy and may precede the appearance of the rash. Some patients may also experience headache, malaise (overall weakness) in the **prodromal** state (period between the appearance of initial symptoms and the full development of an illness), chills, or photophobia (bright light sensitivity). Vesicles develop into clusters, which continue to form over three to five days and gradually dry and crust over. The rash usually heals in two to four weeks and can leave scarring or pigmentation changes behind. Shingles can be prevented by the recombinant zoster vaccine. This virus can spread to others when it is active and can cause varicella in those who have never had varicella or been vaccinated against it. Antiviral medications, like valacyclovir and acyclovir, may also be used to shorten the length and severity of a shingles breakout.

Verruca

Warts, or **verruca**, are growths on the skin caused by the viral infection, human papillomavirus (HPV). The warts may appear raised or flat and can have a black dot in the middle. Warts are often not painful; although, some people may complain of pain. Warts may develop at any age but are more commonly found in children. Patients with warts may have as few as one or as many as hundreds. Warts are contagious and can spread from one area of the patient's body to another body part or to another person through prolonged or repeated contact. Only a small break in the skin needs to be present for the virus to spread (Dinulos, 2023c). Genital warts, however, are spread by sexual contact.

Verrucae are classified by their shape and location. A type of wart that grows in clusters is referred to as a **mosaic wart**. Common warts are firm, round, or irregularly shaped growths with a rough surface. They may be brown, yellow, gray-black, or light gray and are generally less than 1 centimeter across. These warts appear on the face, fingers, elbows, and knees. A wart on the soles of the feet, known as a **plantar wart**, is usually flat due to the pressure of standing and walking. Warts that appear on the soles of the feet may cause pain when walking or standing. A wart found on the palms of the hand is called a **palmar wart**. Both palmar and plantar warts tend to be hard and flat with well-defined boundaries and a rough surface. Thick, cauliflower-like growths around the fingers are known as periungual warts. A long, small, narrow growth that appear on the lips, face, or eyelids is called a **filiform wart**. Typically smooth, flat topped, and either yellow-brown, pink, or flesh colored, **flat warts** may appear in areas that are shaved or along stretch marks. A wart (condyloma acuminata, venereal warts) occurring on the vagina, vulva, cervix, and penis is called a **genital wart** and can be either flat, smooth, and irregular or velvety bumpy growths with a cauliflower-like texture (Dinulos, 2023c).

Generally, warts are easily recognizable by appearance. Occasionally, a biopsy may be needed to confirm the diagnosis. Treatment options include applying topical chemicals and burning, cutting, or freezing the wart. A *Candida* yeast antigen may be injected into the warts causing an immune response to fight against the virus (Dinulos, 2023c). Warts may return even after removal. The human papillomavirus (HPV) vaccine may be used to prevent the spread of the virus. Patients with genital warts should have the warts removed to prevent spreading from person to person. They should also be educated on safe sex and the need to inform their partners of the diagnosis.

Fungal Infections

Fungal skin infections caused by fungus overgrowth most commonly occur in moist areas of the skin, such as between the toes, under the breasts, or in the genital areas. Fungal skin infections are usually caused by yeasts (e.g., *Candida albicans*) or dermatophytes (e.g., *Microsporum*). The fungi live on the stratum corneum and typically do not penetrate deeper into the skin. Patients who experience obesity are more likely to have fungal skin infections related to excessive skinfolds. Patients with diabetes are also at risk of fungal infections (Aaron, 2023). Common fungal skin infections include six types of tinea (Table 24.3).

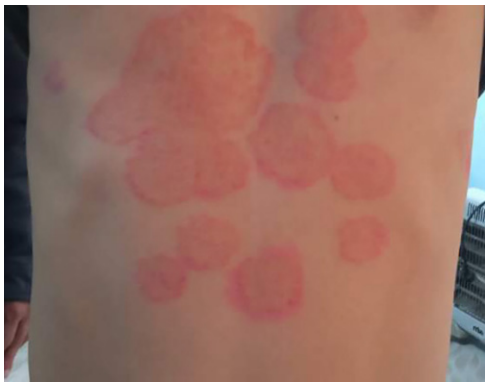
Disorder	Description	Example
Tinea pedis	Also known as athlete's foot; a fungal infection characterized by a buildup of scale and may be accompanied by redness and itching	(credit: "Athletes foot" by Ellington/Wikimedia Commons, Public Domain)
Tinea barbae	Also known as beard ringworm; generally a superficial infection but may occur deeper	(credit: modification of "4807" by CDC, Public Domain)
Tinea corporis	Also known as body ringworm; a fungal skin infection affecting the face, arms, trunk, and legs	 (credit: modification of "Tinea corporis" by Mohammad3021/Wikimedia Commons, Public Domain)

TABLE 24.3 Common Fungal Skin Disorders

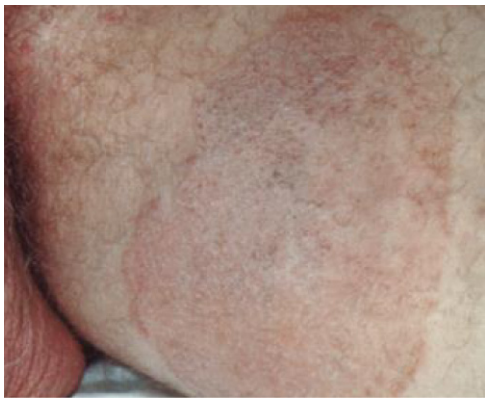
Disorder	Description	Example
Tinea cruris	Also known as jock itch; a fungal skin infection of the groin	 (credit: modification of "21482" by Dr. Lucille K. Georg/ CDC, Public Domain)
Tinea capitis	Also known as scalp ringworm; a fungal infection of the scalp	(credit: modification of "Tinea capitis clinical presentation" by Coulibaly O, Kone AK, Niaré-Doumbo S, Goïta S, Gaudart J, Djimdé AA, et al., CC BY 4.0)
Tinea unguium	Also known as onychomycosis; a fungal infection of the toenail or fingernail	(credit: modification of "579" by Dr. Edwin P. Ewing, Jr./CDC, Public Domain)

TABLE 24.3 **Common Fungal Skin Disorders**

Tinea

Known as ringworm, **tinea** may be found on the feet, beard, body, groin, scalp, or toes. Athlete's foot, or **tinea pedis**, is characterized by a buildup of scale and may be accompanied by redness and itching. This infection is commonly caused by sweat from the feet accumulating between the toes allowing fungi to grow. This infection can spread to others who share showers, bathrooms, or other areas where infected individuals walk barefoot. Patients who wear tight shoes are also at risk of developing this infection. Fluid-filled blisters may also form with this infection. If the scaling is severe, the skin may crack and can lead to bacterial infections. Athlete's foot may be treated by topical

antifungal ointments or oral antifungals like itraconazole (Sporanox). Prevention measures include wearing sandals or shower shoes in communal bathrooms, wearing breathable shoes, frequently changing socks, minimizing moisture on feet and in footwear, and completely drying feet and in between toes after bathing. Antifungal powders may also be used to aid in keeping the feet dry (Aaron, 2023).

Beard ringworm, or **tinea barbae**, is generally a superficial infection but may occur deeper into the dermis. Tinea barbae is characterized by circular patches or a swollen patch that may ooze pus and can result in scarring or whisker loss. Most beard skin infections are caused by bacteria rather than fungi; however, tinea barbae is a fungal infection. Antifungal medications or corticosteroids are common treatments for beard ringworm (Aaron, 2023).

Body ringworm, or **tinea corporis**, is a fungal skin infection affecting the face, arms, trunk, and legs. This infection is characterized by round, pink-to-red patches with raised, scaly borders that can be itchy. Clearing in the center may also be present. This infection can spread from one area of an infected person's body to another or from person-to-person contact. Antifungal medications may be applied topically or taken orally to treat this infection (Aaron, 2023).

Jock itch, known as **tinea cruris**, is a fungal skin infection of the groin. This is often characterized by a painful, itchy rash with a scaly, pink border. This infection is more common in men and is caused by trapped moisture between the scrotum and thigh. It most often develops in warm weather or when wearing tight or wet clothing. Patients experiencing obesity are at risk as well because of trapped moisture in skinfolds. The infection usually begins in the skinfolds of the genital area and spreads to the upper inner thighs. Antifungal medications may be taken orally or applied topically (Aaron, 2023).

Scalp ringworm, or **tinea capitis**, is a fungal infection of the scalp. This infection is characterized by a scaly, dry patch, a patch of hair loss, or both. The hair shafts may break at the surface (black dot ringworm) or break above the surface (gray patch ringworm). This infection can also cause dandruff-like flaking. A kerion may also be present. A kerion is a large, inflamed, swollen, and sometimes painful patch that can ooze pus. A culture may be needed to assess the type of fungus, or an ultraviolet light may be used to confirm the diagnosis. Treatment of scalp ringworm includes oral antifungals, antifungal creams, selenium sulfide (Selsun Blue) shampoos, or corticosteroids (Aaron, 2023).

A fungal infection of the toenail or fingernail is called **tinea unguium**. This infection is characterized by thickened nails that crumble easily and have white or yellow discoloration. The whole nail may become detached in more severe infections. If left untreated, the patient may have pain, balance issues, or a candidal infection. Treatment options include oral antifungals, topical ciclopirox olamine (Penlac) nail lacquer, and topical antifungals. Prevention is similar to that of preventing athlete's foot.

Parasitic Infections

An organism that lives in or on an organism of a different species (the host), and depends on the host for nutrients is called a **parasites**. Parasitic skin infections occur when insects or worms burrow into the skin of a patient to lay their eggs or live there. Common parasitic skin infections include scabies and pediculosis (lice) (Table 24.4). Both infections are spread from person to person through physical contact. The parasites can live on physical objects such as brushes, clothing, furniture, and bedding; therefore, the parasites can spread to another person as well when contact is made with infested objects. Parasitic infections are generally treated by removing the source of the infestation as well as topical and oral medications to aid in killing the parasites and relieve any swelling, itching, or skin damage (Campbell & Soman-Faulkner, 2023).

Disorder	Description	Example
Scabies	Mites	(credit: "ScabiesDo3," by Cixia/Wikimedia Commons, Public Domain)
Pediculosis capitis	Head lice	(credit: "Heavily infested hair with Pediculus humanus capitis (arrow)" by NIH, CC BY)
Pediculosis corporis	Body lice	(credit: Abdoul Karim Sangaré, Ogobara K. Doumbo, Didier Raoult, CC BY 4.0)

TABLE 24.4 **Common Parasitic Skin Disorders**

Scabies

Caused by the *Sarcoptes scabiei* mite, **scabies** are accompanied by extreme itching no matter how few mites have burrowed into the skin (Dinulos, 2023a). Initially, the burrows are often visible and can be anywhere on the body, except they are less likely on the face. The burrows appear as a thin line and can have a tiny bump where the mite is located. Darker skinned individuals may only display raised, solid areas. Due to the intense scratching, this infestation can often turn into a bacterial infection. Over time, the areas usually become inflamed, making the burrows less visible. Infestations that turn severe may cause areas of crusted, thickened skin that do not itch. Risk

factors for attracting scabies are crowded conditions like schools, multifamily homes, and shelters. Hygiene is not a factor with scabies.

Pediculosis

A lice infestation is called **pediculosis**. Lice are wingless insects that are not easily seen and may infect the body, head, or pubic area. Each type of lice can cause severe itching and bites that range from red (body and head lice) to grayish blue (pubic lice). An infestation with lice may be diagnosed with the presence of lice, nits (eggs), or both. A fine-toothed comb may be needed to assess the hair for lice, and the nits may be easier to see versus the lice itself. Body lice are often found in the seams of clothing and bedding. Pubic lice may require an ultraviolet light or a microscope to be seen. Pubic lice may leave feces on the patient's skin or underwear, which are characterized by dark brown specks. An infestation with lice will require replacing or thoroughly cleaning and drying linens and clothing. Items that are not able to be laundered can be placed in an airtight bag for two weeks to kill the lice. People who have close contact with an infected patient should also treat themselves, including sexual partners (Dinulos, 2023b).

Body lice (**pediculosis corporis**) live on and lay their eggs on bedding and clothing rather than the skin. The lice will migrate to various areas of the body to feed. Patients who live in crowded areas, have poor hygiene, or are of low socioeconomic status are more at risk of acquiring body lice. The lice spread because of sharing contaminated bedding and clothing. This type of lice can also transmit different types of fevers (Dinulos, 2023b). Treatment includes thoroughly cleaning linens and clothing.

Head lice (**pediculosis capitis**) are found on the hair and scalp. The lice lay eggs that take about one week to hatch and are called nymphs. It takes another seven days for the nymphs to reach their adult stage. The lice require a blood supply to live and will feed off their host several times a day. If the lice are deprived of blood, they will usually die within one to two days. Hygiene and socioeconomic status have no bearing on head lice. Shampoos that contain permethrin (Acticin), piperonyl butoxide (Red Pediculicide), or lindane are effective for treating head lice. Creams that contain malathion (Ovide) or spinosad (Natroba) suspensions may also be effective. Nits need to be removed with a fine-toothed comb. Treatments must be repeated seven to ten days later to kill any potential newly hatched lice. Ivermectin (Stromectol) may also be used if lice are resistant to medicated shampoos or creams (Dinulos, 2023b).

Pubic lice (**pediculosis pubis**), often referred to as crabs, infest the hairs of the anal and genital areas but can also infest the thigh, chest, and facial hair. This type of lice may be spread by sexual contact or close contact or by physical objects like linens and clothing. The same shampoos and creams used for head lice are effective for treating pubic lice. In addition, petroleum jelly, physostigmine ointment, fluorescein eye drops, petrolatum salve, and oral ivermectin (Stromectol) are effective for the lice that have infested a patient's eyelashes (Dinulos, 2023b).

Inflammatory Reactions

Inflammatory skin reactions are either chronic or acute and are the result of a hypersensitivity reaction, an autoimmune disorder, or a genetic predisposition. These skin reactions may also recur when the stress factor or environmental trigger that caused the reaction are present. Inflammatory skin reactions include eczema, seborrheic dermatitis, urticaria, acne vulgaris, psoriasis, and systemic lupus erythematosus (SLE) (Table 24.5). These reactions require obtaining a comprehensive health history including family history, medications, diet, hygiene practices, and environmental conditions as well as a full assessment to identify possible triggers or causes.

Disorder	Description	Example
Eczema	Itchy, chronic inflammation of the skin	(credit: “Eczema-arms” by Jambula/Wikimedia Commons, Public Domain)
Seborrheic dermatitis	Inflammatory skin reaction primarily on the scalp and face	(credit: “Seborrhoeic dermatitis2” by Klaus D. Peter/ Wikimedia Commons, CC BY 3.0)
Urticaria	Rash characterized by wheals and erythema	(credit: “Urticaria2” by Hyper84/Wikimedia Commons, Public Domain)

TABLE 24.5 Common Inflammatory Skin Disorders

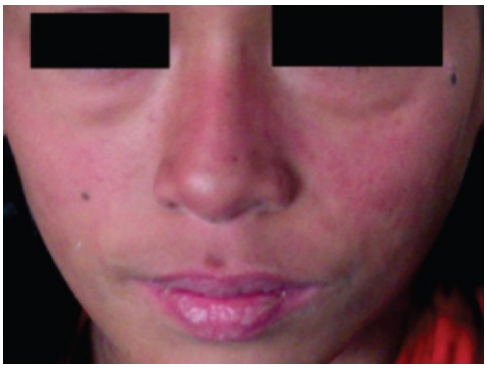
Disorder	Description	Example
Acne vulgaris	Inflammatory skin reaction caused by clogged hair follicles	(credit: "Acne papulopustulosa" by Dr. Thomas Brinkmeier, CC BY 4.0)
Psoriasis	Recurring, chronic condition that causes red patches with silvery scales	(credit: "psoriasis on elbow" by Haley Otman/ Wikimedia Commons, CC BY 3.0)
Systemic lupus erythematosus	Chronic, autoimmune inflammatory disorder, often presents with a butterfly rash	 (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

TABLE 24.5 **Common Inflammatory Skin Disorders**

Eczema

Atopic dermatitis, known as **eczema**, is part of the atopy family. Atopy means there is a genetic tendency to develop allergic conditions like asthma, eczema, and allergic rhinitis, and it is associated with a heightened immune response. This rash is characterized by itchy, chronic inflammation of the outer skin layers. In the acute phase, the rash may be red, oozing, and crusted areas with occasional blisters present. The chronic phase may have dry, thickened areas caused by scratching and rubbing. The rash may occur in one or more areas in adult patients and can spread to several areas on infants. The rash can vary in intensity, color, and location but is always itchy and triggers scratching, which can cause the skin to break and bleed. Stress, irritation, and dry air also make the itching more intense. Environmental triggers include harsh soaps, excessive bathing or handwashing, sweating, rough fabrics (e.g., wool), or *Staphylococcus aureus* present on the skin. Allergens like wheat, dairy, and eggs may also be a trigger. Tears in the skin caused by scratching or rubbing can often lead to bacterial infections.

Prevention includes minimizing triggers and managing stress. Treatments include skin care, ultraviolet light, corticosteroids, and biologic agents. General skin hygiene includes using soap substitutes, applying moisturizers after bathing, using lukewarm water, and patting skin dry. Antihistamines may also be used to relieve itching. Antibiotics may be needed when the reactions escalate to bacterial infections or for patients who are at risk of developing an infection (Ruenger, 2023). This reaction can be disabling and have long-term emotional effects that may require additional assessment and interventions to promote positive coping and body image.

Seborrheic Dermatitis

An inflammatory skin reaction called **seborrheic dermatitis** affects the scalp and may also be present on the face, around the ears, and occasionally on other areas that have oil glands present. This reaction is more common in infants and adult patients from 30 to 70 years of age. Genetic factors and cold-weather conditions affect the severity and risk of this disorder. The rash is characterized by greasy, yellow scales, pruritis, and dandruff.

Urticaria

Hives, or **urticaria**, is a type I hypersensitivity reaction resulting from an immunologically mediated antigen-antibody response of mast cells releasing histamine. This reaction is characterized by wheals (or hives) and erythema present after vasodilation and increased vascular permeability. The rash is easily identifiable by raised, swollen, flesh-colored or red bumps or welts on the skin. This reaction often begins rapidly and may be accompanied by swelling of the face, lips, throat, or airways (**angioedema**). The wheals can take several weeks to resolve.

Acne Vulgaris

Acne is a common inflammatory skin reaction causing pimples, papules, pustules, blackheads, whiteheads, cysts, or abscesses on various areas of the skin. These skin abnormalities vary in size, severity, and deepness into the skin layers. Caused by bacteria, dead skin cells, or dried sebum that clogs hair follicles, **acne vulgaris** prevents sebum from passing up through the pores (Figure 24.9).

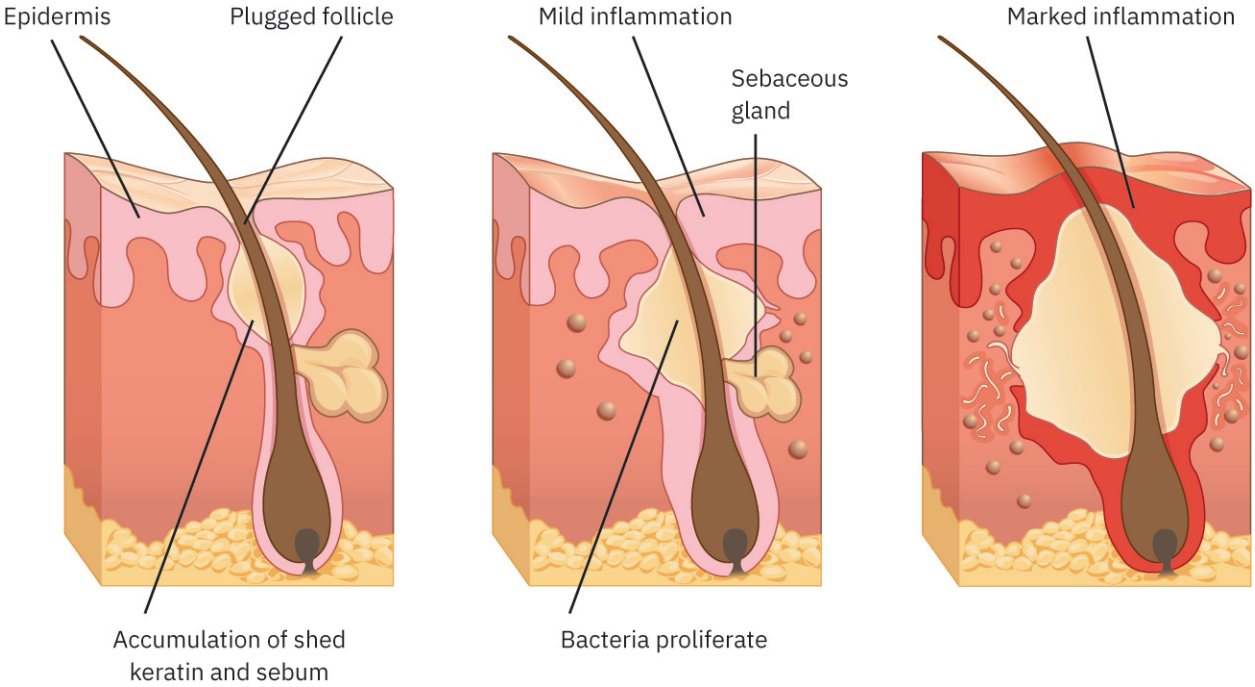


FIGURE 24.9 There are several types of acne. The most common types are whiteheads, blackheads, pustules, papules, cystic acne, and nodules. (credit: modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Mild acne includes blackheads, whiteheads, pimples, papules, and pustules and generally does not leave scars unless skin injury occurs when popping or squeezing the pimples:

- **blackhead**: flesh-colored, small bumps with a dark center
- **whitehead**: flesh-colored small bumps that do not have a dark center

- **pimple**: a small area of red skin that can be painful or cause discomfort
- **pustule**: similar to pimples but contain white or yellow pus

Severe acne is when patients have several blackheads, whiteheads, pimples, pustules, nodules, or deep acne (i.e., cystic acne). Lesions called **cystic acne** are usually larger, red, painful, and pus-filled nodules that merge under the skin and often leave scars.

Acne generally lessens in severity by the midtwenties but may appear to those in their forties. This type of skin reaction can cause emotional stress and may require counseling. General care for acne includes washing daily with a mild soap, using water-based cosmetics, and eating a balanced diet low in processed carbohydrates. Inflammatory foods like gluten or dairy may need to be limited because it can cause acne for some individuals. Blackheads and whiteheads can be removed by **comedone extraction**. This is the use of a comedone extractor by a healthcare professional to incise the pore and then use gentle pressure around the pore opening with a wire loop.

Psoriasis

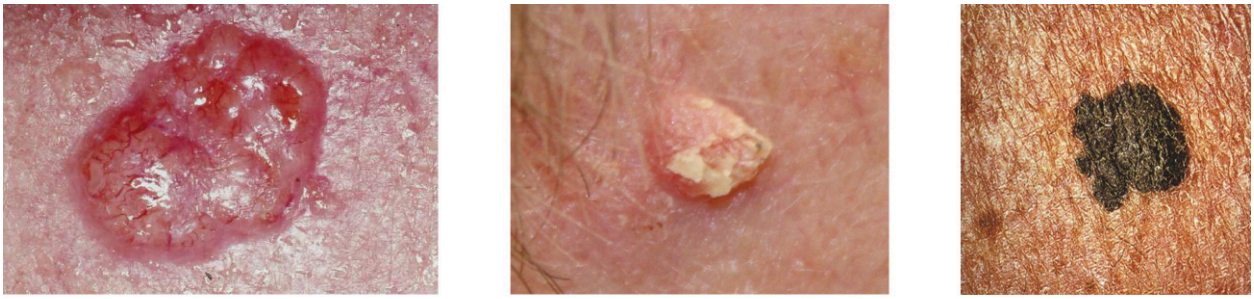
A recurring, chronic skin condition called **psoriasis** causes one or more raised areas of red skin patches with silvery scales and a distinct border. Psoriasis is caused by an abnormally high rate of skin cell growth. This skin condition is immune mediated and often occurs because of a genetic predisposition. It can occur anywhere on the body. Various triggers may exacerbate this skin condition, but it is controllable. Flare-ups of psoriasis may be triggered by burns, colds or infections, stress, certain medications, cold weather, obesity, HIV, smoking, and inflammatory foods like gluten. Therapeutic management includes coal tar topical (Balnetar) shampoos, ultraviolet light, topical steroids, mineral oil, topical anti-inflammatories, emollient creams, immunosuppressants (e.g., methotrexate [Trexall]), and other medications (e.g., acitretin [Soriatane], infliximab [Avsola]). Patients who have identifiable triggers may need to engage in lifestyle modifications, such as limiting cold exposure or eliminating inflammatory foods, such as sugar and high fructose syrups (Das, 2023).

Systemic Lupus Erythematosus

A chronic autoimmune inflammatory disorder called **systemic lupus erythematosus** (SLE) involves connective tissues of the joints, skin, kidneys, mucous membranes, and blood vessel walls. This skin disorder, also known as lupus, can be diagnosed with blood tests or other diagnostic testing. Sudden fever is often the first symptom of this condition. The rash is characterized by round, raised, and reddened areas that can lead to skin loss, scarring, and hair loss. This skin disorder may also include a butterfly-shaped reddened area across the nose and cheeks. Light-exposed areas (e.g., face, scalp) also have clusters of the rash. The rash may be flat or have psoriasis-like characteristics, and those affected may experience painful joints and fatigue. Migraines, mental disorders, epilepsy, and organ dysfunction may also occur. Patients with SLE may experience lung problems (e.g., pleural effusion), heart problems (e.g., pericarditis), enlarged lymph nodes or spleen, kidney failure, decreased blood cells or platelets, gastrointestinal problems (e.g., nausea, pancreatitis), or pregnancy complications (e.g., miscarriage, stillbirth) (Nevares, 2022). People with SLE often also experience **Raynaud syndrome**, a condition that causes pale or blue fingers with cold exposure. Flare-ups of lupus may be triggered by infection, pregnancy, surgery, or sun exposure. Early detection is optimal for a better prognosis and limiting the risks of kidney and other organ damage.

Skin Cancer

The most common type of cancer is skin cancer, which has three main types: basal cell carcinoma, squamous cell carcinoma, and malignant melanoma (Figure 24.10). Patients with fair skin and lower melanin production and patients who spend a significant time in the sun are at higher risk of all types of skin cancers. However, patients with darker skin and those who spend minimal time outdoors can still develop skin cancer.



(a) (b) (c)

FIGURE 24.10 The three main types of skin cancer include (a) basal cell carcinoma, (b) squamous cell carcinoma, and (c) melanoma. (credit a: "Basal cell carcinoma" by John Hendrix/Wikimedia Commons, Public Domain; credit b: "skin cancer, squamous cell carcinoma, face" by Kelly Nelson/National Cancer Institute, Public Domain; credit c: "Melanoma" by National Cancer Institute, Public Domain)

Basal Cell Carcinoma

The most common type of skin cancer, **basal cell carcinoma**, is generally found on the head or neck. This type of skin cancer rarely metastasizes to other parts of the body but does invade and gradually destroy surrounding tissues. Basal cell carcinomas grow slowly and can go unnoticed because of the gradual change. These tumors can grow near the eyes, mouth, nose, or ears. They can be serious but are not usually fatal. Most tumors generally grow into the skin. The lesions are small, shiny bumps that may break open, form a scab, and sometimes bleed or flatten and look like scarring. Although a healthcare provider can easily identify this type of lesion, a biopsy should be performed to confirm the type of cancer. Treatment options include removal of the tumor by curettage and electrodesiccation, cutting it out, or cryosurgery. Topical chemotherapy medications may be applied to the skin. Using lasers and chemicals on the skin, known as **photodynamic therapy**, and radiation therapy are also options. Larger areas of basal cell carcinoma may require the **Mohs procedure**, where layers of the skin are removed and examined for cancer cells until no signs of cancer remain. The healthcare provider (often a dermatologist) may use sutures, skin flaps, or skin grafts to replace the removed skin or refer the patient to a plastic surgeon for closure (Nambudiri, 2024).

Squamous Cell Carcinoma

The second most common type of skin cancer, **squamous cell carcinoma**, generally develops on sun-exposed areas but can grow where sun exposure is limited. Squamous cell carcinoma is the cancer of squamous cells, keratinocytes, the main epidermal structural cells. This type of skin cancer is more likely with patients who have precancerous growths like actinic keratoses, scarred skin, and chronic mucus membrane or skin sores. This skin cancer generally starts as a red area with a crusted, scaly surface that may turn into a raised, firm, wartlike surface. This lesion can become an open sore and grow into the underlying tissues. Biopsy is also best for diagnosing this type of cancer. The prognosis is generally excellent with early intervention. This type of cancer can metastasize and become fatal if not treated in time. Treatment options are similar to basal cell carcinoma but also include using an immune checkpoint inhibitor (e.g., PD-1 inhibitor [cemiplimab]). For patients who have large lesions that have metastasized or spread to the tissues underneath or cannot have surgery, PD-1 inhibitors help the body's immune system annihilate the cancer (Nambudiri, 2024).

Malignant Melanoma

The most dangerous of the skin cancers, **malignant melanoma**, originates in the melanocytes. As sunlight increases melanin production, the risk of skin cancer increases. Melanoma metastasizes to distant parts of the body and can often go undetected, making it fatal. Those with undetected melanoma may not be diagnosed until affected organs of the body start displaying symptoms.

Melanoma may begin as a small, pigmented growth in a sun-exposed area or develop in a preexisting mole but can also occur in the mouth, on the genitals or rectal areas, in the brain, in nail beds, or in or around the eyes. Risk factors for melanoma include those mentioned for other skin cancers but also include those with previous history of skin cancer, large number of moles, weakened immune system, fair skin, freckles, family history of melanoma, advanced age, and large congenital melanocytic nevus.

Melanomas usually are identifiable by an atypical mole with irregular borders and inconsistent colors. Some may be flat, irregular brown patches with small black spots or can be raised brown patches with blue, black, red, or white

spots. Melanoma can also be red, black, gray, and firm. A biopsy is needed for diagnosis. Nurses should understand the ABCDEs of melanoma and help educate patients on these warning signs (Table 24.6).

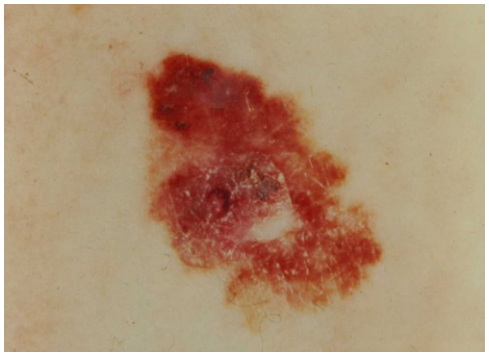
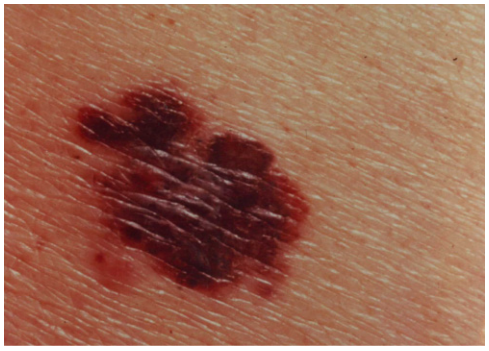
Letter	Meaning	Examples
A	Asymmetry = two halves of a mole are not equal	 (credit: "Skin Cancer, Melanoma, Red And Brown Lesion 2" by Laurence Meyer/National Cancer Institute, Public Domain)
B	Borders = borders are irregular and seem to blend in or are not oval or round	(credit: "Skin Cancer, Melanoma, Brown Lesion" by Laurence Meyer/National Cancer Institute, Public Domain)
C	Color = existing mole changes color or moles that have drastically different colors than other moles present on the body	 (credit: "Skin Cancer, Melanoma, Red And Brown Lesion 1" by Laurence Meyer/National Cancer Institute, Public Domain)

TABLE 24.6 The ABCDEs of Melanoma

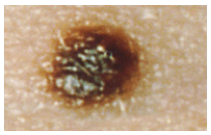
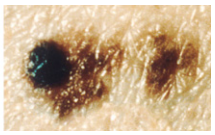
Letter	Meaning	Examples
D	Diameter = more than ¼ inch (0.6 cm) wide	(credit: "Skin Cancer, Melanoma, Foot" by Kelly Nelson/ National Cancer Institute, Public Domain)
E	Evolution = mole that changes (bleeds, enlarges, becomes tender, itches) or development of a new mole after the age of 30 years	  (credit a: "Common Mole" by National Cancer Institute, Public Domain; credit b: "Melanoma" by National Cancer Institute, Public Domain)

TABLE 24.6 The ABCDEs of Melanoma

Everyone should be screened regularly for skin cancer by a healthcare provider or dermatologist. Nurses should take any opportunity to educate people about sun exposure and ways to help prevent skin cancer. Key points to educate patients include how to observe changes or unusual skin markings that they should report to their healthcare provider. Additionally, nurses should educate patients about avoiding the sun or seeking shaded areas, especially when the sun's rays are the strongest (between 10 a.m. and 4 p.m.), wearing sunscreen with a sun protection factor (SPF) of at least thirty or greater, wearing protective clothing (e.g., hats, sunglasses, long sleeves), and avoiding the use of tanning beds (Nambudiri, 2024).

PATIENT CONVERSATIONS

Tanning Beds and Cancer Risks

Scenario: A nurse is performing an annual checkup on a patient who subsequently states they have been an avid tanning bed user for more than thirty years.

Nurse: Hi. My name is Susie, and I will be your nurse today. May I have your name and date of birth?

Patient: Yes. Hi, my name is Tiffany Ball, date of birth is May 12, 1975.

Nurse: What medications are you currently taking?

Patient: None.

Nurse: Any known medication allergies?

Patient: No.

Nurse: The last time we saw you, your surgical history included a cesarean section. Is that correct? Any other surgeries?

Patient: Nope. Just that one so far.

Nurse: Thank you. Have you noticed any new spots on your skin or anything that may concern you?

Patient: I have not noticed anything.

Nurse: Okay, well if you are ready, I will let the provider know you are ready for the skin check.

[The provider comes in and, while performing the annual examination, notices a suspicious mole on the patient's upper back. The provider removes it with the patient's permission and sends it off to pathology for a biopsy. The provider leaves the room.]

Patient: Wow. So, what causes skin cancer? I hardly go outside.

Nurse: Do you have a family history of skin cancer? Do you use tanning beds?

Patient: I think my dad had a spot removed a few years ago. I have been tanning in a tanning bed since high school, so maybe thirty years or so. I was told a tanning bed was safer.

Nurse: Tanning beds do increase your risk of developing skin cancer due to the ultraviolet (UV) rays (e.g., UV-A, UV-B) that may be used.

Patient: Oh, so since I already have a spot anyway, I can still tan, right?

Nurse: Your results will come back from the laboratory, and then we can confirm whether or not it is cancerous. It is best to minimize your risks for skin cancer. Just because you have one potential spot does not mean you could not have another. The risks for skin cancer include family history and sun exposure especially between 10 a.m. and 4 p.m. If you are going to be in the sun, use sunscreen with an SPF of at least thirty, find shade often, and wear protective clothing like long sleeves, pants, and wide-brimmed hats.

Patient: So, what are you saying about using tanning beds?

Nurse: Tanning beds do not offer a safe alternative to sunlight. Unfortunately, they also increase the risk for skin cancers, including melanoma, the deadliest form of skin cancer.

Health Promotion and Behavioral Considerations

Health promotion as it relates to skin integrity includes lifestyle choices and behaviors that promote healthy skin. Those with impaired skin integrity should be careful with their hygiene practices and behaviors to avoid further aggravating their skin conditions. Some behaviors that help protect the skin include the following:

- using pH-balanced or mild soaps when bathing
- patting dry versus rubbing, which makes skin more prone to friction tears or other skin damage
- using emollients that moisturize and soften the skin
- avoiding the use of detergents that contain fragrance
- avoiding the use of deodorant soaps
- eliminating triggers

Any possible infectious skin lesions should be observed for signs of improvement or worsening. Drainage is a possibility from skin lesions; therefore, nurses should follow standard and transmission-based precautions when assessing the skin or changing dressings. Standard precautions may include wearing gloves, gowns, masks, or face shields as needed and disposing of them properly after use. Any contaminated dressings should also be disposed of according to organizational policies. Patients who have lesions may need to be educated on proper at-home wound care.

Nurses should educate patients and families on adequate hygiene and proper skin care for prevention of impaired skin integrity. Other behaviors that promote adequate skin integrity should also include understanding the importance of routine skin checks, minimizing sun exposure during the time of day when the ultraviolet rays are the strongest, wearing protective clothing while in the sun, and using sunscreen. Age-related and cultural considerations should be taken into consideration when providing education on health promotion behaviors for impaired skin integrity.

Age-Related Considerations

Newborns have thinner skin that is more sensitive and susceptible to rashes (e.g., contact dermatitis), newborn acne, and seborrheic dermatitis. Newborns cannot care for themselves; therefore, caregivers should be educated on the need to keep the newborn and caregiver nails trimmed to avoid scratching the baby. They should also be educated on signs and symptoms of common skin irritations as well as prevention actions and treatment options.

Toddlers and preschoolers are more prone to accidents because of their high activity levels and difficulties with mobility. They may fall or run into inanimate objects that may lead to lacerations, burns, or other abrasions. Caregivers should be educated to implement safety precautions to prevent injuries. For example, padding sharp corners may prevent accidents.

Head lice, impetigo, scabies, and rashes are more common in school-age children and adolescents. Acne vulgaris generally starts during adolescence and can lead to an impaired body image, which may require counseling. This age group typically wants to be more independent, so education may be needed to ensure proper skin care.

Skin changes as people age (see 24.1 Structures and Function of the Skin). Older adults should focus on adequate nutrition and hydration, especially ensuring adequate protein intake to promote wound healing. Older adults may have impaired mobility, making adequate hygiene difficult or impossible for this age group to perform. Therefore, it is important that the nurse or caregiver promote appropriate skin care, prevention, and intervention with impaired skin integrity. Some skin changes are benign, such as cherry angiomas, seborrheic keratoses, spider angiomas, wrinkles, dryness (**xerosis**), neurodermatitis, liver spots, melasma, **telangiectasia** (red marks on the skin caused by widening of shallow blood vessels), and hair loss.

Culturally Related Considerations

Nurses should remember that cultural considerations regarding skin conditions are common but may be different among various cultures and ethnic groups (see 24.1 Structures and Function of the Skin). Patients with fair skin produce less melanin and are more at risk of skin cancers than darker skinned individuals. However, patients with darker skin are more susceptible to post-inflammatory hyperpigmentation, dermatosis papulose nigra, keloids, hair loss, pityriasis, vitiligo, and dry skin. Other considerations include cultures that may not believe in medical interventions. For example, people who follow the Amish religion may not believe in accepting outside medical care or interventions. The nurse should not make assumptions but should assess beliefs and preferences as well as provide education to the patient and their family members regarding the skin disorder, treatment options, and risks of not being treated. The patient should be allowed to decide what interventions they do or do not want to receive without bias from the nurse. The nurse should also analyze a patient's cultural preferences when developing a plan of care to promote healing and improve skin integrity.

24.3 Wound Classification

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the different classifications of wounds
- Recognize the risk factors for pressure injury development
- Describe the staging process for pressure injuries

A **wound** is defined as an injury that causes a disruption of normal skin or tissue integrity. Wounds can be typed as an **incision**, **contusion**, **abrasion**, **laceration**, **puncture**, **penetration**, **avulsion**, **burn**, and **ulcer** (Table 24.7). In order to effectively manage wounds, nurses must first recognize the various wound classifications. They must also identify individuals at risk of pressure injury development and describe the technique for staging pressure injuries.

Wound Type	Description
Incision	A surgical cut made in skin or flesh
Contusion	A region of injured tissue or skin in which blood capillaries have been ruptured (bruise)

TABLE 24.7 Types of Wounds

Wound Type	Description
Abrasion	An area of skin or tissue damaged by scraping
Laceration	A deep cut or tear in the skin or flesh or underlying tissue
Puncture	A wound made by a pointed object
Penetration	A wound caused by an object that pierces the skin and lacerates or damages adjacent tissue
Avulsion	A forcible tearing off of skin or another part of the body
Burn	An injury to the skin caused by thermal, electrical, chemical, or electromagnetic energy
Ulcer	An open sore caused by poor blood flow

TABLE 24.7 Types of Wounds

Different Types of Wound Classification

Wounds are classified in several ways and include intentional or unintentional wounds, open or closed wounds, acute or chronic wounds, pressure injuries, and friction and shear. Wounds also may be described according to how they were acquired, how long the wound has been present, or how deeply the wound affects the skin or tissues (Table 24.8).

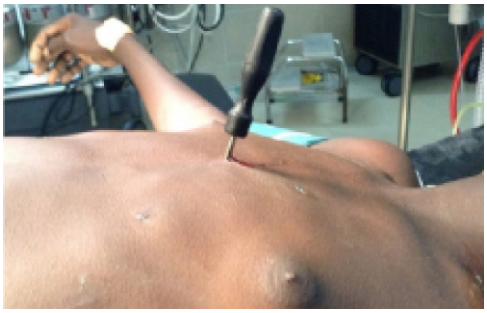
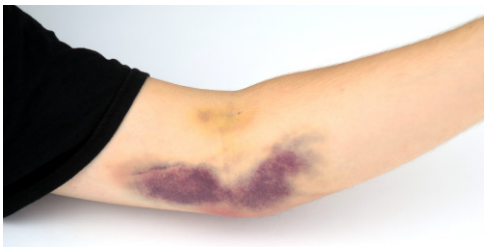
Classification	Description	Example
Intentional wound	• An example is a planned incision (wound) as the result of a treatment or therapy. • They serve a therapeutic purpose. • Wounds are clean with approximated edges and are performed under aseptic or sterile procedures. • Typically, the bleeding is well controlled, and surgical incisions are closed immediately after the procedure. • Examples include surgical incisions, venipunctures, and lumbar punctures.	 (credit: "Hip replacement, surgical staples", by Wikimedia Commons, CC BY 3.0)
Unintentional wound	• These wounds are from unexpected trauma and can result in multiple injuries. • The wounds are not acquired under sterile or aseptic conditions. • Wound edges are irregular and not clean like those of intentional wounds. • Bleeding is not controlled in this setting. • Examples include a broken bone or laceration from bicycle or automobile accidents, burns, work-related injuries, and penetrating wounds from a bullet or metal fragments.	 (credit: modification of "Injury showing open finger dislocation," by National Library of Medicine, CC BY 3.0)
Open wound	• This is a break in the skin or mucous membranes caused either intentionally or unintentionally. • It creates an entry for microorganisms, which combined with tissue damage and bleeding increases the risk of a prolonged healing time and infection. • Examples include incisions, abrasions, punctures, lacerations, penetrating wounds, and avulsions.	 (credit: "Screwdriver penetrating the chest" by P. A. Dieng et al, CC BY 3.0)
Closed wound	• This results from a force or blow, such as from a fall, being hit by an object, or in a collision with a person or inanimate object. • Examples include contusions and hematomas.	 (credit: "Plateletpheresis hematoma 2016" by Wikimedia Commons, CC0)

TABLE 24.8 Wound Classifications

Classification	Description	Example
Acute wound	• It will generally heal within days to weeks. • Progress through the normal stages of healing without disruption. • Examples include traumatic injuries, burns, and surgical incisions.	 (credit: "Longitudinal mini-incision" by National Library of Medicine, CC BY 2.0)
Chronic wound	• Typically, this type of wound has jagged edges, a higher risk of infection, and a delayed healing time of more than thirty days. • The patient does not progress through the normal stages of healing and usually experiences an interruption in the healing process. • Generally, the wound stays in the inflammatory stage of healing. • Examples include pressure injuries, diabetic ulcers, or ulcers from vascular insufficiency.	 (credit: "Bedsore ulcer" by Wikimedia Commons, CC BY 4.0)

TABLE 24.8 Wound Classifications

Classification	Description	Example
Pressure injury	• This is a localized ischemic lesion of the skin and underlying tissue caused by external pressure that impairs blood and lymph flow. • Lack of blood supply, oxygen, and nutrients to the tissues results in necrosis and eventual ulceration. This ischemia also leads to inflammation and edema. • Pressure injuries may also be called decubitus ulcers, bed sores, and pressure sores. • This type of wound can occur in as little as one hour and may be acute or chronic. • Pressure injuries often arise when the soft tissues are compressed between an external surface and a bony prominence or from friction or shearing forces that injure blood vessels and abrade the epidermis. • Examples include bony prominences, including the heels, sacrum, coccyx, and greater trochanter.	 (credit: modification of “Escarre Stade 4” by Wikimedia Commons, CC BY 4.0)

TABLE 24.8 Wound Classifications

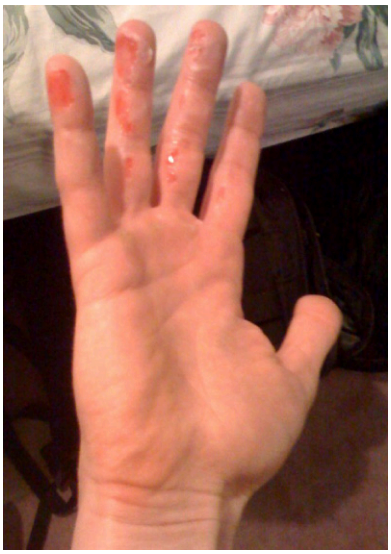
Classification	Description	Example
Friction injury	• Occurs when two surfaces rub together, which generates heat and can remove the top layer of the skin, damage superficial blood vessels, and may look like an abrasion. • Examples include when a patient attempts to push themselves up in bed using their heels, arms, or hands or when personnel pull patients up in bed by a draw sheet or when transferring patients to a stretcher using a transfer or draw sheet.	 (credit: "Self-captured photograph of a rope burn (friction burn)" by Jesusjonez, Public Domain)
Shear injury	• This occurs when one tissue layer slides over the other. • The shearing force separates the skin from its underlying tissues. Blood vessels stretch and bend or tear causing injury, thrombosis, and impaired circulation to the tissue cells. • Examples include when patients are pulled when being moved up in bed or transferred from bed to stretcher or chair, when a patient slides down when sitting in a chair, or their torso slides down when sitting in bed and the head of the bed is elevated.	 (credit: modification of "Blister on toe" by Wikipedia, CC BY 2.0)

TABLE 24.8 Wound Classifications

Intentional and Unintentional Wounds

Intentional and unintentional wounds are described according to their acquisition. A planned or **intentional wound** is the result of a treatment or therapy. Surgical incisions, venipunctures, and lumbar punctures are examples of intentional wounds that are necessary for a specific treatment. The wounds are made in sterile conditions, and any bleeding is controlled, which promotes adequate healing time and reduces the risk of infection. For example, surgical incisions are made deliberately with careful techniques and in aseptic conditions, then closed immediately after the procedure.

A wound from unexpected traumas (e.g., a broken bone or laceration from bicycle or automobile accidents, burns, work-related injuries, penetrating wounds from a bullet or metal fragments) is known as an **unintentional wound**. These types of injury can result in multiple areas of trauma and involve tissue loss. The wounds are not acquired under sterile or aseptic conditions. Wound edges are irregular and not clean like those of intentional wounds. Bleeding is not controlled in this setting. Individuals who require medical attention may experience a delay getting emergency help depending on location, availability to call for help or other resources, and if anyone nearby is able to help control blood loss. These conditions create the potential for a longer healing process and an increased risk of

infection.

Open and Closed Wounds

A break in the skin or mucous membranes is called an **open wound** and is caused either intentionally or unintentionally. Open wounds create an entry for microorganisms. This combined with tissue damage and bleeding increase the risk of a prolonged healing time and infection. Examples of open wounds include incisions, abrasions, punctures, lacerations, penetrating wounds, and avulsions. Furthermore, the term *open wound* is sometimes used to convey that the wound is not covered or dressed with bandages. It may even be left open to air as part of the treatment process.

A wound that does not have a break in the skin and occurs under the skin's surface is called a **closed wound**. Nevertheless, there may be bleeding, tissue damage, and internal injury under the skin's surface. Closed wounds may result from a force or blow like from a fall, being hit by an object, or a collision with a person or inanimate object. Examples of closed wounds include contusions and hematomas. Sometimes the term *closed wound* may relate to how wound edges are brought together. An example is when nurses say the wound is closed with sutures or staples.

Acute and Chronic Wounds

Another way to classify wounds is by acute versus chronic. A wound that occurs suddenly and progresses through expected stages of healing is called an **acute wound**. These wounds should be assessed based on the way they occurred and the anatomical damage (Nagle et al., 2023). Often the full extent of acute wounds is unknown until several days after an injury. Initial issues such as swelling may mask the true extent and even depth of the wound.

In contrast to acute wounds, a **chronic wound** is a wound in which little to no healing occurs for at least three months (Bowers & Franco, 2020). There are a variety of ways and reasons that wounds become chronic (Table 24.9). For caregivers, these are complex to manage and may never heal completely. The goals of care for chronic wounds are to determine why the wound is not healing and identify strategies to overcome those reasons and allow the wound to heal (Nagle et al., 2023).

Cause	Explanation
Arterial insufficiency (such as scleroderma or Raynaud disease)	Insufficient arterial blood flow to the extremities impacts the transportation of oxygen and even antibiotics to diseased tissues.
Venous insufficiency	Insufficient return of blood from the extremities causes increased pressure and fluid in intravascular spaces, decreasing the body's ability to heal effectively.
Infection	Infections in tissues and bones (cellulitis and osteomyelitis, respectively) prevent the healing process. Expect to culture for biological, viral, and fungal agents.
Pressure	Constant or frequent pressure against healing tissues impacts the ability to heal and/or tears healing tissues back open.
Radiation therapy	This may cause occlusion or damage to blood vessels, impacting the healing of localized tissues.
Systemic diseases	Diseases such as diabetes and immunodeficiencies may impact the body's ability to heal naturally.
Nutrition	Protein malnutrition and elevated glucose levels can impact healing. For example, protein requirements to heal a chronic wound could rise as high as 250 percent normal requirements.

TABLE 24.9 Causes of Chronic Wounds (Source: Nagle et al., 2023.)

Cause	Explanation
Age and hormones	While older age may lengthen the time it takes for an acute wound to heal, it does not cause chronic wounds. However, differences in androgens and estrogen may impact healing.
Medications	Several medications can slow down healing, including hydroxyurea, chemotherapeutic agents, and steroids.
Genetic issues	There is a genetic predisposition to issues such as keloid scarring and other skin conditions that may negatively impact wound healing.

TABLE 24.9 Causes of Chronic Wounds (Source: Nagle et al., 2023.)

Pressure Injury

A localized ischemic lesion of the skin and underlying tissue, known as a **pressure injury**, is caused by external pressure that impairs blood and lymph flow. The lack of blood supply, oxygen, and nutrients to the tissues results in necrosis and eventual ulceration. This ischemia also leads to inflammation and edema. Pressure injuries may also be called decubitus ulcers, bed sores, and pressure sores. This type of wound can occur in as little as one hour and may be acute or chronic. Healthy people who have full control of their limbs make changes in their position constantly. However, when someone remains in the same position for an extended period of time, an injury occurs. The portion of the skin where the patients' weight and force are applied is injured. Pressure injuries often arise when the soft tissues are compressed between an external surface, such as a bed or chair, and a bony prominence or from friction or shearing forces that injure blood vessels and abrade the epidermis. Examples of bony prominences include the heels, sacrum, coccyx, and greater trochanter. Pressure injuries may occur in home settings, hospitals, and long-term care facilities. Pressure injuries require aggressive intervention and treatment to decrease unwarranted pain or discomfort, inhibit further tissue damage, accelerate wound healing, decrease length of stays, and decrease healthcare costs.

Friction and Shear

Friction and shear are mechanical forces that tear and injure blood vessels and can contribute to the development of pressure injuries. When two surfaces rub together and generate heat, friction is produced and can remove the top layer of the skin, may damage superficial blood vessels, and may look like an abrasion. Friction injuries may occur when a patient attempts to push themselves up in bed using their heels, arms, or hands. This can also happen when patients are pulled up in bed by a draw sheet or transferred to a stretcher using a transfer or draw sheet.

When one tissue layer slides over the other, **shear** occurs. The shearing force separates the skin from its underlying tissues. Blood vessels stretch and bend or tear causing injury, thrombosis, and impaired circulation to the tissue cells. Shear injuries may occur when patients are pulled when being moved up in bed or transferred from bed to stretcher or chair. Shear injuries may also occur if a patient slides down when sitting in a chair or their torso slides down when sitting in bed and the head of the bed is elevated.

LIFE-STAGE CONTEXT

Life Span Considerations for Older Adults

Part of the aging process occurs when changes in skin collagen makes skin less elastic. The subcutaneous and dermal tissues are thinner, and the patient often has reduced sensations of pressure and pain. This makes older adults more susceptible to friction and shear injuries. Careful considerations for the older adult include checking skin frequently to monitor for breakdown or tears, ensuring bedding and linens are dry and wrinkle free, padding bony prominences, and ensuring proper lifting technique when moving patients in bed or transferring out of bed.

Risks for Pressure Injury Development

Pressure injuries may result from pressure and friction and shearing forces but may also be caused by other factors.

The risk factors for pressure injury development include moisture exposure, nutrition and hydration, mobility, and level of cognition. Other factors that may contribute to pressure injuries include the following:

- advanced age
- poor skin hygiene
- loss of sensation
- fractures
- immunosuppression
- diabetes
- history of corticosteroid use
- multiple organ dysfunction
- history of previous pressure injuries
- increased body temperature
- higher weight
- significantly lower weight
- terminal illnesses
- end-of-life processes
- microvascular dysfunction

Moisture Exposure

Exposure to excessive moisture can cause skin **maceration** where the tissues are softened by prolonged wetting or soaking. Macerated tissue makes the skin less resistant to trauma or pathogens and more susceptible to injury. Moisture from incontinence of feces or urine or gastric tube drainage promote **excoriation**, the loss of the superficial layers of the skin, and is also known as denuded area. The accumulation of excretions or secretions overhydrates the skin and makes it more alkaline. The moisture exposure irritates the skin, harbors microorganisms, and makes the skin more susceptible to breakdown and infection. In fact, any substance that is excessively applied might overmoisten the skin and can lead to skin damage. People who experience incontinence should be monitored for skin breakdown. Absorbent pads may be used to aid in protecting the linens from getting soiled. The patient should be cleansed as quickly as possible after each soiling; skin barriers may be used to protect intact skin (Shi et al., 2020).

Nutrition and Hydration

Nutrition and hydration play a major role in skin health. Cells that do not get adequate nutrition are more easily damaged. Malnutrition can lead to weight loss, muscle atrophy, and a decrease in adipose tissue resulting in the reduction of padding between the skin and bony prominences. Low protein in the blood, or **hypoproteinemia**, leads to a negative nitrogen balance, insufficient calorie intake, edema, and electrolyte imbalances, which predispose the skin to injury. Protein is vital for wound healing as it serves multiple critical functions in the reparative process. It acts as the primary building blocks for collagen synthesis, facilitating the formation of new connective tissue essential for wound closure and tissue regeneration. Additionally, protein supports the proliferation and migration of cells involved in wound repair, such as fibroblasts and keratinocytes, enabling the formation of new tissue and closure of the wound. Moreover, protein plays a crucial role in maintaining immune function, supporting the inflammatory response necessary for clearing debris and combating pathogens at the wound site. Protein is made up of nitrogen. Negative nitrogen balance means that the body is excreting more nitrogen than is being ingested. This will delay wound healing. Deficiencies in vitamin C may lead to frail capillaries and result in inadequate circulation contributing to the development of pressure injuries. Edema and dehydration can also interfere with perfusion.

Mobility Status

Impaired mobility is a significant factor in pressure injury formation. People who have problems with mobility or are bedridden are unable to adjust themselves and may remain in one position for a prolonged period of time. People who have adequate mobility are able to move independently when they experience discomfort on an area of the body caused by pressure and also move freely in bed. People who are unconscious, have extreme weakness or pain, or have any other cause of decreased activity are unable to change positions and relieve the pressure even if their bodies sense the need to change position. Patients who require assistance in moving in bed or transferring are at risk of friction and shear injuries that may lead to pressure injuries if they are not properly lifted in the process.

Cognition Status

Cognition consists of the mental processes that take place in the brain, such as thinking, language, learning, memory, perception, and attention. Patients who have an altered mental status or have decreased awareness (e.g., unconsciousness, sedation, dementia) are at risk because they are less likely to recognize and respond to the discomfort from pressure. This means that medication or therapy that decreases a patient's mental status can increase their risk for pressure injuries. People who are more alert are more likely to respond to increased pressure, protect their own skin integrity, and perform adequate hygiene to prevent the development of pressure injuries.

Braden Scale

A wound assessment risk can be used to evaluate a patient's risk for developing wounds or to monitor healing. Different strategies can be employed depending on the risks various patients experience. For wounds that are more difficult to heal, providers must have reliable assessment methods to ensure appropriate and accurate communication among team members and allow for accurate assessment of changes between visits (Bates-Jenson et al., 2019).

The **Braden scale** is the most used pressure injury risk assessment tool in the United States and is used across many healthcare settings, including critical and acute care, long-term care, rehabilitation, and even by home-based nurses (Kennerly et al., 2022). It evaluates the relative risk of a patient developing skin breakdown and pressure injuries. The scores can be used to tailor pressure injury prevention interventions to at-risk patients (Kennerly et al., 2022).

LINK TO LEARNING

The Braden scale (https://openstax.org/r/77brandenscl) is a helpful tool to establish the relative risk of a patient experiencing issues with skin breakdown.

The Braden scale uses six subscales: mobility, activity, sensory perception, nutrition, friction/shear, moisture (Kennerly et al., 2022). Each of these six factors is scored on a scale from one to four, depending on the factor. After each item is decided, the ratings are added together for a possible score between six and twenty-three. The lower the score, the greater is the risk for development of a pressure injury. All patients scoring eighteen and below should be reassessed regularly, on a schedule dictated by facility and healthcare setting. Patients scoring above eighteen should be reassessed when they experience condition-related changes. The Braden scale is a tool used by nurses to identify a patient's risk of developing pressure injuries and is typically completed on admission to a hospital or other healthcare facility as well as once per shift (Table 24.10).

Category	1 (most severe)	2	3	4
Sensory perception	Completely limited, unresponsive	Very limited, only responds to painful stimuli	Responds to verbal commands but limited communication	No impairment, responds and communicates
Moisture	Constant moisture	Frequent moisture/ linen changes	Occasional moisture/extra linen change	Usually dry/routine linen change
Activity	Bedbound	Chairbound, limited walking	Short distance walking	Frequent walking
Mobility	Immobile	Very limited	Slight limitations	No limitations

TABLE 24.10 The Braden Scale

Category	1 (most severe)	2	3	4
Nutrition	Very poor	Likely inadequate	Adequate	Excellent
Friction, shear	Constant friction, requires assistance	Movement with minimal assistance	Independent movement	N/A

TABLE 24.10 The Braden Scale

Staging Pressure Injuries

Depending on the extent of damage, pressure injuries are assessed and classified as stages one through four or as deep tissue or unstageable. Stage one is the least severe of the stages. It is essential for nurses to adequately stage pressure injuries to implement appropriate interventions and assess for improvement or worsening damage.

Blanching is a part of the assessment process and can aid in identifying those at risk of pressure injury development. Normal **blanching** is temporary whitening or lightening of the skin around the wound site upon applying pressure. When the pressure is relieved, normal blood flow should return promptly to the area, and the skin should return to its normal color.

Prolonged pressure to an area makes it more difficult for adequate blood flow to return, thus resulting in pressure injuries. Patients who have been sitting or lying in a prolonged (e.g., two hours or more) position who are then repositioned may take sixty to ninety minutes for hyperemia (reddening of the skin) and warmth of the skin to resolve.

Stage I

A stage I pressure injury is characterized by localized nonblanchable erythema of intact skin (Figure 24.11). Darker pigmented skin may not have apparent blanching, but the color of the skin may differ from the adjacent skin. Purple or maroon skin discoloration may be indicative of deep-tissue pressure injuries and not a stage I pressure injury. The area may also be painful, soft or firm, or warmer or cooler than its neighboring tissues.

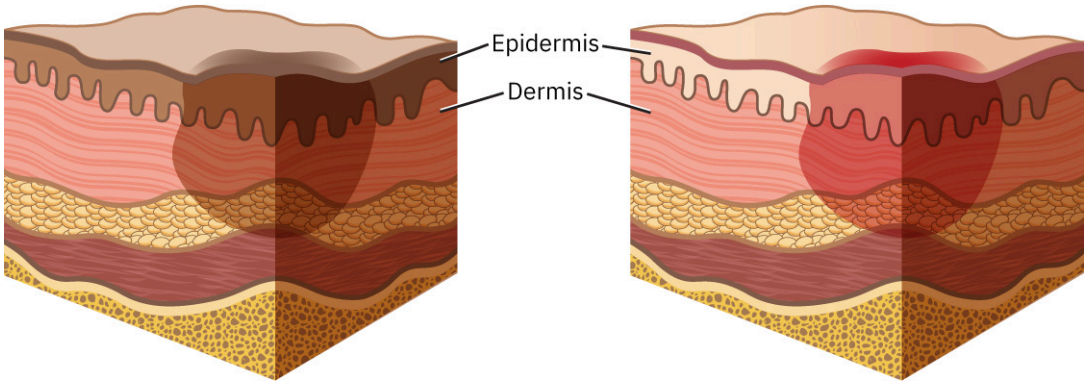


FIGURE 24.11 (a) In darkly pigmented skin, the area of concern is a different shade than the surrounding tissue. (b) In a light-skinned individual, an area of pink and red erythema may be seen. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Stage II

Stage II pressure injuries are characterized by partial-thickness skin loss involving the epidermis or dermis. The wound bed is viable, moist, red or pink, and may appear as an abrasion, shallow crater, or blister (Figure 24.12). The adipose and deeper tissues are not visible at this stage, nor is **slough** (yellow, gray, green, tan, or brown dead tissue), **eschar** (hardened, black, tan, or brown necrotic tissue), or **granulation tissue** (delicate new reddish connective tissue) or tiny blood vessels that bleed easily but provide the framework for scar tissue development.

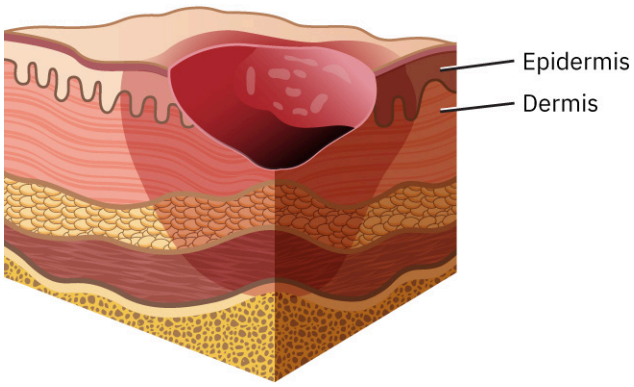


FIGURE 24.12 A stage II pressure injury is a partial-thickness loss of skin with exposed dermis. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Stage III

Stage III pressure injuries are characterized by full-thickness skin loss where the adipose, granulation, and deeper tissues are visible and may have a presence of slough or eschar (Figure 24.13). The depth of this tissue damage will vary depending on its location on the body and amount of adipose tissue present. The ulcer presents as a deep crater with or without tunneling and undermining; however, fascia, tendon, ligament, muscle, cartilage, and bone are not exposed at this stage. Rolled or curled-under wound edges called **epibole** slow or stop the wound healing process and may occur at this stage.

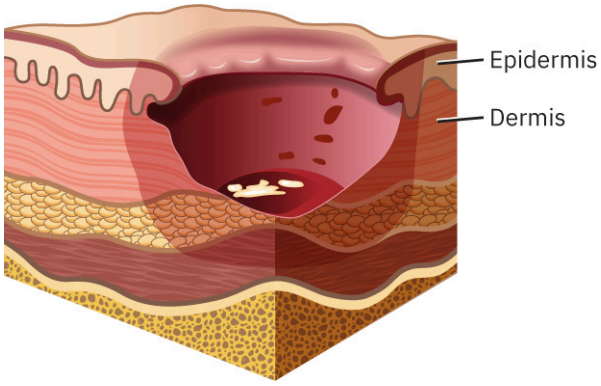


FIGURE 24.13 A stage III pressure injury has necrotic tissue and epibole. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Stage IV

Stage IV pressure injuries show full-thickness skin loss with extensive destruction; necrosis; and exposed or palpable fascia, tendon, ligament, muscle, cartilage, and bone (Figure 24.14). Slough and eschar are often visible along with epibole, undermining, and/or tunneling. The depth of this tissue damage will vary depending on its location on the body and the amount of adipose tissue.

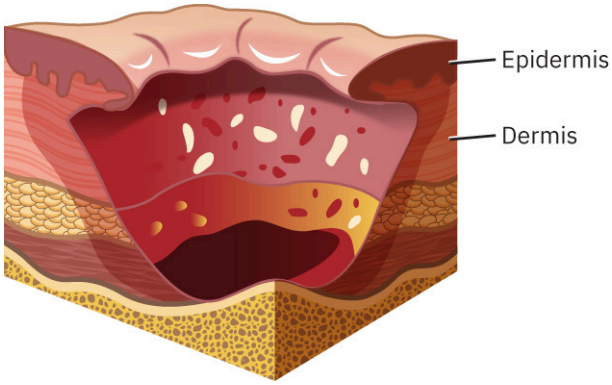


FIGURE 24.14 A stage IV pressure injury extends to the bone, with necrotic tissue and epibole. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Deep Tissue or Unstageable

Deep-tissue pressure injuries are classified as persistent, nonblanchable areas of the skin that have maroon, deep red, or purple discoloration (Figure 24.15). The affected areas of the skin may be intact or nonintact. There is a break in the epidermis that reveals a dark wound bed or blood-filled blister. With this type of injury, changes in the color of the skin are preceded by pain and temperature changes. Skin discoloration may appear differently in individuals with darker skin. For example, a bruise that may appear bluish in a lighter-skin-toned patient, may appear black in a patient with darker skin. Deep-tissue injuries are often the result of prolonged or intense pressure and shear forces at the bone-muscle interface. This wound may resolve without tissue loss or progress rapidly to expose the magnitude of tissue injury. Deep-tissue pressure injuries should not be used to describe traumatic, neuropathic, dermatologic, or vascular skin conditions.

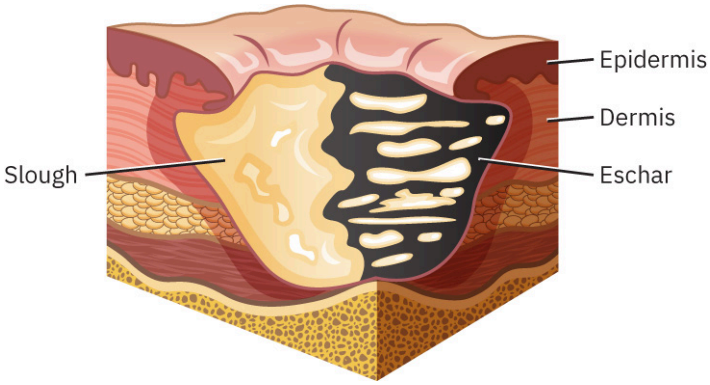


FIGURE 24.15 The presence of both eschar and slough occludes the true depth of the injury and causes it to be unstageable. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Pressure injuries are classified as unstageable if they have full-thickness skin or tissue loss and have excessive slough or eschar that obscures the extent of the damage. If slough or eschar is removed, a stage III or IV ulcer may be revealed. Stable eschar on the ischemic limb or heels should not be removed or softened. Eschar that is adherent, dry, and intact without **fluctuance** (tense area of skin with a wavelike or boggy feeling on palpation) and erythema is called **stable eschar**.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 5

Refer to Chapter 19 Oxygenation and Perfusion and Chapter 22 Activity for Unfolding Case Study Parts 1–4 to review the patient data. Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living due to weakness and increased dyspnea. She has been admitted to the telemetry unit.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history**: Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Nursing Notes	**1500:** Patient reports experiencing persistent joint pain, particularly in the shoulders and wrists, rated at 6/10 on the numerical pain scale. Patient states that pain interferes with daily activities, such as getting dressed and cooking. Patient also reports stiffness in affected joints, especially in the morning or after prolonged periods of rest, which improves with movement throughout the day. Occupational therapy referral sent per provider's orders. Acetaminophen administered at 1415. Patient reports improvement in pain level, which she now rates as a 2/10 on the numerical scale.
Nursing Notes	**1530:** During shift assessment, nonblanchable redness was noted on the patient's sacrum. When asked about it, patient reports tenderness in the area that gets worse with prolonged sitting. Patient describes the sensation as a mild "stinging" feeling.

1. Recognize cues: What cues are most important for the nurse to recognize?
2. Analyze cues: What other information would the nurse want to obtain from the patient at this time related to the recognized cues in the previous question?
3. Prioritize hypotheses: What factors does the nurse hypothesize are contributing to the development of the patient's pressure injury?

24.4 Wound Healing

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine the phases involved in wound healing
- Identify complications to wound healing
- Educate patients and caregivers on self-care of wounds at home

Wound management encompasses many nursing interventions that are essential for promoting healing and regeneration of tissues. Different techniques are used to treat wounds, such as applying dressings or leaving the wound open to air. The technique or intervention used is dependent on the type of wound present. To effectively manage wounds, nurses must understand the phases of wound healing, factors affecting wound healing, psychological effects of wounds, complications affecting wound healing, and the nurse's role in wound care management.

There are three types of wound healing: primary, secondary, and tertiary intention healing. When wound edges have been approximated with little to no tissue loss and show formation of nominal granulation tissue and scarring, this is known as **primary intention healing**. For example, a surgical incision closed after surgery using sutures or a liquid adhesive is primary intention healing. These wounds are easily closed in a line formation. The healing process of extensive wounds that have significant tissue loss making approximating edges difficult or not a good option is

called **secondary intention healing**. Pressure injuries are examples of secondary intention healing. Secondary intention healing takes longer, has more scarring, and is more susceptible to infection. Delayed primary intention, or **tertiary intention healing**, occurs in wounds that are intentionally left open for three to five days to allow edema or infection to resolve or to let any exudate to drain. After that period of time, the wounds are closed with sutures, adhesive closures, or staples.

Phases of Wound Healing

Wound healing can be broken down into the following phases: hemostasis, inflammatory phase, proliferation phase, and maturation phase (Figure 24.16). There are three phases of wound healing: inflammatory, proliferation, and maturation; in this case, hemostasis is included as part of the inflammatory phase. After an injury, the body automatically undergoes these phases, which methodically lead to tissue repair.

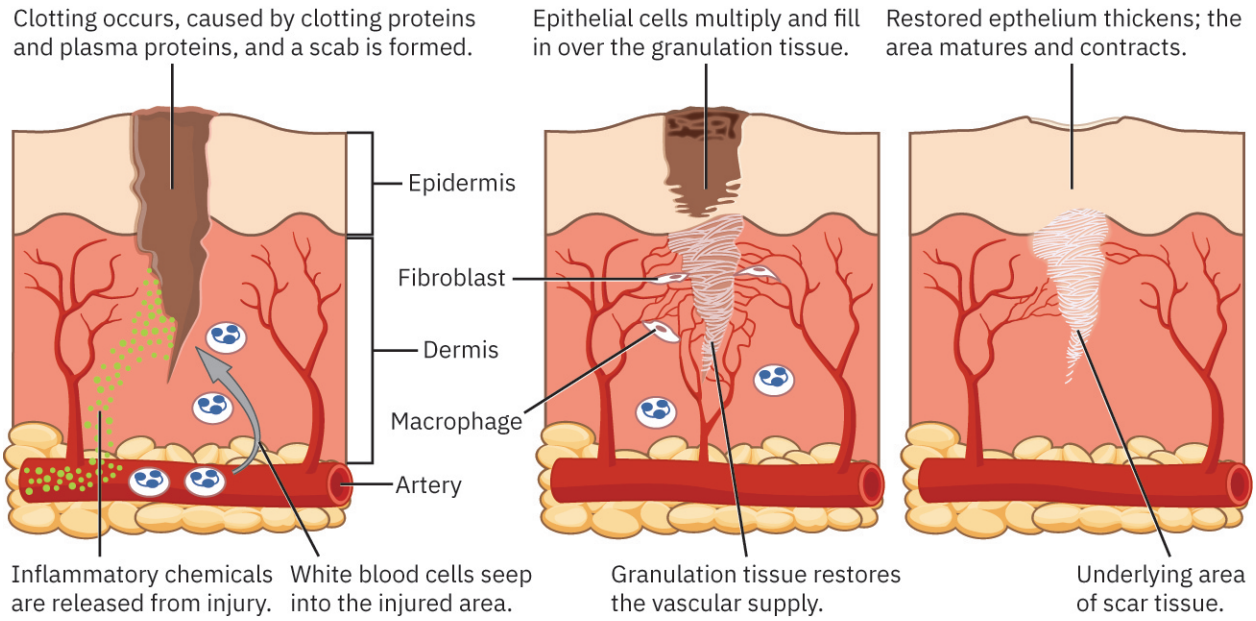


FIGURE 24.16 The phases of wound healing are inflammation, proliferation, and maturation. This process begins immediately after an injury and varies in length. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Hemostasis

Immediately after an injury, hemostasis (cessation of bleeding) occurs through vasoconstriction of blood vessels in the area, deposition of fibrin, and formation of blood clots through blood platelets. The blood clots provide a matrix of fibrin that becomes the framework for cell repair. After vasoconstriction, exudate is formed when the blood vessels expand, increasing capillary permeability, which allows plasma and blood components to leak out into the injured area. Pain and swelling may occur as a result of the buildup of exudate. Heat and erythema are the outcome of increased perfusion. Scabs form on the wound surface to protect the injury when blood clots lose their fluid. Epithelial cells migrate under the scab to provide a barrier between the body and the environment and to prevent the entrance of microorganisms.

Inflammatory Phase

Following hemostasis, the inflammatory phase begins and lasts about two to three days. During this phase, when leukocytes and macrophages move into the interstitial space to ingest bacteria and cellular debris, **phagocytosis** occurs. The macrophages also release angiogenesis factor that stimulates the formation of epithelial buds at the ends of injured blood vessels. The growth factor attracts fibroblasts that help fill in the wound. This phase may be depicted by pain, redness, heat, and swelling at the injury site. The patient may have a general body response like a slightly elevated temperature, elevated number of white blood cells, and general discomfort.

Proliferation Phase

The proliferation phase is also known as the reconstructive, fibroblastic, regenerative, or connective tissue phase. This phase begins around day three or four and may last up to several weeks. Fibroblasts that migrated to the wound begin to synthesize **collagen**, a whitish protein substance that adds flexible strength to the wound. Collagen

synthesis peaks in five to seven days, although the collagen deposits may persist for several weeks or years depending on the size of the wound. The fibroblasts also produce specialized growth factors that prompt blood vessel formation and proliferate the amount and migration of endothelial cells. Capillaries grow across the wound increasing the blood supply and oxygen needed through a process called **angiogenesis**.

Fibroblasts move from the bloodstream into the wound to deposit fibrin. As the capillary network develops, the tissue becomes a translucent red, granulation tissue that is delicate and bleeds easily. This granulation tissue provides the framework for scar tissue development. Wounds that heal by first intention have epidermal cells that seal the wound within twenty-four to forty-eight hours making granulation tissue not evident. Wounds that were not sutured need the injury site to be filled in with granulation tissue. After maturation of the granulation tissue, marginal epithelial cells migrate to the site, proliferating over this connective tissue base to fill in the wound.

The majority of white blood cells have left the wound area making the wound lighter in appearance by the end of the second week after the injury. The generalized symptoms the patient had generally disappear by this point. Adequate nutrition and oxygenation are essential patient care considerations for this phase. Any wound closed with sutures or other types of closures should be prevented from experiencing any type of strain, for example, picking up something heavy or pulling the patient in a way that adversely affects the injury site.

Maturation Phase

The maturation phase is the final phase of wound healing and begins around day twenty-one and can last up to months or years. Fibroblasts continue to synthesize collagen during this phase. The collagen fibers are reorganized into an orderly structure in this phase and promote a stronger wound. The collagen also aids in making the wound more like its neighboring tissues. When new collagen continues to synthesize, the blood vessels in the healing wound compress so that the scar does not sweat, tan in sunlight, or grow hair. The scar becomes a flat, narrow line and is not as elastic as uninjured tissue. The scar becomes stronger, but the tissue in the repaired area is never as strong as normal tissue. Wounds healed by secondary intention may take longer to remodel and form a scar. When scars form over a joint or adhere to body structures, **arthrofibrosis** occurs, which may limit mobility or cause a disability. For example, arthrofibrosis occurs when scar tissue forms around the knee joint after knee surgery, which limits the range of motion.

Circumstances Affecting Wound Healing

There are several factors that influence the speed of wound healing. Localized factors are those factors that occur directly in the wound or directly influence the wound's characteristics. On the other hand, systemic factors occur throughout the body due to a disease state or overall health of the individual and their body's ability to promote healing. Some factors may be related, and systemic factors act through the local effects that can impact wound healing (Monika et al., 2022).

Localized Factors

Desiccation, maceration, trauma, pressure, excessive bleeding and edema, or infection are all **localized wound healing factors** that directly affect the wound and may delay the process of healing. Meticulous care is necessary with wound management to prevent or limit these factors that can impede wound healing. It is important for nurses to understand these factors to promote optimal outcomes, improve wound care, improve the patient's quality of life, and prevent significant healthcare costs.

Desiccation

Unintentional wound or tissue dehydration, known as **desiccation**, occurs when cells do not get adequate moisture, so they dry up and die. This cell death leads to a crust that forms over the wound site, which impedes healing. This can occur naturally as part of the wound healing process or as a result of external factors such as exposure to air, inadequate wound dressing, or excessive use of wound irrigation solutions. While a certain level of desiccation is normal and may promote wound healing by facilitating the formation of a protective scab, excessive desiccation can impede the healing process. Prolonged drying of the wound bed can lead to tissue dehydration, delayed epithelialization, and increased risk of infection. Additionally, desiccation can cause discomfort and pain for the patient as well as impair the migration of cells involved in wound repair.

Maceration

Just like a wound can get too little moisture, there can also be an excess of moisture. Maceration is softening and

breakdown of the skin due to overhydration. A common cause of maceration is urinary and fecal incontinence. This type of moisture also causes changes in the pH level of the skin, destroys skin from friction on moist skin, and causes overgrowth of bacteria or infection of the skin that in combination leads to maceration and impaired skin integrity.

Infection

Infection is often caused by bacteria or other microorganisms in the wound. Infection puts a strain on the affected person's body because of the increase in demand for energy by the immune system to combat microorganisms. This strain leaves little or no energy for the body to promote the process of repair and healing. Bacteria also produces toxins and releases them when they die, which further affects wound healing and leads to cell death.

Systemic Factors

Healing factors that are not related to the wound itself, called **systemic wound healing factors**, take place throughout the body and include age, venous insufficiency, poor oxygenation, obesity, diabetes, medications, and smoking or alcohol use. In addition, wound etiology directly affects the process of wound healing. Wounds that are the result of a systemic issue may recur like a venous ulcer. Nutritional status plays a significant role in wound healing as adequate carbohydrates, proteins, fats, minerals, fluids, and vitamins are needed to rebuild cells and tissues, promote epithelization and collagen synthesis, and support optimal cell function. Patient adherence to the treatment plan is also a crucial element of wound healing. Patients who are noncompliant can experience negative effects on wound healing. Protein supplements may be necessary to meet wound healing needs in patients who are unable to adequately intake the proper nutrition needed.

Age

Skin changes are a normal part of aging. However, these changes can adversely affect an older adult's wound healing. Vascular changes (e.g., atherosclerosis, capillary atrophy) can impede blood flow. Collagen is less elastic, which increases the risk of injury or damage by pressure, friction, and shearing. Immune system changes can decrease antibody and monocyte formation, which is needed for wound healing processes to occur. Older adults may also be deficient in nutrients and fluids needed or have chronic conditions that impair oxygen delivery to wounds (e.g., chronic lung disease). Cell renewal is slower in older adults and results in prolonged healing.

Venous Insufficiency

Venous ulcers caused by **venous insufficiency** can lead to an increase in pressure and buildup of fluid in the lower legs. This generally is the result of high blood pressure, long periods of sitting or standing, lack of exercise, smoking, deep vein thrombosis, obesity, tissue trauma, and phlebitis. This combination leads to cell death, tissue damage, or wounds because of a lack of nutrients and oxygen. Blood flow is needed to not only deliver nutrients and oxygen but also to remove bacteria, toxins, and other debris. Therefore, wounds caused by venous insufficiency or another source are at risk of delayed wound healing.

Poor Oxygenation

Oxygen is essential for the biological processes that take place within the phases of wound healing like angiogenesis and collagen synthesis. Poor oxygenation may be due to systemic factors like diabetes or advanced age. It may also result from any factors that impair vascular flow to the tissues. A lack of oxygen prolongs healing and can lead to cell death. Oxygen also has antimicrobial effects and plays a vital role in the inflammatory response. People with poor oxygenation are more susceptible to infection, which further complicates wound healing.

Diabetes

Diabetes negatively affects wounds. Diabetes impairs circulation needed to deliver oxygen and nutrients. Uncontrolled blood sugar can damage the nerves and cause numbing sensations known as **diabetic neuropathy**. This reduced sensation means that the affected person may not be aware of the wound resulting in the lack of or delayed intervention. Uncontrolled blood sugar levels also impair white blood cell function needed to fight bacteria and close wounds in the inflammatory response.

Medication

Some medications may have an adverse effect on wound healing. Steroids affect the inflammatory phase and decrease its response. Radiation results in decreased leukocytes and increases the chance of infection because of depressed bone marrow function. Chemotherapeutic agents may impair or stop the growth of new cells needed for

wound healing. Patients who have prolonged antibiotic use are at risk of secondary infection or **superinfection** (e.g., *Clostridioides difficile*). This means that the infection is unrelated to the original infection and results from opportunistic colonization following immunosuppression. Medications used to treat skin disorders inadvertently cause thinning of the outermost layer of the skin, increasing susceptibility to breaks in the surface.

Wound Complications

There are several events that can interfere with wound healing and may cause complications. Infection, hemorrhage, dehiscence and evisceration, and fistulas can increase the risk of death or generalized illness, increase healthcare costs, and prolong the need for healthcare interventions. These complications can also exacerbate the emotional stressors associated with wounds.

Infection

Wound infections are common. Wounds are by their nature "dirty" and contain bacteria. However, not all wounds are infected. When the immune system fails to limit microbial growth, wound infection occurs (Figure 24.17). The invasion of microorganisms can occur at the time of the injury, during surgery or postoperatively, or any time after the injury. People with suppressed immune systems or who are undergoing myelosuppressive cancer treatment are more susceptible to infection. Table 24.11 provides signs and symptoms of wound infections that should be routinely monitored (Bishop, 2021).

FIGURE 24.17 To be considered infected, a wound must include pain, redness, swelling, and purulence (Nagle et al., 2023). (credit: "MRSA Staph Infection" by Cayobo/Flickr, CC BY 2.0)

Sign/Symptom	Examples
Wound bed	Bright red, fragile granulation tissue with pockets
Exudate	Increased exudate, cloudy, yellow, green, pus, smelly, leaking around wound closures
Periwound area	Redness, inflammation, streaks leading out from wound
Swelling	Unusual swelling near the wound and nearby swollen lymph nodes

TABLE 24.11 Signs and Symptoms of Infections in Wounds (Source: Bishop, 2021.)

Sign/Symptom	Examples
Fever	Typically seen in combination with other symptoms
Pain	Increasing in intensity, new, or changed from previous pain

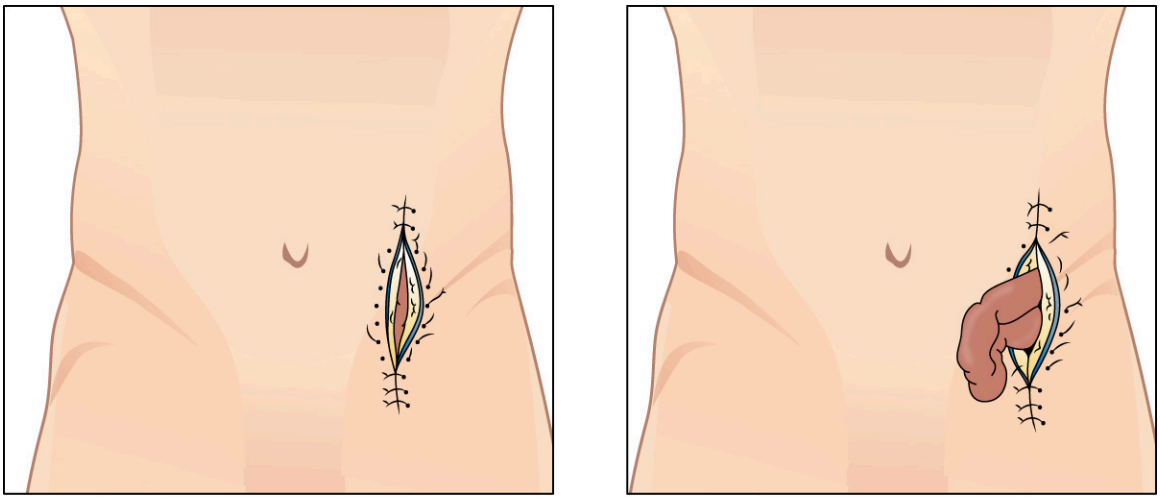
TABLE 24.11 Signs and Symptoms of Infections in Wounds (Source: Bishop, 2021.)

Hemorrhage

Some wound bleeding is normal. Massive bleeding (or hemorrhaging) is abnormal and may be caused by a dislodged clot, slipped stitch, or erosion of a blood vessel by a foreign body. If possible, any dressings should be checked frequently during the first forty-eight hours after the injury and at least every eight hours thereafter. In the event of excessive bleeding, interventions may include packing or applying a pressure dressing, surgical intervention, fluid replacement, and monitoring vital signs. Internal bleeding may result in a **hematoma**, a localized collection of blood under the skin that may appear reddish blue and swollen. A large hematoma can be hazardous because it places pressure on blood vessels and causes tissue ischemia.

Dehiscence and Evisceration

The most serious wound complications include dehiscence and evisceration (Figure 24.18). Smoking, obesity, malnourishment, anticoagulant therapy, excessive coughing, vomiting, infected wounds, or straining increases the risk of dehiscence and evisceration. The partial or total rupturing of a sutured wound is called dehiscence and is caused by excessive stress on unhealed wounds. Dehiscence may be preceded by the presence of serosanguineous fluid from the wound days postoperatively. It is common for the patient to say, "it feels like something has given way." The dehisced wound is managed like an open wound. The protrusion of the viscera through the incision when the wound completely separates is called evisceration and most commonly occurs with abdominal incisions.



(a) Dehiscence **(b) Evisceration**

FIGURE 24.18 Dehiscence and evisceration are serious complications. Dehiscence may occur from strenuous activity like coughing or vomiting and can lead to evisceration. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

These complications should be treated like a medical emergency. The patient should be placed in the low Fowler position, and the area should be covered with a sterile towel soaked with sterile 0.9 percent sodium chloride. Placing the patient in the low Fowler position and slightly bending their knees will lower intra-abdominal pressure on the wound. This will prevent more wound damage until the physician arrives. The provider should be notified immediately because surgical intervention is required. Other nursing interventions include remaining with the patient, providing reassurance, administering intravenous pain medications as needed, and ensuring that the patient remains **NPO** (nothing by mouth).

Fistula

A **fistula** is an abnormal passage from one internal organ or vessel to another or an internal organ or vessel to the outside of the body. Fistulas may be created on purpose, such as an arteriovenous fistula to provide access for

kidney dialysis. However, with wound complications, infection can lead to the development of a fistula from an abscess. The collection of undrained infected fluid applies pressure on the surrounding tissue creating the abnormal passage. Fistulas increase the risk of prolonged healing, skin breakdown, additional infection, and fluid and electrolyte imbalances.

Psychological Effects on Wound Healing

Wounds can be debilitating and have a significant effect on a person's self-identity and emotional well-being. The skin plays a role in communicating with other organs in the body through its sensory functions and affects a person's self-image. Patients can experience anxiety, post-traumatic stress disorder, and depression from how the wound is created based on it being a traumatic injury, either intentional or nonintentional, and emotions contribute to the patient's overall well-being in the outcome. Wounds and pressure injuries cause stress and emotional factors related to pain, fear, disruption to activities of daily living, and an altered body image. These stressors are interconnected and can impact not only the patient but also their caregiver or loved ones.

Pain

Any type of trauma can cause pain no matter the size of the injury. Pain is a physical complication but has a substantial psychological element. Wound pain may be caused by coughing, moving in bed, dressing changes, ambulating, or other activities that require movement. Pain attributed to these activities may result in the patient hesitating or avoiding them altogether. It can be debilitating to the affected persons. Pain can often lead to depression, further contribute to stress, cause fear and anxiety, and disrupt overall activities of daily living. Pain can also cause altered vital signs like tachycardia, tachypnea, and elevated blood pressure. Nursing interventions to reduce pain can reduce discomfort and emotional stress. For example, administering pain medication before performing wound care may reduce the amount of pain during the process.

Fear

Fear is a common response to wounds. The pain and disruption to activities of daily living can contribute to anxiety and fear. Patients are often concerned about the wound healing process and complications that may arise such as wound dehiscence (partial or complete opening of a wound) and infection. They may also be worried about other people's response to the wound appearance or smell as well as how much their privacy will be invaded when undergoing wound care. The fear of rejection may lead to social isolation. Nursing interventions should include therapeutic conversation encouraging expression of feelings, answering questions honestly and accurately, exhibiting empathy and acceptance, and preventing excessive exposure of body parts during care.

Altered Body Image

A negative body image can damage a person's self-esteem. The skin is part of what gives someone their identity; therefore, any wound or trauma requires adaptation of the concept of self. This may make a person self-conscious when scars or wounds are visible to others. Scars on the face or ones that take up a large margin of skin may result in diminished self-worth or feelings of unattractiveness. This type of negative self-image can lead to social isolation, further exacerbating the other stressors associated with wound management. Nursing interventions are similar to that of fear and include therapeutic conversations encouraging expression of feelings, answering questions honestly and accurately, exhibiting empathy and acceptance, and referring patients and their caregivers to support groups or counselors who can aid in coping skills and acceptance.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize and Analyze Cues

Before recognizing cues, nurses must make sure they have enough information about a patient's situation before interpreting the information and developing a plan of care. For example, patients experiencing fear related to their wound may have anxious feelings about wound care, pain, rejection from others, or how this wound will affect their life. The nurse should assess the patient's feelings and gather information about activities of daily living, how much support or help the patient has at home, and any other aspects affecting the patient's self-identity and mental well-being. The nurse should also be aware of nonverbal cues during care (e.g., looking away, grimacing) to assess discomfort or unease.

Nursing Interventions Used in Wound Management

Wound care requires an interdisciplinary approach and may require a number of nurses and other healthcare providers to work together. It is essential that nurses understand their role in wound care management to effectively implement interventions within their scope of practice. The nursing role includes assessment and documentation, positioning, dressing care, drain care, suture and staple care, cleaning, debridement, administering growth factors, heat and cold therapy, wound care education and health promotion, and teaching the patient to perform self-care at home. Other therapies that the nurse may be required to assist with include hyperbaric oxygen therapy and surgery. It is important to note that wound care is not 100 percent dictated on the bedside nurse, it can vary based on specialty background and acute care area. If nurses truly desire to become experts in wound care, they can achieve additional certification and become a certified wound care nurse (CWCN) and ostomy care nurse (CWCON), and they would be a bigger member of the interdisciplinary team.

Assessment and Documentation

Wound assessment is an ongoing process that requires thorough evaluation and clear, concise documentation for adequate tracking of the healing progression. This allows for continuity of care, adequate care evaluation, and proper interventions or changes in wound care. All photos should be taken with a measuring device (e.g., ruler) placed by the wound to indicate proportions and should be documented and dated for an accurate timeline. In addition to the assessment findings, documentation should include wound care or therapies provided during the encounter, how well the patient tolerated it, any medications administered and the patient response, any communication to the provider of abnormal findings and whether new orders were received, and any education or supplies given to the patient or family members as well as their understanding of the teaching.

Positioning Devices

Patients who have pressure injuries or have been identified as at risk may benefit from positioning devices to aid in preventing pressure injuries or promote healing. Examples of positioning devices include gel interfaces, foam wedges, or pressure-reducing boots that can be positioned to keep pressure and body weight off bony prominences. If possible, avoid using pillows or other surfaces that collapse under the patient's body weight. These do not cause adequate support. Ring cushions (i.e., donuts) should not be used because they can cause increased venous pressure in the surrounding areas.

Dressings

Wounds may be left open to air or covered with a protective dressing. Wounds may be left open to air per provider order if closing the wound makes infection more likely. Wounds left open to air develop dried eschar or a scab leading to slower healing. The scab may be inadvertently removed if the area rubs or hits the wound, causing reinjury. Dressings used to cover wounds provide a moist environment that promotes healing. This moist environment aids in rapid epithelial cell migration, maximizing the healing process. Dressings should also be absorbent, provide a barrier from bacteria, limit pain at the wound site, provide thermal insulation, and permit pain-free removal. Covered wounds help patients cope with the change in their body image.

Binders are designed for a specific part of the body like abdominal binders, shoulder slings, or chest binders. T-binders are used to secure rectum or perineum dressings. A double T binder is used for males, and a single T binder is used for females. The belt should be passed around the waist, and then the tails should pass between the legs prior to fastening. Typically, the binders are made of cloth or elasticized material that can be fastened with Velcro.

Montgomery straps are ties that attach to an adhesive backing that holds a dressing in place. They are useful in preventing skin irritation or tissue damage when retaping is necessary for repetitive dressing changes. The patient's skin should be protected with a skin barrier or hydrocolloid dressing before applying the Montgomery straps. The adhesive backing is applied to the adjacent skin with the ties extending over the wound area. The straps should be untied and turned back during wound changes and retied after the new dressing has been applied.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 6

Refer to Unfolding Case Study #4: Part 5 for a review of the patient data.

Nursing Notes	**1600:** Focused skin assessment performed. Open wound noted on bottom of left foot. Patient reports stepping on broken glass about a month ago but states, "I assumed my foot was fully healed because it doesn't hurt at all." Upon assessment, the wound is red with purulent drainage and surrounded by edematous tissue. Prophylactic dressing applied to sacral area. Provider notified.
Provider's Orders	**1700:** • Consultation with wound care team • Consultation with diabetes educator • Apply nonadherent gauze dressing on foot

4. Generate solutions: What are the rationales for the provider's orders?
5. Take action: What are the priority actions by the nurse at this time?
6. Evaluate outcomes: The wound care team assesses the patient and orders an antibacterial cream and dressing changes every other day. What findings would indicate that these interventions were successful?

Drains

Drains are often used with wounds that are expected to have an accumulation of fluid that would impede wound healing (Table 24.12). Drains may be placed during surgery to prevent fluid collection underneath the incision site. Drains, tubes, or catheters may be used in or near the wound site. These are commonly used after surgical procedures in which the surgeon places one end of a drain or tube near or in the area to be drained and passes the opposite end through the skin, through either the incision or a different opening (i.e., stab wound). Drains are either closed or open systems.

Type	Examples	Image
Closed drainage systems have a tube connected to a portable reservoir that provides continual low suction. These are typically sutured to the skin and require emptying to reestablish suction when needed.	Jackson-Pratt bulb drain Hemovac	 (credit: modification of "Surgical drain – waste container" by Wikimedia Commons, Public Domain)
Negative pressure wound therapy is a type of closed drainage system that uses a special sponge that works with a semiocclusive barrier that connects to a drainage system.	Vacuum-assisted wound closure	 (credit: "KCI Wound Vac01" by Noles1984/ Wikimedia Commons, Public Domain) (credit: "KCI Wound Vac02" by Noles1984/ Wikimedia Commons, Public Domain)

TABLE 24.12 Different Types of Drains

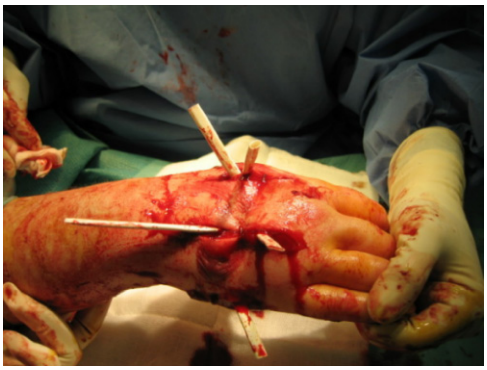
Type	Examples	Image
Open drainage systems do not have a collection device. The drainage empties from the wound or surgical site into absorbent dressings. These are typically sutured in place. The provider may order reducing the length of the drain inside the wound each day. This may be done by clasping the end of the drain with sterile forceps, then pulling it out a small distance using a twisting motion, and then cutting off the end with sterile scissors. A new sterile pin should be placed at the base as close to the skin as possible.	Penrose drain	 (credit: "Compartment syndrome in the hand Intraoperative image of the dorsal region of the right hand" by Belzunegui T, Louis CJ, Torrededia L, Oteiza J - Scand J Trauma Resusc Emerg Med/Wikimedia Commons, Public Domain)

TABLE 24.12 Different Types of Drains

Sutures and Staples

Sutures and staples are placed by the surgeon or provider to close the wound edges but may be removed by the nurse as ordered. They may be removed after the wound is strong enough to hold its edges together. The length of time needed to develop tensile strength varies among individuals and depends on wound location, age, and nutrition level of the patient. Silk sutures are generally removed after six to eight days to avoid marks; however, the collagen formation and remodeling can take up to three weeks. This may lead to stretching or widening of the scar after the sutures are removed.

Cleaning

Wound cleaning is essential to help remove microorganisms or debris and protect healthy granulation tissue. Normal saline solution (0.9 percent sodium chloride) is the typical cleaning agent used in wound care. However, there are other products available like cleaning antiseptic or surfactant sprays that may be used with infection, debris, or increased amounts of bacterial colonization. Wounds are cleaned after the old dressings have been removed and before applying new dressings.

Growth Factors

Growth factors are naturally occurring polypeptides involved in essential cellular processes needed for tissue regeneration. Growth factors bind to their corresponding receptors on the cell surface to induce signaling pathways to initiate signaling molecules that can stimulate cytoplasmic proteins or prompt the transcription of new proteins (Park et al., 2017). The only exogenic growth factor that has shown to be efficient in treating chronic wounds is the recombinant platelet-derived growth factor. This growth factor is synthesized outside the human body and stimulates the immune cells and fibroblasts to prompt the development of the extracellular matrix. Growth factors may be applied topically to the wound by the nurse with an order from the provider.

Hyperbaric Oxygen Therapy

A more advanced wound care therapy is hyperbaric oxygen therapy (HBOT). This technology expedites repair of compromised healing wounds. Patients undergoing this therapy are placed in a pressurized, hyperbaric chamber for generally one to two hours where they breathe 100 percent oxygen. This amount of oxygen enhances the amount of oxygen dissolved in the plasma and also promotes cell proliferation and healing. A highly concentrated oxygen environment boosts wound metabolism, enhances the response to growth factor, activates angiogenesis, and provides antioxidant and antibacterial effects to enhance immune function. Nurses work under the supervising provider to administer this therapy to patients. Patients should be supervised throughout the entire treatment and monitored for adverse effects like oxygen toxicity, claustrophobia, middle ear injuries, or pneumothorax. Fragranced hygiene products, medical devices like glasses or hearing aids, jewelry, flammable objects, and electronics should be avoided while inside the chamber (Alemayehu et al., 2019).

LINK TO LEARNING

Patients may be unsure about hyperbaric oxygen therapy and may ask for a reference to review at home. The Food and Drug Administration provides an overview of hyperbaric oxygen therapy (https://openstax.org/r/77hyperbaric) for consumers to review.

Debridement

The removal of slough or necrotic tissue and foreign material by various methods is **debridement**. Along with removal of dead tissue and bacteria, this process stimulates growth factor to promote wound healing. In **autolytic debridement**, occlusive dressings are used to enhance the body's own defense mechanisms to liquefy or soften necrotic tissue. Applying commercially prepared enzymes that accelerate the body's autolytic process is **enzymatic debridement**. In **mechanical debridement**, external physical force is applied to remove debris or necrotic tissue. This method may be accomplished through wound irrigation with pulsed pressure lavage, ultrasound, laser therapy, surgical debridement, or whirlpool therapy.

Wet-to-dry dressings may still be ordered with debridement, although there are concerns that this method interrupts angiogenesis. If this method is ordered, it is important that the nurse ensure that the product being used supports moisture balance and that there is no dry gauze in the wound.

Wound Care Education and Health Promotion

Education is a vital component of a nurse's care of patients, particularly when the nurse is preparing the patient for discharge. Education should include the patient and their family members. Continuity of care, whether it is the patient going home or being transferred to another facility or unit, is essential to promote healing and prevent infection or worsening complications. Education may also be taught during home care. Education may include at-home wound care and pressure injury prevention.

Patients and their families should be taught about risk factors for pressure injuries, how and where these injuries may arise, and prevention strategies. Any instructions or illustrations provided should be written at a level the patient can understand and in their preferred language. Other education should include proper hand hygiene before and after care as well as the signs and symptoms of infection.

Education and health promotion should include adequate nutrition and hydration to promote wound healing. The nurse should assess for any deficiencies and make recommendations as needed. Regular visits with the provider should also be encouraged, which allows the provider to oversee the progression and quality of wound healing. This also allows the provider to make changes to the healing and wound care processes, as needed. If the patient complains of pain associated with wound care, the nurse should educate the patient on using pain medication thirty to sixty minutes before wound care is provided.

PATIENT CONVERSATIONS

Nutrition Education to Support Wound Healing

Scenario: A nurse is providing discharge education to a patient with a stage III pressure injury that will be transitioning to the outpatient wound clinic. During the education, the nurse realizes that the patient does not currently intake enough protein.

Nurse: All right. So, we have covered everything in your discharge plan. I would like to go more in depth with you about nutrition to ensure we are promoting your healing process. Is that okay?

Patient: Sure. I guess I just don't understand why it matters.

Nurse: Nutrition is vital in the healing process. When your body does not have adequate nutrition, it struggles to promote the adequate healing process. Things like protein, vitamin C, and fluids are important to intake in adequate amounts. If you have any deficiencies, it may lead to further skin breakdown, electrolyte imbalances, inadequate circulation, and swelling. All of those either slow healing or inhibit it all together. Does that make sense?

Patient: It does. I drink about 100 ounces of water a day, and I take a daily vitamin. How do I know if I am getting enough protein in?

Nurse: That is a great question. This actually varies from person to person. Studies have shown that wound healing requires 1.5 grams of protein per kilogram each day (Saghaleini et al., 2018). So, I see here that you weigh 155 pounds and that would equate to 106 grams of protein a day. You can either write down what you eat or track it in an app on your mobile phone to ensure you meet that daily goal.

Patient: Oh, like that MyFitness Pal my daughter put on my phone?

Nurse: Yes sir. Have you used it before?

Patient: Well, I played with it when she first installed it. It seems pretty easy. I just stopped using it when I was in the hospital.

Nurse: Okay. Do you need help using it at all?

Scenario follow-up: The patient got his phone out and opened the app. The patient was able to input various food items with little assistance. This return demonstration allowed the nurse to assess that the patient was able to perform this task.

Nurse: I am glad you are able to use the app. If you do not want to use an app, you can always keep a handwritten food journal. What kind of protein do you usually enjoy eating?

Patient: Steak or any kind of beef, cheese, and pork.

Nurse: Okay, do you enjoy chicken, eggs, or any dairy products?

Patient: Yeah, I do, and I do eat those.

Nurse: Great. Those are also great sources of protein as well as nuts, seeds, nut butters, beans, lentils, and edamame.

Patient: Oh, I do enjoy a lot of those as well. Sometimes I only eat breakfast and dinner, so I do not think I get 106 grams of protein in a day. I just have not been hungry lately.

Nurse: You can supplement your diet with things like protein shakes or drinks to aid boosting your protein intake. I have a list here that I am going to send you home with. It includes protein and other food groups that support wound healing.

Patient: That will be great. My wife would like that.

Nurse: Of course.

Any education provided to the patient and their family should be evaluated. The patient and family should verbalize understanding or give a return demonstration. The patient or family should be encouraged to participate in wound care, so that the nurse has a chance to reinforce or confirm proper care techniques.

Teaching Self-Care at Home

Teaching self-care at home should cover supplies, infection prevention, and wound healing. Supplies should be easily attainable so the patient can perform care at home. The nurse should consider cost and ease of use when making recommendations on how the patient can obtain supplies. Most supplies are available from a medical supply store, discount store, drugstore, or pharmacy. The patient may have preferences in regard to the location of the store to their home. Insurance companies may reimburse or provide financing for supplies, so the nurse should encourage the patient to follow up with their insurance provider.

Infection prevention is paramount with wound healing because infection can slow wound healing or cause further complications. The nurse should provide education on proper hand hygiene, glove usage, and wound care steps. The patient and family should be educated on signs and symptoms of infection and when to notify the provider. Signs and symptoms include fever, flu-like symptoms, increased pain, thick drainage with a foul odor that may be yellow tinged, and red or separated wound edges. The education should also include instructions on proper disposal of old dressings (e.g., putting old dressings in a plastic bag and placing it in the trash bin).

Wound healing self-care should focus on promoting optimal healing. The education should cover balanced nutrition high in protein and vitamins as well as drinking at least forty-eight to sixty-four ounces of hydrating fluids. Rest periods should be encouraged during the day to avoid overexertion or injury. The patient may also need modifications surrounding their activities of daily living until the healing is complete. The provider may have restrictions or recommendations to follow, which should be taught to the patient. The family should be educated as well to be able to help the patient and ensure compliance. Patients who struggle with an altered body image or difficulty coping with the wound and activity restrictions may benefit from counseling in a group setting or with a one-on-one therapist.

Summary

24.1 Structures and Function of the Skin

The epidermis, dermis, and hypodermis are the three distinct layers of the skin. The epidermis is the outermost portion and is made up of stratified epithelial cells. The dermis is the second layer of skin that consists of elastic connective tissue made up of collagen. The bottom layer, the hypodermis or subcutaneous tissue, anchors the skin to the underlying tissues. The functions of the skin include protection, thermoregulation, sensation, absorption, elimination, and vitamin D production. These functions each play a major role in maintaining health and homeostasis of a person. The skin has psychosocial effects and serves to aid in identification. Assessment findings may vary among cultures and ethnicities, developmental levels, and age groups.

24.2 Skin Integrity

Normal healthy skin is based on the age, ethnicity, genetics, and health condition of the patient. Patients are at risk of impaired skin integrity if they have risky lifestyle and behavioral factors (e.g., poor nutrition, activity levels, sexuality, illicit drug use, body piercings, tattoos). State of health (e.g., illnesses, medications, mobility status) and genetic (e.g., vitiligo, acne, melanoma, psoriasis, eczema) factors may also pose a risk. Common skin disorders include bacterial infections, viral infections, fungal infections, inflammatory reactions, and skin cancers. Common bacterial infections of the skin include impetigo, folliculitis, carbuncles, and cellulitis. Viral skin infections include herpes simplex, herpes zoster, and verruca. Common fungal skin infections include tinea that affects the feet and toes, beard, body, groin, and scalp. Parasitic skin infections include pediculosis that affects the body, scalp, and groin, and scabies. Inflammatory skin reactions include eczema, seborrheic dermatitis, urticaria, acne vulgaris, psoriasis, and SLE. Skin cancer has three main types: basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. People with impaired skin integrity may need to make lifestyle modifications to promote healing. Nurses must take age-related and cultural factors into consideration when developing a plan of care and educating patients, their family members, or their caregivers to promote skin health.

24.3 Wound Classification

Wounds are classified in several ways and include intentional or unintentional wounds (treatment and therapy or accidental), open or closed wounds (break in the skin or under the skin layers), acute or chronic wounds (follow normal healing process or healing is delayed and does not follow normal healing process), pressure injuries, and friction and shear. Pressure injuries are localized ischemic lesions of the skin and underlying tissue caused by external pressure that impairs blood and lymph flow. Friction and shear are mechanical forces that tear and injure blood vessels and can contribute to the development of pressure injuries.

Risk factors for pressure injury development include exposure to excessive moisture, malnutrition and dehydration, lack of mobility, and cognitive factors. Moisture weakens the skin integrity and makes it more susceptible to breakdown and infection. Malnourishment leads to cell damage, inadequate perfusion, and lack of padding for bony prominences. People who have mobility issues or are bedridden are unable to adjust themselves in response to pressure and are often in one position for a prolonged period of time. Those with altered mental status and who have decreased awareness (e.g., unconsciousness, sedation, dementia) are at risk because they are less likely to recognize and respond to the discomfort from pressure.

Depending on the extent of damage, pressure injuries are assessed and classified as stages one through four and as deep tissue or unstageable. A stage I pressure injury is characterized by localized nonblanchable erythema of intact skin. Stage II pressure injuries are characterized by partial-thickness skin loss involving the epidermis or dermis. Stage III pressure injuries are characterized by full-thickness skin loss in which the adipose, granulation, and deeper tissues are visible and may have a presence of slough or eschar. Stage IV pressure injuries are characterized by full-thickness skin loss with extensive destruction, necrosis, and exposed or palpable fascia, tendon, ligament, muscle, cartilage, and bone. Slough and eschar are often visible along with epibole, undermining, and/or tunneling. Deep-tissue pressure injuries are characterized by persistent, nonblanchable areas of intact skin that have maroon, deep red, or purple discoloration. Pressure injuries are classified as unstageable if they have full-thickness skin or tissue loss with excessive slough or eschar that obscures the extent of the damage.

24.4 Wound Healing

Wound management encompasses many nursing interventions that are essential for promoting healing and tissue regeneration. To effectively manage wounds, nurses must understand the phases of wound healing, factors affecting wound healing, psychological effects of wounds, complications affecting wound healing, and the nurse's role in wound care management. Wounds are healed by primary, secondary, or tertiary intention. Wound healing can be broken down into the following phases: hemostasis, inflammatory phase, proliferation phase, and maturation. Several factors may influence the speed of wound healing and may be localized or systemic. Localized factors are those factors that occur directly in the wound (i.e., desiccation, maceration, trauma, edema, infection). Systemic factors are not related to the wound itself. These factors take place throughout the body (i.e., age, venous insufficiency, poor oxygenation, obesity, diabetes, medications, smoking and alcohol use). Wounds and pressure injuries cause stress and emotional challenges caused by pain, fear, disruption to activities of daily living, and an altered body image that can have a significant effect on an affected person's self-identity and mental well-being. There are several events that can interfere with wound healing and cause complications. Infection, hemorrhage, dehiscence and evisceration, and fistulas can increase the risk of death or generalized illness, increase healthcare costs, and prolong the need for healthcare interventions. The nursing role includes assessment and documentation, positioning, dressing care, drain care, suture and staple care, cleaning, debridement, administering growth factors, heat and cold therapy, wound care education and health promotion, and teaching the patient to perform self-care at home. Other therapies that the nurse may be required to assist with include hyperbaric oxygen therapy and surgery. It is essential that nurses understand their role in wound care management to effectively implement interventions within their scope of practice.

Key Terms

abrasion an area damaged by scraping
acne vulgaris a common inflammatory skin reaction caused by bacteria, dead skin cells, or dried sebum that clogs hair follicles and prevents sebum from passing up through the pores
acute wound a wound that occurs suddenly and progresses through expected stages of healing
angioedema swelling of the face, lips, throat, or airways
angiogenesis process where capillaries grow across the wound increasing blood supply and oxygen
apocrine gland correlates with the hair follicles present in the perineum, axillae, and areolae of the breasts
arrector pili muscle triggers hair follicles on the body to flex causing the hair to rise up
arthrofibrosis scar tissue formed around a joint during the healing process, which limits range of motion
autolytic debridement using occlusive dressings to enhance the body's own defense mechanisms to liquefy or soften necrotic tissue
avulsion a forcible tearing off of skin or another part of the body
basal cell carcinoma the most common skin cancer that is generally found on the head or neck; it may be serious but is not usually fatal
blackhead flesh-colored, small bump with a dark center
blanching temporary whitening or lightening of the skin around the wound site upon applying pressure
Braden scale pressure injury risk assessment tool used across healthcare settings to evaluate the relative risk of a patient developing skin breakdown and pressure injuries
bullae large blisters
bullous impetigo type of impetigo that has large, flaccid bullae on the skin that rupture and leave a thin brown crust
burn injury to the skin caused by thermal, electrical, chemical, or electromagnetic energy
carbuncle cluster of skin abscesses connected to one another below the surface of the skin; often form when one or more hair follicles are infected
cellulitis localized infection and inflammation of the skin and tissues that are immediately beneath the skin
chronic wound no healing occurs for at least three months
closed wound does not have a break in the skin and occurs under the skin's surface
collagen whitish protein substance that adds flexible strength to the wound
comedone extraction use of a comedone extractor by a healthcare professional to remove blackheads and whiteheads by incising the pore and then using gentle pressure around the pore opening with a wire loop
contusion a region of injured tissue or skin in which blood capillaries have been ruptured

cystic acne lesions that are usually large, red, painful, and pus-filled nodules that merge under the skin and often leave scars
debridement removing slough or necrotic tissue and foreign material by various methods
defensin has antimicrobial and/or cytotoxic properties and is part of the body's first immune defense
dehiscence partial or total rupturing of a sutured wound
dermatosis papulose nigra small dark or skin-colored bumps on the face, neck, and upper torso; common in people with darker skin colors
dermis the layer of skin below the epidermis connected to the epidermis by dermal papillae
desiccation unintentional wound or tissue dehydration
diabetic neuropathy nerve damage that causes numbing sensations
disseminated zoster herpes zoster rash that affects three or more dermatomes
eccrine gland located over the skin entirely, secrete sweat, and aid in thermoregulation
ecthyma (also, deep impetigo) a skin infection that occurs deep inside the skin characterized by shallow, small ulcers that look punched out and may contain pus
eczema (also, atopic dermatitis) rash characterized by itchy, chronic inflammation of the upper skin layers; associated with a heightened immune response
edema swelling caused by excessive buildup of fluid in tissue spaces or a body cavity
emollients ingredients that soothe skin dryness
enzymatic debridement applying commercially prepared enzymes that accelerate the body's autolytic process (cell breakdown by enzymes contained in the affected tissue)
epibole rolled or curled-under wound edges that slow or stop the wound healing process
epidermis the outermost layer of the skin consisting of epithelial cells
erythema reddening of the skin
eschar dead tissue that forms over healthy skin and then, over time, falls off or sheds
evisceration protrusion of the viscera through the incision when the wound completely separates
excoriation loss of the superficial layers of the skin, also known as a denuded area
filiform wart long, small, narrow growth that appears on the lips, face, or eyelid
fistula an abnormal passage from one internal organ or vessel to another or an internal organ or vessel to the outside of the body
flat wart may appear in an area that is shaved or along a stretch mark
fluctuance tense area of skin with a wavelike or boggy feeling on palpation
folliculitis an infection of the skin follicle
friction two surfaces rubbing against each other
genital wart (also, condyloma acuminata, venereal wart) occurs on the vagina, vulva, cervix, and penis
granulation tissue delicate, new reddish connective tissue and tiny blood vessels that bleed easily but provide the framework for scar tissue development
hematoma localized collection of blood under the skin that may appear reddish blue with swelling
hemostasis cessation of bleeding
herpes simplex viral infection that can cause painful blisters or ulcers
herpes zoster (also, shingles) maculopapular rash associated with shingles; most often appears on the trunk of the body along a thoracic dermatome
hydroxylation the chemical process in which a hydroxyl group (-OH) is introduced into an organic compound
hyperpigmentation darkened patches of skin (liver spots)
hypodermis the subcutaneous fatty layer beneath the dermis that anchors the dermis to the underlying tissues of the body
hypopigmentation lighter patches of skin (age spots)
hypoproteinemia abnormally low amounts of serum protein from the diet
impetigo highly contagious bacterial skin infection that forms pustules and yellow crusty sores
incision a surgical cut made in skin or flesh
intentional wound a planned wound; the result of a treatment or therapy
keloid a thick fibrous scar caused by excessive collagen formation in response to trauma or a surgical incision
keratin fibrous water-repellant protein gives the epidermis its strong, protective quality
keratinization a thickening of plasma membranes of a cell

keratinocyte cell that produces keratin
laceration deep cut or tear in the skin or flesh
Langerhans cell antigen-processing cell that determines the appropriate response to, for example, inflammation, or tolerance of a foreign substance
localized wound healing factors affects wound healing directly (desiccation, maceration, trauma, pressure, excessive bleeding and edema, infection)
maceration softening of tissues caused by prolonged wetting or soaking
malignant melanoma the most dangerous type of skin cancer that originates in the melanocytes
mechanical debridement applies external physical force to remove debris or necrotic tissue
melanin dark brown to black pigment protects the keratinocytes and nerve endings from ultraviolet light damage that appears in the skin and hair
melanocyte cell that produces melanin and keratinocyte
Merkel cell found in the stratum basale and serves as a sensory receptor for light touch
mitotic activity the degree in which a population of cells proliferates
Mohs procedure layers of the skin are removed and examined for cancer cells until no signs of cancer remain
Montgomery straps ties that attach to an adhesive backing that holds a dressing in place
mosaic wart wart that grows in a cluster
nonbullous impetigo type of impetigo that has pustules that rapidly break down and form thick adherent honey-colored crusts on the face and extremities
NPO nothing by mouth
open wound a break in the skin or mucous membranes caused either intentionally or unintentionally
palmar wart wart on the palm of the hand
papillary layer thin, dermal layer of the dermis composed of loose connective tissue, which contacts the epidermis
parasite an organism that lives in or on an organism of a different species and depends on the host for nutrients
pediculosis lice infestation
pediculosis capitis lice infestation of the scalp
pediculosis corporis lice infestation of the body
pediculosis pubis lice infestation of the hairs of the anal and genital areas but can also infest the thigh, chest, and facial hair
penetration wound caused by an object that pierces the skin and lacerates or damages adjacent tissue
perspiration (sweat) excess water and salts that are eliminated from the body via sweat glands
phagocytosis occurs as leukocytes and macrophages move into the interstitial space to ingest bacteria and cellular debris
photodynamic therapy using lasers and chemicals on the skin
pimple has a small area of red skin and can be painful or cause discomfort
pityriasis any of various skin conditions characterized by dry scaling patches of skin
plantar wart wart on the sole of the foot
post-inflammatory hyperpigmentation temporary pigmentation that occurs after an injury or inflammatory skin condition, most commonly seen in people with darker skin types
pressure injury a localized ischemic lesion of the skin and underlying tissue caused by external pressure that impairs blood and lymph flow
primary intention healing type of healing in which the wound edges have been approximated with little to no tissue loss and show formation of nominal granulation tissue and scarring
prodromal state period between the appearance of initial symptoms and the full development of an illness causing headache, malaise, chills, or photophobia
pruritis itching
psoriasis a recurring, chronic skin condition that causes one or more raised areas of red skin patches with silvery scales and a distinct border
puncture wound made by a pointed object
pustule similar to a pimple but contains white or yellow pus
Raynaud syndrome a condition that causes pale or blue fingers with cold exposure
reticular layer thick, dermal layer of the dermis that consists of dense connective tissue and collagen bundles and

houses most of the sweat glands, sebaceous glands, hair follicles, hair, muscles, blood vessels, and deep sensory neurons

scabies contagious skin infestations caused by a burrowing mite

sebaceous gland secretes sebum, an oily substance that makes the hair and skin waterproof

seborrheic dermatitis inflammatory skin reaction primarily on the scalp and face

secondary intention healing healing process of extensive wounds that have significant tissue loss making approximating edges difficult or not a good option

shear when one tissue layer slides over the other

slough a nonviable layer of dead tissue that is stringy, moist, and yellow, tan, gray, green, or brown in color

squamous cell carcinoma the second most common type of skin cancer that generally develops on sun-exposed areas but can grow where sun exposure is limited

stable eschar area of eschar on the skin that is adherent, dry, and intact without fluctuance

stratum basale (stratum germinativum) deepest layer of the epidermis that contains melanocytes and keratinocytes

stratum corneum thickest and outermost layer of the epidermis that secretes defensins as part of the body's first immune defense

stratum granulosum layer above the stratum spinosum that contains a glycolipid, which slows water loss across the epidermis

stratum lucidum layer of skin only found in thick areas like the soles of the feet and palms of hands

stratum spinosum layer above the stratum basale; contains cytoplasmic processes (spines) that extend outward and contact neighboring cells

subcutaneous tissue the subcutaneous fatty layer (hypodermis) beneath the dermis that separates the skin from the underlying tissue

superinfection secondary infection that is unrelated to the original infection and results from opportunistic colonization after immunosuppression

systemic lupus erythematosus (SLE) a chronic autoimmune inflammatory disorder involving connective tissues of the joints, skin, kidneys, mucous membranes, and blood vessel walls

systemic wound healing factors occurs throughout the body and is not related to the wound itself (e.g., age, venous insufficiency, poor oxygenation, obesity, diabetes, medications, smoking or alcohol use)

telangiectasia red mark on the skin caused by the widening of shallow blood vessels

tenting the skin does not snap back when pinched; instead, it maintains a tentlike shape, which may indicate dehydration

tertiary intention healing delayed primary intention where the wound is left open for three to five days to allow edema or infection to resolve or to let any exudate to drain

tinea (also, ringworm) may be found on the feet, beard, body, groin, scalp, or toes

tinea barbae (also, beard ringworm) fungal infection of the beard

tinea capitis fungal infection of the scalp

tinea corporis fungal skin infection of the arms, trunk, legs, and face

tinea cruris fungal infection of the groin

tinea pedis (also, athlete's foot) fungal infection of the feet

tinea unguium (also, onychomycosis) fungal infection of the toenail or fingernail

transdermal administration placed on the skin and absorbed either locally or systemically

ulcer open sore caused by poor blood flow

unintentional wound a wound from an unexpected trauma

urticaria (also, hives) rash of raised, swollen, flesh-colored or red bumps or welts on the skin

varicella (also, chickenpox) caused by the varicella-zoster virus

venous insufficiency failure of the veins to adequately circulate the blood, especially from the lower extremities

verruca (also, warts) raised or flat growths caused by the viral infection human papillomavirus

vesicles small blisters

vitiligo chronic autoimmune disorder that causes partial or total loss of skin color in patches

whitehead flesh-colored small bump that does not have a dark center

wound an injury that causes a disruption of normal skin or tissue integrity

xerosis skin dryness

Assessments

Review Questions

1. What term would the nurse document when describing the depth of a laceration through the second layer of skin?
   a. Langerhans
   b. keloid
   c. keratin
   d. dermis

2. Which layer of the epidermis is only present in the soles of the feet?
   a. stratum basale
   b. stratum granulosum
   c. stratum lucidum
   d. stratum spinosum

3. What is the primary function of the skin?
   a. protection
   b. store and release fat
   c. vitamin B production
   d. digestive enzyme production

4. The nurse is educating a patient on how their skin helps with temperature regulation. The nurse explains to the patient that when the body temperature decreases, the blood vessels do what?
   a. vasoconstrict to increase blood flow
   b. vasoconstrict to decrease blood flow
   c. vasodilate to increase blood flow
   d. vasodilate to decrease blood flow

5. The nurse caring for a dark-skinned patient knows that the patient is more susceptible to which of the following?
   a. freckles
   b. keloids
   c. skin cancer
   d. sunburns

6. The pediatric nurse is educating a new mother on risk factors that may contribute to her young infant's risk for hypothermia. What statement from the mother would suggest that she understood the teaching?
   a. "My child is at risk for hypothermia because he has a lesser amount of subcutaneous tissue, meaning his blood vessels are farther away from the surface."
   b. "My child is at risk for hypothermia because he has more subcutaneous tissue, meaning his blood vessels are farther away from the surface."
   c. "My child is at risk for hypothermia because he has more subcutaneous tissue, meaning his blood vessels are closer to the surface."
   d. "My child is at risk for hypothermia because he has a lesser amount of subcutaneous tissue, meaning his blood vessels are closer to the surface."

7. What is an example of a lifestyle choice that is a behavioral risk factor for impaired skin integrity?
   a. diabetes
   b. illicit drug use
   c. medication use for congenital heart disease
   d. impaired mobility

8. A 67-year-old patient presents to the clinic with redness, edema, and fluid-filled vesicles on the right leg that is hot to the touch. The patient also complains of pain and tenderness. The patient's heart rate is 110 and temperature is 100.8°F (38.2°C). The nurse should suspect what skin abnormality?
   a. folliculitis
   b. carbuncles
   c. impetigo
   d. cellulitis

9. The nurse is caring for an adult who has just been diagnosed with shingles. What statement from the patient would suggest that she understood the teaching?
   a. "Varicella lies dormant after having the vaccination or chickenpox. It can reactivate later in life and present as shingles."
   b. "Shingles can only occur if you have had the varicella vaccine."
   c. "I had chickenpox as a kid, so I should not be getting this virus."
   d. "Shingles only affect women."

10. You are educating a patient on preventing skin cancer. What statement from the patient would suggest that she understood the teaching?
   a. "I will only go to the tanning salon twice a week."
   b. "I will avoid the sun from 9 a.m. to 1 p.m. when the ultraviolet rays are the strongest."
   c. "I will wear protective clothing like long sleeves, hats, and sunglasses, and use sunscreen at the lake this weekend."
   d. "I will use a sunscreen that has an SPF factor of five or greater."

11. What is *not* a benign skin change found in older adults?
   a. cherry angiomas
   b. wrinkles
   c. carbuncle
   d. melasma

12. Identify an example of an intentional wound.
   a. bullet
   b. stab wound
   c. surgical incision
   d. fracture

13. The nurse recognizes that what factor does not put a patient at risk for pressure injury development?
   a. altered mental status
   b. loss of appetite
   c. advanced age
   d. weightlifting

14. Maceration can be defined as:
   a. loss of superficial layers of the skin
   b. tissue softened by prolonged wetting or soaking
   c. tissue hardened by pressure
   d. tissue that has development of slough

15. The nurse is assessing a patient with a deep red area of intact skin that does not blanche. At what stage of pressure injury is this classified?
   a. stage I injury
   b. deep-tissue injury
   c. unstageable injury

d. stage II injury

16. The nurse is educating a new graduate nurse on pressure injuries. What statement from the student would suggest that she understood the teaching?
   a. "The difference in stage III and IV pressure injuries is the visibility of fascia, tendon, ligament, muscle, cartilage, and bone."
   b. "Slough and eschar are present at every stage."
   c. "If the area blanches, it is stage I."
   d. "A diabetic ulcer is also called a deep-tissue pressure injury."

17. During which phase of the healing process do leukocytes move into the interstitial space to ingest bacteria and cellular debris?
   a. hemostasis
   b. inflammatory phase
   c. proliferation phase
   d. maturation phase

18. The nurse is explaining complications associated with wound healing to a new patient at the clinic. How should the nurse describe maceration?
   a. occurs when hydration leads to cell death
   b. occurs when there is trauma the wound
   c. occurs when there is swelling that interrupts blood flow
   d. occurs where the cells are overhydrated, leading to skin softening and breakdown

19. What nursing intervention is appropriate when performing a dressing change?
   a. administering pain medication prior to wound care when the patient states that wound care is painful
   b. telling the patient that they just need to look at the wound
   c. explaining to the patient that the smell from the wound is not that bad
   d. encouraging the patient that they do not have to make any changes in their activities of daily living

20. What type of debridement promotes the body's own defense mechanisms?
   a. enzymatic debridement
   b. mechanical debridement
   c. autolytic debridement
   d. wet-to-dry debridement

Check Your Understanding Questions

1. Describe the layers of the skin, including name, location, and primary function.

2. Describe the layers of the epidermis.

3. Which skin condition is shown in the picture?

(credit: "Basal Cell Carcinoma" by National Cancer Institute, Public Domain)

   a. basal cell carcinoma
   b. pustule
   c. tinea corporis
   d. verruca

4. Describe intentional and unintentional wounds.
5. Describe closed and open wounds.

Reflection Questions

1. What information should a nurse include when educating a caregiver about administering transdermal medications to their loved one at home?
2. Describe how the skin provides protection.
3. What information might you consider when assessing whether a patient is at risk of developing a pressure injury?
4. What information should you consider when preparing education for self-care at home?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #4: Part 5.
   How would you perform a Braden scale assessment on the patient?
2. Refer to Unfolding Case Study #4: Part 6.
   What is the purpose of using a nonadherent gauze dressing as opposed to another type?

What Should the Nurse Do?

1. The nurse is caring for a patient with malignant melanoma that has metastasized to the brain, spine, lungs, and liver. The patient states they do not want any medical treatment or interventions. What should the nurse do?

The nurse on an intensive care unit is caring for an 83-year-old female admitted for a urinary tract infection and sepsis. The patient has been in a nursing home following a cerebrovascular accident resulting in right-sided weakness and paresthesia. The patient appears to be malnourished with sunken skin over bony prominences. During the shift assessment, the nurse notes a reddened area of intact nonblanchable skin on the sacral areas. The head of the bed is elevated because the patient is at risk of aspiration with feedings.

2. How would the nurse assess the skin?
3. What factors increase this patient's risk of skin breakdown?
4. What things can the nurse do to prevent further damage and promote healing?

Competency-Based Assessments

1. Prepare a fifteen-minute presentation on the anatomy of the skin.
2. Prepare a fifteen-minute presentation on the functions of the skin.
3. Develop an infographic comparing bacterial infections of the skin.
4. Prepare a script for teaching a patient with a dark skin tone about the types of skin conditions more prevalent in people with darker skin.
5. Describe key points the nurse would teach the patient about wound management at home.

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CHAPTER 25
Hygiene

FIGURE 25.1 Patient hygiene is of paramount importance in all healthcare settings and has significant implications for both patient well-being and infection control. Maintaining proper hygiene practices for patients helps prevent the spread of infections, enhances patient comfort, and contributes to overall health. (credit: modification of "U.S. Navy Sailors perform medical care at Billings Clinic Hospital 211113-A-PE084-003" by Navy Medicine/Flickr, Public Domain)

CHAPTER OUTLINE

25.1 Hygienic Practices
25.2 Factors Affecting Hygienic Practices
25.3 The Nurse's Role in Hygiene

INTRODUCTION You are a nurse assessing an 87-year-old patient in a care facility who has very limited mobility. Your patient welcomes you in while ambulating with a walker and slowly removes some items from a chair, signaling for you to sit. As you strike up a casual conversation to build rapport, you begin to observe their disheveled appearance. You notice their unkempt hair, soiled clothing, rough skin, and dirt under some of their fingernails. Your sense of smell detects body odor, indicating a lack of bathing and oral care. Evaluating patient hygiene is important to determine how well a patient can care for themselves or how well someone is caring for them. Good hygiene is necessary for health, comfort, personal well-being, and safety.

25.1 Hygienic Practices

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the importance of good hygiene practices
- Describe hygiene-related diseases
- Recognize the impact good hygiene has on mental health

The term **hygiene** is defined as the measures or practices conducive to preserving health and preventing disease

through cleanliness. The self-care measures one would perform to preserve their own health are called **personal hygiene**. Examples of personal hygiene include handwashing, bathing, brushing and flossing teeth, as well as washing and combing hair. These measures may seem like basic tasks; however, they are essential procedures that aid in preserving one's health. Hygiene practices promote **medical asepsis**, also known as the clean technique, inhibiting the growth and spread of disease-producing microorganisms. Hygiene practices may vary among individuals and cultures. Allowing patients to perform self-care tasks as independently as they can for the purposes of preserving the patients' quality of life, self-worth, and autonomy is crucial to maintaining the individual's self-esteem and independence (both present and future). Performing self-care tasks also allows the nurse to determine the patient's ability to perform activities of daily living (ADLs) during recovery while the patient is working toward discharge. Patients may often need assistance, so the nurse's responsibility is to oversee the patient's privacy as well as their ability to adequately perform the various hygiene tasks. For instance, some circumstances may be presented when the patient is fully dependent on the nurse to aid in necessary bathing, elimination, bed making, oral care, or any other tasks. Nurses aiding patients with hygiene have an obligation to respect individual patient preferences while providing the care that the patient should not or is not able to provide for themselves. In addition, nurses should take into consideration the patient's physical and emotional well-being.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs.

The nurse will:

- Examine common barriers to active involvement of patients in their own healthcare process.
- Describe strategies to empower patients or families in all aspects of the healthcare process.
- Respect patient preferences for degree of active engagement in care process.
- Integrate understanding of multiple dimensions of patient-centered care: patient/family/community preferences and values, coordination and integration of care, physical comfort and emotional support, involvement of family and friends, and transition and continuity.

Benefits of Good Hygiene Practices

Good hygiene practices include not only personal hygiene but also those measures that may require a nurse's or an aid's full or partial assistance. Hygiene practices promote medical asepsis and prohibit the growth of pathogenic microorganisms, which leads to decreased chances and/or incidence of infection. Good hygiene can not only protect an individual from becoming ill but can also prevent individuals from spreading diseases to others. Good hygiene also promotes self-esteem and can boost a patient's mood, resulting in improved mental health.

Skin

The skin is the largest organ and the body's first line of defense. This organ provides a barrier to protect the body from invasion of bacteria or other potential environmental hazards. The skin houses various functional body structures, such as the capillaries, vessels, and glands. For example, the dermis layer of the skin contains sebaceous glands. These glands release **sebum**, an oily secretion that hydrates and protects the skin. It is important to note this glandular function, as inadequate hygiene may lead to excess sebum and skin breakouts. Proper hygiene practices can help promote and maintain skin integrity. Regular exfoliation and cleansing can promote smoother, softer, and more even-toned skin, slower aging, and boost circulation. In turn, these measures allow the skin to properly perform the functions of protection, sensation, heat regulation, excretion, secretion, and absorption. Each function plays a pivotal role in maintaining homeostasis and preserving the individual's health. For example, when the skin integrity is intact, the skin is able to prohibit the entry of pathogens, prevent water loss, and reduce the absorption of harmful chemicals or substances (World Health Organization, 2020). In addition, the regular practice of skin hygiene allows for early detection and intervention of abnormal skin growths that may appear.

The **skin breakdown** refers to damage or injury to the skin and underlying tissue due to prolonged pressure, friction, shear, or moisture. Examples of skin breakdown include burns, scrapes, cuts, blisters, and pressure injuries. Factors

associated with skin breakdown include immobility, certain medications, incontinence, altered mental status, loss of sensation, or inadequate nutrition. Therefore, the crucial maintenance of proper skin hygiene in the healthcare setting must be ensured. Any skin breakdown that develops after a patient is admitted to a facility becomes the healthcare facility's responsibility, including the financial burden for the treatment and recovery of the skin injury. Preventing skin breakdown through good skin hygiene can result in optimal healing of a patient's skin and prevent an increase in healthcare costs, length of stay, and patient discomfort.

Hair

The hair is also part of the integumentary system and is found all over the body, except the palms of the hands and soles of the feet. Hair is a large part of the integumentary system and has several functions. First, hair has a protective function. By trapping bacteria, debris, and harmful particles, the hair does not allow these offensive agents to enter the skin. Hair also blocks sunlight from the scalp, protecting against excess exposure to ultraviolet radiation. Hair provides warmth by trapping air close to the skin. Hair grows from the skin and when the skin produces sebum, it can build up on the hair shaft. An overabundance of sebum can build up if the hair or body is not regularly washed. A common skin condition is folliculitis, which happens when hair follicles become inflamed; it can occur when the hair follicles become infected due to the buildup of sebum. When the scalp of the head is not regularly washed, dead skin, product residue, sweat, and dirt may also build, which results in an increased risk for infection, unpleasant odor, and greasy hair. In addition, prolonged periods of not washing the hair on the head can damage hair and impede its ability to grow. When the body is not regularly washed, the overproduction of sebum found on the skin can lead to oily skin or acne. Proper hair hygiene supports reducing those risks and aids in reducing bacterial and fungal growth. Bacteria and fungus can cause conditions such as ringworm, which is a common fungal infection of the skin, hair, or nails.

Nails

The nails are also part of the integumentary system. Proper nail hygiene prevents the spread of infection through bacteria hidden under the fingernails. Additional benefits of nail hygiene include preventing fungal infections under the nails, reduced risk of ingrown nails, and promoting proper nail growth. Therefore, proper cleaning under the fingernails and keeping the nails trimmed using clean tools are essential practices. Another benefit of properly trimmed nails is the minimized risk of lacerations that can result from a patient using unkept nails to scratch themselves or others.

Oral Cavity

Good oral hygiene aids in maintaining the mouth, gums, lips, and teeth. Regular teeth brushing removes plaque, bacteria, and food particles to prevent tooth decay. These measures also massage the gums, help break up tissue or bacteria, increase blood flow, and relieve discomfort caused by unpleasant odors and tastes. Proper oral hygiene promotes digestion and gum health, and it can affect one's overall health status. For instance, bacteria found in gum disease from poor oral practices can travel through the body, triggering infection and inflammation in heart valves. Good oral hygiene can also provide a patient with a sense of well-being and positive self-esteem, resulting in improved mental health. A condition expressed by foul-smelling breath, **halitosis**, can be considered embarrassing and impede someone's desire to speak or smile. Without adequate oral care, patients who are taking nothing by mouth (NPO) can experience negative outcomes that include aspiration pneumonia. Those patients who are NPO or on ventilators need frequent oral care to prevent ventilator-associated pneumonia. Oral hygiene can stimulate an appetite by increasing salivary flow, which supports proper chewing to break down food. Proper oral hygiene also prevents diseases such as gingivitis or periodontitis, which will be discussed later in this chapter.

LIFE-STAGE CONTEXT

Life Span Considerations for Older Adults

As the body ages, there is a decrease in saliva production, which can lead to dry mouth, tooth decay, a sore throat, and difficulty swallowing. Saliva contributes to the overall oral health by washing bacteria and food particles from the mouth. Maintaining oral hygiene as a patient ages is especially important and may require more frequent brushing at home. For example, the caretaker or older adult may want to add oral care after meals in addition to morning and night cleanings. Good oral hygiene practices promote the preservation of the older adult's ability to eat

by promoting the production of saliva to stimulate the appetite. In addition, proper oral hygiene maintains oral health and dentition to be able to chew and digest food. Because the saliva contributes to overall oral health by washing food particles and bacteria from the mouth, proper oral hygiene promotes dental health and maintains dentition. The better oral health patients have throughout their life, the greater the probability that these individuals will have functioning teeth with aging. To promote good dental hygiene practices, it is important to educate and encourage patients in establishing dental care routines. These practices include proper denture hygiene, such as cleaning dentures with a denture brush daily followed by placing the dentures in a cleansing soak overnight.

Perineum

Perineal care includes the genital and rectal areas of the body. Because the perineal area is warm, dark, and moist, these areas become an optimal breeding ground for bacteria. Good perineal hygiene prevents infections such as urinary tract infections, removes discharges, eliminates bad odor, promotes comfort, alleviates itching, and reduces the risk of chafing and skin rashes. Perineal hygiene is of particular importance during menstruation, after bowel movements, postpartum, and when hemorrhoids are present.

LINK TO LEARNING

The Centers for Disease Control and Prevention (CDC) has a quick reference for hygiene and personal hygiene facts, tips, and other resources (https://openstax.org/r/77HygieResource) and is a great source to share with patients to aid with patient education and self-care.

Hygiene-Related Diseases

Poor hygiene can include infrequent bathing or washing of hair, inadequate oral care, wearing soiled clothing, and untrimmed or dirty nails. Poor hygiene can result in infections as well as various hygiene-related diseases, such as tooth decay, scabies, pinworm infection, ringworm, trachoma, otitis externa (swimmer's ear), urinary tract infection (UTI), sepsis, gingivitis, and periodontitis.

Many diseases and conditions of the body systems can be prevented or controlled through regular hygiene practices. These practices include brushing teeth and routinely washing parts of the body and hair with soap and water. Implementing and encouraging regular body washing and oral care can prevent the spread of hygiene-related diseases outlined in Table 25.1.

Body System	Hygiene-Related Disease or Condition	Image
Integumentary	**Scabies** is a contagious skin infestation caused by a burrowing mite.	(credit: "ScabiesD03" by Unknown/Wikimedia Commons, Public Domain)
	A **pinworm** is an intestinal worm that usually spreads when an infected individual scratches the anal area and eggs get under the fingernails.	(credit: "Threadworm" by Erich Gasboy/English Wikipedia, Public Domain)
	A **ringworm** is a highly contagious fungal infection of the skin or scalp.	(credit: Untitled by Centers for Disease Control and Prevention, Public Domain)

TABLE 25.1 Common Diseases Caused by Poor Hygiene

Body System	Hygiene-Related Disease or Condition	Image
	An infestation with lice, easily spread in crowded areas or where people are in close contact is called **pediculosis**.	(credit: Untitled by James Gathany/Centers for Disease Control and Prevention, Public Domain)
Digestive	When the outer surface of a tooth decays as a result of bacteria, this is referred to as **tooth decay**.	(credit: "Oral Rehabilitation and Management for Secondary Sjogren's Syndrome in a Child" by Unknown/Hindawi, CC BY 4.0)
	The inflammation of the gums, or gingivae, is called **gingivitis**.	(credit: modification of work "Gingivitis-before-and-after" by Wikimedia Commons, CC0)
	Marked inflammation of the gums that also involves degeneration of the dental bone and tissues is called **periodontitis**.	(credit: modification of work "Periodontitis 01" by Francisco B. Teixeira, Miki T. Saito, Filipe C. Matheus, Rui D. Prediger, Elizabeth S. Yamada, Cristiane S. F. Maia, Rafael R. Lima1/Wikimedia Commons, CC BY 4.0)

TABLE 25.1 Common Diseases Caused by Poor Hygiene

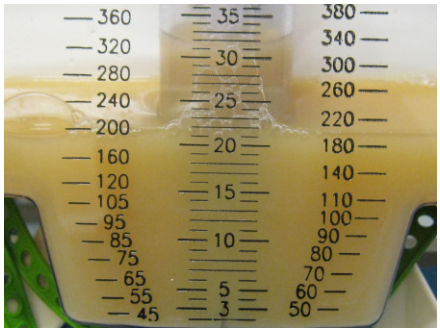
Body System	Hygiene-Related Disease or Condition	Image
Sensory	Swimmer's ear, **otitis externa**, is an infection of the outer ear canal that runs from the eardrum to the outside of the head and is often caused by water remaining in the ear after swimming.	(credit: "Otitis externa" by Klaus D. Peter/ Wikimedia Commons, CC BY 3.0)
	Bacterial infection of the eyes is called **trachoma**.	(credit: modification of work by Tim Kubacki/Flickr, CC BY 2.0)
Urinary	A **urinary tract infection (UTI)** is an infection of any part of the urinary system: urethra, bladder, or kidneys.	 (credit: "Pus in urine in a severe urinary tract infection" by John Campbell/Flickr, Public Domain)

TABLE 25.1 Common Diseases Caused by Poor Hygiene

Many hygiene-related diseases can continue to progress if left untreated. For example, gingivitis can be treated and resolved. However, untreated gingivitis can lead to periodontitis, which is a severe stage of gum disease. As periodontitis worsens, holes form around the teeth, forming pockets. The infection and pockets can deepen as the jaw deteriorates until teeth become loose and fall out. This type of infectious process can even lead to an earache. However, with proper oral hygiene and dental care, both gingivitis and periodontitis can be prevented or resolved.

Hygiene's Impact on Mental Health

Poor hygiene can be a sign of self-neglect and is often accompanied by depression or other mental disorders. Those with obsessive-compulsive disorder may overindulge in hygiene practices, which can take up much of their time as well as lead to skin breakdown or pain, depending on their compulsions. As previously discussed, poor oral hygiene can lead to tooth decay or bad breath. This can have a negative impact on self-esteem as one may be embarrassed

to smile or socialize with others.

Good hygiene and self-care practices can improve mood, decrease stress levels, provide a sense of well-being, and prevent or limit anxiety. These measures can also boost an individual's self-esteem and confidence. Good hygiene also supports a positive impact on relationships as hygiene impacts attraction and physical intimacy.

REAL RN STORIES

Assisting with Hygiene

Nurse: Stephanie, RN
Clinical setting: Acute care hospital
Years of experience: 5
Facility location: Texas

One day, I walked in to perform a shift assessment on a patient. I noticed that the patient appeared gloomy or worried. I asked her if she would like to discuss what seemed to be worrying her. She stated that her daughter was coming to visit her for the first time since admission, and that her daughter had never seen her ill before, and that she was worried about her appearance. I asked what time her daughter was arriving and if she would like to have a bath before the daughter arrived. The patient appeared excited and stated that a bath would be great. The patient suggested a time for bathing, as well as what preferences she had in assistance with the bath. I returned with towels, soap, shampoo, lotion, a comb, a toothbrush, and toothpaste. The patient required minor assistance, so I helped her with the bath, washing the areas she couldn't reach, and styling her hair. Upon completion, the patient was smiling and even making jokes. She told me she felt better after the bath and was now looking forward to, instead of dreading, the visit from her daughter.

25.2 Factors Affecting Hygienic Practices

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe population differences contributing to personal hygiene practices
- Identify physical factors impacting personal hygiene practices
- Identify psychological factors impacting personal hygiene practices

Hygiene measures and practices can promote health and prevent disease. These measures and practices may differ among various groups and people. It is important to remain culturally sensitive when encountering preferences that may differ from your own. The term cultural sensitivity is defined as recognizing and acknowledging that cultural differences exist among people and showing respect and appreciation of others' beliefs, values, practices, and perspectives. Respecting patient differences and preferences in hygiene practices while remaining unbiased is essential to the nursing practice. Nurses must also remember to provide care and education to patients in a nonjudgmental manner.

Population Differences in Hygiene Practices

Cultural practices or behaviors, socioeconomic status, developmental level, and personal preferences are factors that influence an individual's hygiene practices. These factors may differ greatly from one individual to the next. Understanding these differences and factors that impact how an individual practices personal hygiene is important as a nurse. Nurses may need to modify care and education to meet the needs of the individual patient.

Cultural Preferences

Cultural factors can strongly influence hygiene practices and patient preferences. Identifying those variations and their impact on a patient's personal hygiene is crucial. Nurses can identify cultural variations by asking the patient about their normal hygiene routines. The nurse should also explain that the reason for asking is not to be offensive, but rather to understand their practices, reminding the patient about the impact hygiene can have on an individual's physical and mental health. The nurse may need to ask specific questions such as, "How do you clean and take care of your body?" or "Tell me about your oral hygiene routines."

Cultural preferences may impact hygiene practices in terms of frequency and the type of products used. For example, people in some cultures place a high emphasis on daily bathing; otherwise they feel unclean. There are other cultures in which people may bathe only once a week. In addition, there are some cultures that also consider the use of products to mask body odor essential, while other cultures may deem those products as unsafe and view body odor as pleasant rather than unpleasant. Learned behaviors, such as touch, are also culturally significant. Some cultures may find touch offensive, which is important for the nurse to remember. Asking for permission before touching a patient when helping with hygiene practices is crucial to remember as well. The nurse should keep in mind that some cultures practice communal versus private bathing. Some cultures may prefer the same sex nurse assist with hygiene. Nurses are not to stereotype hygiene preferences based upon one's culture; rather, nursing personnel should ask the patient about their preferences and beliefs to provide care that aligns with the patient as an individual.

CULTURAL CONTEXT

Cultural Considerations and Personal Hygiene

Personal hygiene is especially important to East Indian Hindu culture. To many individuals from this culture, a daily bath is a religious duty. Some Hindus believe that bathing after a meal will result in an injury. Some Hindus also believe water that is too hot will injure their eyes. When preparing a bath, these persons may also believe that hot water can be added to cold water but not vice versa. Once the individual has completed the bath, they must carefully and thoroughly dry the body. Personal hygiene practices can differ among individuals and communities, even within the same religious group. Additionally, modern lifestyles and urbanization may influence personal hygiene habits that differ from the traditional cultural habits. For instance, cultural diffusion is the spreading out and merging of pieces from various cultures. This type of cultural shift is a common practice in today's ever-evolving society. Cultural appropriation, which is the exploitation of another culture's religion and/or cultural traditions, can be found offensive by some and should be avoided by the nurse. Understanding and respecting these cultural and religious practices is essential for providing culturally sensitive care and fostering positive interactions with people from the East Indian Hindu culture.

Socioeconomic Status

A person's socioeconomic status and financial resources often influence the type or extent to which hygiene is practiced. An individual's socioeconomic status and finances often impact the resources available. Financial limitations may impact the ability to obtain clean clothing or toiletries but could also influence water usage or access. Sometimes a person may have to make a choice between buying food to feed their family and purchasing personal hygiene products. Another example of financial limitations is homelessness. An individual may only be able to access a public bathroom, which limits choices to the type of soap and water that is available. Oftentimes, a public bathroom has only a sink with no shower or privacy. Therefore, the person experiencing homelessness is limited to how much of their body can be cleaned at one time.

Developmental Level

Hygiene practices are behaviors that most people learn as children from family members or others surrounding them. Those behaviors may include frequency and/or time of day in addition to feelings of modesty and nudity. Infants are dependent upon others for hygiene needs, but as children grow into adolescents, they may become more concerned with personal appearance while adopting individual practices. For example, adolescents may become aware of their body odor and develop preferences for using deodorants or body sprays. The teen may even acknowledge the need to bathe more frequently and make an autonomous choice to practice such a regimen. Adolescents also tend to prefer privacy, performing independent hygiene rather than in the presence of others. Therefore, hygiene education may be impacted when a parent is present. The nurse may need to ask the parent to step out of the room in order to offer privacy for the young adult, properly identify preferences, and provide any needed education.

A person's developmental level can negatively impact hygiene practices if the ability to understand proper hygiene practices is impaired or limited. A child who wants to be independent may want to perform their own hygiene but may not be able to effectively apply the proper measures to achieve this goal. Older adults may experience mobility

limitations that impact the frequency of bathing or ability to reach all areas of the body.

Personal Preference

Personal preference is a significant factor in a person's hygiene practices. Considering a person's preferences when scheduling or aiding with hygiene is important. Some preferences may include bathing in a bathtub versus using a shower, morning bathing versus evening bathing, and the types of soaps, shampoos, conditioners, toothbrushes, toothpastes, cloths, or loofahs used to facilitate the individual's body cleaning. A person's sexuality and self-concept may also impact their hygiene practices. For example, sexually active women may use a variety of feminine hygiene products after intercourse to promote cleanliness.

Frequency of hygiene practices are influenced by a patient's personal preferences, possibly stemming from cultural influences, social practices, or hygiene education. Some people prefer to bathe daily, wash their hair every other day, and perform oral care twice a day. Still others may prefer a different frequency schedule. Hair and nail care frequency preferences may depend on nail length or appearance, which a person may use to gauge when they feel that care is warranted. For example, a person who prefers their nails a certain length may use nail length as their cue to perform nail hygiene. Hair preferences may also vary among individuals. Some people prefer the hair a certain length and will use hair length as a cue to get a haircut. Some individuals may prefer their hair to be free of oils and will use the level of oil in the hair as a cue to wash their hair. Also, some people prefer to have a clean-shaven face and will shave or trim the facial hair to keep it at the desired length.

The timing of hygiene practices is also influenced by a patient's personal preferences. Some patients prefer bathing at the beginning of the day to perk themselves up while others prefer the end of the day, finding bathing to be relaxing instead. Oral care timing preferences may include upon waking, prior to sleeping, or even after meals. For example, a person with braces may perform oral care after every meal to decrease food build up and odors. In the hospital setting, the timing may also be impacted by any tests or procedures scheduled for the patient. This timing could be due to the required prewashing with or without specialized products prior to certain diagnostics.

PATIENT CONVERSATIONS

What If You Think Your Patient Is Refusing a Bath?

Scenario: A medical-surgical nurse was completing rounds to assess patients' hygiene needs. The nurse notices their 62-year-old patient had an odor, food stains on his face and gown, and soiled hair.

Nurse: Hi, Mr. Thomas. I hope you enjoyed your breakfast. Would you like to schedule a bath this morning?

Patient: Well, no. I only like to bathe at night. I like to be clean before I get into bed. My mom always told me when you go to bed without a shower, you're taking your whole day to your sheets.

Nurse: Okay, Mr. Thomas. I understand. I will make a note of your request, so that the night shift staff can assist you with your bath.

Scenario follow-up: The nurse pulls up the patient's chart in the patient room to document the patient's request and noticed that for the last three days, the patient had refused a daytime bath. There was no documentation of the patient's request for a nighttime bath, so the nurse wondered if the patient was refusing a bath overall.

Nurse: Mr. Thomas, have you told any of the other nurses that you prefer a nighttime bath?

Patient: Well, the first day I just told them no, but I did tell them on the second day I was here that I like nighttime baths. The night nurse never asked me about it though. I just assumed they were too busy.

Nurse: I am sorry about that. I just put in your request for a nighttime bath in the computer and will also make a note on the bath schedule at the charge nurse's desk. We can always do a bath this morning to get you caught up if you'd like.

Patient: No, dear. I can wait until tonight. I wouldn't mind just washing my face for now though.

Nurse: We can absolutely do that. Would you like a new gown in the meantime as well?

Patient: Sure. I would like that in case anyone comes to see me today.

Nurse: Okay, great. Is there anything else you would like to do this morning for hygiene?

Patient: No. I already brushed my teeth this morning.

Nurse: Okay. I will get your bath set up for you tonight. Is there anything you need before I leave the room?

Patient: No, I think I am good.

Nurse: Okay, well I will send in Suzie (unlicensed assistive personnel, UAP) to come help you with washing your face and getting you a new gown. Let me put your call light within reach, and you can always call us if you need us while we aren't in here.

Patient: Thanks a million.

Scenario follow-up: The dayshift nurse made a note on the bath schedule at the nurse's station and in the patient's chart. The UAP helped the patient get set up to wash his face and provided the patient with a new gown. At shift change, the nurse also informed the night shift nurse of the patient request. The patient received his bath that night and his linens were also changed. The charge nurse was also aware of the situation and provided education to all nurses to ensure they are marking patient preferences in the chart and on the bathing schedule as well as communicating any special requests to the appropriate shift nurses to ensure patient requests are being met.

Physical Factors Affecting Personal Hygiene

A person's physical condition will greatly impact personal hygiene. Mobility status and health state are important for a nurse to identify when caring for a patient and planning the individual's hygiene care.

Mobility Impairment

People with mobility impairment have limited hygiene measures and options. For instance, paralyzed patient may require a bed bath performed by another person. Identifying the best practices for this patient and a hygiene schedule to protect their skin, increase comfort, and control odor is important. Providing a bath every day ensures a comprehensive skin assessment can be conducted, and taking extra steps to reposition more frequently will promote circulation as well as improve skin integrity.

Health Status

The status of a person's health plays an important role in any plan of care. Injury, surgery, or disease can diminish an individual's capability or the desire to perform hygiene. With hygiene, a patient in the late stages of an illness may lack the energy or dexterity to perform their own personal hygiene. Some diseases may incapacitate or exhaust a patient, thus warranting the need for the caregiver to perform all aspects of this practice. For example, a person with serious pulmonary conditions may not be able to tolerate activities and may require a great deal of assistance.

Psychological Factors Affecting Personal Hygiene

Psychological factors that may affect personal hygiene include cognitive diseases as well as an individual's mental health status. The psychological factors will impact a person's ability to perform hygiene as well as the patient's motivation for or memory of these practices. It is imperative the nurse asses for any psychological factors that might inhibit a person's personal hygiene habits.

Cognitive Diseases

Some cognitive diseases or disorders that may affect personal hygiene include Alzheimer disease, attention deficit disorder, autism, intellectual disabilities, substance use disorder (SUD), and multiple sclerosis. Careful consideration by the nurse is necessary when planning hygiene for persons with any type of cognitive diseases or disorders due to the impact on a person's memory, focus, visual perception, abstract reasoning, and ability to learn or perform hygiene practices. For example, a person with a developmental disorder may struggle to learn the importance of self-care as well as how to perform the task. Patients with Alzheimer disease may lose the ability to remember to perform hygiene, struggle with emotions, and become agitated.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize and Analyze Cues

Before recognizing cues, nurses must make sure enough information about a patient's situation has been gathered and assessed before interpreting the information and developing a plan of care. For example, an individual with Alzheimer disease may struggle to perform hygienic activities. This person may also struggle to regulate emotions, becoming upset or embarrassed about being undressed in front of someone else. The patient may feel rushed or confused when being coached in performing various hygiene measures. The nurse must observe the patient and recognize the individual's Alzheimer disease stage of progression. In addition, the nurse must analyze the person's cues and assess the patient's ability to perform hygiene. A person's readiness to receive assistance in order to develop the patient's individual plan of care must also be considered.

Mental Illness: Depression

Hygiene can be greatly impacted by depression. People with depression may struggle with self-esteem and the motivation to perform hygiene measures. Depression may cause fatigue and cognitive effects such as negative thought patterns, memory problems, and brain fog. Individuals with depression may also struggle with executive dysfunction that impacts their ability to maintain hygiene and carry out the practices.

Body Image

Body image can also impact hygiene. People with depression often have a negative body image or do not care about their image. Those individuals with a negative body image may possess this image due to body shape, body size, or feelings of being ugly. A negative self-image can lead to stress regarding the undressing involved in the process of bathing. Often, patients experiencing this situation will avoid normal hygiene practices. The person with a negative body image may notice an improvement in self-esteem after performing hygiene or may lack the desire to perform hygiene. Those people with a positive body image may have the drive to establish and commit to a good hygiene routine in order to maintain the image of themselves in their mind.

25.3 The Nurse's Role in Hygiene

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the steps for assisting with patient hygiene
- Analyze differences related to hygiene in the older adult
- Recognize how nurses can use education to promote healthy hygiene habits

The nurse must assess the patient's preferences, physical limitations, and cognitive status in order to analyze, develop, and promote a hygiene and health plan of care. Patients who are completely independent, require some assistance, or are fully dependent on the nurse or nurse's assistant to complete hygiene practices are all factors needing consideration. A nurse's priority when scheduling hygiene is to ensure the patient's safety. This section will focus on the steps for assisting patients with hygiene, the differences related to hygiene in older adults, and how nurses can promote healthy hygiene habits through education.

Steps for Assisting with Patient Hygiene

When assisting the patient with hygiene, the nurse must integrate the individual's preferences into the plan of care. Determining the patient's normal practices through inquiry are variables that influence hygienic practices. Those variables may include the person's health status, physical limitations, mental health state, cultural beliefs, and personal preferences. The nurse must also assess the appropriateness of these practices to conclude whether the patient has the attitude, skills, resources, and knowledge to carry out the measures independently or if assistance is required for this purpose. The nurse performs a physical assessment to determine the adequacy of the patient's hygiene practices. For the recognized practices to be deemed inadequate, a distinct health threat must exist. For example, upon examining the oral cavity, if gingivitis or periodontitis is visible, the patient may be at a higher risk for conditions such as heart disease, stroke, arthritis, and diabetes if left untreated.

For patients with intravenous (IV) access, the bag of IV fluids and IV tubing may be threaded through the sleeve of

the gown to keep the system intact. There are covers available to keep the site dry during bathing. Dressing changes for the IV must follow facility protocols. Finally, the nurse must try to preserve the patient's privacy throughout the bathing process. To accomplish such privacy, a nurse should reveal only the areas about to be cleaned and keep the rest of the body covered, ensuring the door and/or curtains remain closed. The nurse needs to encourage the individual to perform all tasks as independently as appropriate. Using the bath or various hygienic procedures is an excellent opportunity for the nurse to assess the person's skin, cognition, and mobility status. These simple tasks can reveal subtle changes in the patients' status and allow for early intervention.

In addition, whether the individual is conscious or not, the nurse or UAP must introduce themselves and always inform the patient of what is about to happen and why. This will hopefully prevent any surprises, obtain consent, and complement the nurse's professional demeanor. Research suggests that unconscious patients may hear what others are saying. Nurses who continue to introduce themselves and explain procedures before proceeding will decrease the stress on the individual through their journey to consciousness in a strange and foreign environment.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs.

The nurse will:

- Integrate understanding of multiple dimensions of patient-centered care: information, communication, and education; involvement of family and friends; patient/family/community preferences and values; coordination and integration of care; physical comfort and emotional support; and transition and continuity.
- Assess own level of communication skill in encounters with other members of the healthcare team as well as patients and families.
- Communicate patient values, preferences, and expressed needs to other members of the healthcare team.
- Communicate care needed and provided at each transition in care.
- Value continuous improvement of own conflict resolution and communication skills.
- Describe strategies to empower patients or families in all aspects of the healthcare process.
- Respect patient preferences for degree of active engagement in care process.

Delegation Considerations

The execution of hygiene practices may be delegated to a nurse's assistant, UAP, or a licensed vocational nurse. The term delegation in nursing is shifting the responsibility of tasks to another person while remaining accountable for the outcome. For example, the nurse may delegate a stable patient's bath to a UAP if and only if the bath is meant for cleanliness and not for assessment of skin or patient condition. Safe and proper delegation allows the registered nurse to attend to more complex patient care needs, such as medication administration or head-to-toe assessments, helps control cost for the organization and advances the skills of nursing assistive personnel. The patient's needs and health status plus the qualifications of the person the task is being delegated to must all be carefully evaluated. The nurse must have the proper qualifications prior to delegating: skills, experience, competency, and education. The person the nurse is delegating the tasks to must also have adequate education, skills, training, experience, and evidence of competency. Table 25.2 summarizes the National Council of State Boards of Nursing (2016) Five Rights of Delegation.

Right	Definition	Example
Right task	The activity coincides with the person's job description or is part of the written policies and procedures of the practice setting.	The nurse can ask a UAP to brush a patient's teeth but not to give medication.
Right circumstance	Appropriate patient setting, available resources, and other relevant factors are considered.	The nurse may ask the UAP to provide a bed bath for a stable patient. The nurse should ask for the UAP to not provide a bed bath when the patient is in severe physical distress, as the nurse should perform the patient's hygiene themselves.
Right person	Delegating the right task to the right person to be executed on the right person	The nurse may ask a unit secretary to call for supplies needed for the bath, such as special surgical wipes, but not ask the unit secretary to bathe the patient.
Right directions and communication	Clear, concise description of the task, including its objective, limits, and expectations	The nurse asking to be notified if the blood pressure is "abnormal" following the patient's bath is not appropriate. The nurse should ask the UAP to notify them if patients' blood pressure is above 130/80 or below 100/60 after the bath, in order to give clear expectations.
Right supervision and evaluation	Apt monitoring, evaluation, intervention, when necessary, and feedback	The nurse may ask the UAP to chart a patient's response to hygiene care if the patient is alert, awake, and oriented because the outcome is expected. The nurse may not ask the UAP to evaluate a patient's response to hygiene care if the patient is confused and unstable because the outcome is unexpected, and this type of evaluation is out of their scope of practice.

TABLE 25.2 **The Five Rights of Delegation**

Oral Care

Care of the oral cavity, **oral hygiene**, helps preserve a healthy state of the lips, gums, teeth, and mouth. Brushing the teeth removes plaque, food particles, and bacteria as well as massages the gums and alleviates any discomfort that may be caused from tastes or unpleasant odors. Patients should be encouraged to brush their own teeth when possible. Independent individuals should be offered supplies to also carry out personal hygiene needs as appropriate. If the patient is unable to do so independently, the nurse or appropriate delegate (i.e., the person who is delegated a responsibility by the nurse) will need to assist with or perform the oral care for this individual.

Patients who are unable to perform their own oral care may require care every one to two hours, if and as necessary. Individuals who are either unable to breathe through the nose or are mouth breathers will need more frequent oral care. More frequent care will ensure that the integrity of the oral mucous is maintained. The nurse must ensure that available suction equipment is available to prevent aspiration, raise the head of the bed to 30–45 degrees, use suction to remove excess fluid/secretions, routinely moisten the mouth, and apply lip balm to prevent lips from cracking.

Teeth should be brushed twice a day and the mouth should be rinsed with water after meals. The toothbrush should be soft-bristled and reach all the teeth. Automatic toothbrushes may be adequate substitutes for patients with arthritis or other conditions that impair their ability to brush adequately. Because the toothbrush cannot reach the areas between the teeth, flossing is recommended once a day to remove food particles and plaque. Water picks, pressured water spray units, and cone-shaped brushes may be used when patients are unable to use floss or perform their own oral hygiene. Toothpastes and other powders aid in the brushing process. Mouthwashes may also be used to reduce bacteria, plaque, tartar, and gingivitis. Many mouthwashes also freshen breath and can protect tooth enamel.

Denture Care

Artificial teeth not permanently implanted, called **dentures**, are the patient's personal property and must be handled with care. Dentures should soak in a labeled, enclosed cup to be stored when not being worn. Many patients do not wear dentures when sleeping, and dentures must be removed for surgeries or other diagnostic procedures. Many patients also prefer to wear dentures as soon as wakening or coming out of a procedure to avoid embarrassment due to feeling self-conscious without them. If the patient goes long periods of time without wearing the dentures, the gum line may change and affect the fit of the dentures. It is also recommended that dentures not be worn twenty-four hours a day, seven days a week. Patients are usually familiar with the necessary care of dentures to prevent infection and irritation, and prefer to perform denture care according to standard practice at home.

Eyes, Ears, and Nose

Special attention is given to care of the eyes, ears, and nose due to the sensitivity or these areas, and taking exceptional care to avoid injury is important. The nurse should ask the patient about any specific care the patient normally performs in relationship to the eyes, ears, and nose. For example, some people prefer using cotton swabs to clean the outer parts of the ears. The nurse should also be aware of any use of hearing or visual aids, such as eyeglasses, hearing aids, or contacts. The nurse should also ask the patient about any history or treatments of eye, ear, or nose problems.

The circular areas around the eyes are usually cleaned during the bath with the use of a clean washcloth, moistened with warm water. Soap may cause burning or irritation, so avoiding soap around the eyes is advisable. The eye should be cleaned from the inner to outer canthus. A separate section of the rag should be used each time to avoid the risk of spreading infection. If the patient has dried exudate (dried or crusty fluid) that is not easily loosened, try placing a damp gauze or cotton ball on the lid margins to loosen secretions. Avoid applying direct pressure over the eyeball as this may cause injury. Remove any exudate from the eyes carefully and as often as needed to keep the eye clean. Unconscious patients may require more frequent eye care due to the buildup of secretions from the absence of the blink reflex.

The ears are also cleansed during a shower or bed bath. The ear canal should be cleaned with a gentle rotation using a moistened washcloth. A cotton swab is useful for cleaning the pinna or outer aspects of the external ear. Educating patients to never use toothpicks, cotton swabs, or any other device to clean the internal auditory canal is important, as the tympanic membrane can easily be damaged through this action.

Care of the nose includes clearing secretions. Most patients are able to gently blow into a disposable paper tissue. The individual should avoid harsh blowing as this can cause pressure capable of injuring the nasal mucosa, sensitive eye structures, and the tympanic membrane. The patient should blow with both nostrils open to avoid forcing debris into the eustachian tubes. If the external nares are crusted, a warm, moist compress may be used to help soften and remove any exudate. A moist washcloth or cotton swab may be used to clean the opening of the nares but should never exceed past the nares to avoid injury.

Contacts and Glasses

Eyeglasses are often expensive and are the patient's personal property. Therefore, eyeglasses should be stored in a case or bedside drawer when not in use to prevent damage or loss. Eyeglasses may require special cleaning with the use of cloths made of soft microfiber, cleansing solutions, or lens wipes. Washcloths, paper towels, and tissue paper should be avoided because they can scratch the lenses.

Various types of contact lenses are available, ranging from daily, weekly, or even monthly use. Some patients may sleep in contact lenses, while others cannot or prefer not to leave these lenses in the eyes overnight. The nurse must assess the type of contacts the person wears and any preferred special care measures. Several products are available for lens care, such as saline solutions and hydrogen peroxide solutions. Most patients will prefer to care for their own lenses but should not wear these contacts if unable to independently insert and remove the lenses. Contacts should remain clean and sterile. Reusable lenses should soak in a solution of the owner's choosing when not in use to keep the lens from drying out. Hand hygiene when inserting or removing contacts is essential to prevent infection. A towel may be placed in the sink to prevent a dropped contact from accidentally falling into the drain.

Hearing Aids

Hearing loss is a common health problem. The ability to hear impacts a person's ability to communicate and react appropriately to things in their environment, and many patients have hearing aids (Figure 25.2). The care of hearing aids includes battery care, proper insertion, and routine cleanings. The nurse should determine the patient's normal method of cleaning the hearing aids. In addition, the nurse should assess the quality of the patient's hearing with the use of the devices to ensure effectiveness and functionality. The hearing aids should not be used when water exposure is a risk to avoid damage to the devices. When hearing aids are not in use, the devices should be labeled and stored in a case or a safe place to avoid damage or loss. The battery should also be removed or turned off when not in use to preserve the battery life. The hearing aids may be cleaned with a dry, soft cloth.

FIGURE 25.2 Hearing aids come in various styles. These supplemental devices work by using parts to amplify sound in an individual's environment and channel it into their ear. The parts include a microphone to detect the sound, an amplifier to make the sound stronger, a speaker to send the sound into the ear, and a battery to provide power to the electric parts. (credit: modification of work "HearingAidTypes" by Wikimedia Commons, Public Domain)

Hair

Hair care will depend greatly on the patient's preferences, culture, and physical and cognitive limitations. Hair should be shampooed as often as necessary or per individual preference. The brush and comb should be washed each time the hair is washed, or as appropriate. Prior to shampooing the hair, brush or comb the hair to stimulate the scalp and untangle hair. Whenever possible, encourage the patient to brush and wash their own hair. In the event regular shampooing is contraindicated for various conditions, bedside products such as foams, dry powders, or concentrates that do not require rinsing may be used. Shampoo caps are also available and should be warmed in the microwave if they are not stored in a warmer. Once the cap is on the patient's head, massage the hair and scalp to lather the shampoo per manufacturer's directions, and discard after use. Towel dry the hair after each type of cleansing, followed by combing and styling to the patient's preference. If the person requests, an electric razor can be provided. If a hair dryer is not appropriate or available, the hair should be covered with a towel until dry to minimize the individual becoming chilled. Some healthcare facilities, such as a skilled nursing facility, may have beauticians or barbers to assist with hair care but this does not dismiss the nurse of obligation.

Hair type should also be considered with hair care. For tightly curled hair, a wide-toothed comb is best to untangle the hair, working from the neckline to the forehead. This hair type may also prefer small braids that do not need to be undone for shampooing. Application of a lubricant oil should be applied to the braids to prevent hair breakage. Those individuals with alopecia and/or baldness should still cleanse and moisturize the scalp to prevent dryness. Dandruff may also be present and is not considered contagious or infectious. Dandruff and hair loss may be embarrassing for a patient, so the nurse must remain professional and preserve the person's dignity.

Nails

Nails may harbor bacteria, so maintaining nail care to prevent the risk of infection or injury from scratching is crucial. Nurses must follow the agency's policy related to nail care, as some facilities do not allow nail trimming by clippers. If allowed, nails should be trimmed straight across then rounded at the tips in a gentle curve. The nails should not be trimmed too short as the skin and cuticles may become injured. Hangnails, which are broken pieces of cuticle, should be cut off with cuticle scissors and not torn or ripped off. Cuticles should be gently pushed back, after softening by washing with warm water, using a terry cloth or blunt instrument. A moisturizer or emollient may be applied to the nails and cuticle to prevent hangnails. The underside of the nails should be cleaned with a blunt instrument or nail brush. Damaging the area where the underlying tissue and nail are attached by being forceful is discouraged. Once the care is completed, a massage to the hands using lotion may increase blood flow and provide comfort.

Feet

Feet also require special attention to prevent odors, injury, and infection. Poor care of the feet may result in conditions such as calluses, neuropathy, pain, ingrown toenails, or deformities (such as hammertoe). Feet may be cleaned in the shower or using a basin with tepid water and mild soap for bedside baths. The feet should not be soaked. Feet should be dried immediately after being washed. Lotion may be applied and massaged on the feet to promote circulation and provide comfort. In the presence of athlete's foot, an antifungal foot powder should be ordered and used for treatment. Toenails should also be kept short to minimize bacteria underneath the nail. Care of the toenails is very similar to the care of fingernails. In some facilities, only the registered nurse may be allowed to trim the toenails of patients with diabetes, using a nail file to reduce the risk of trauma or injury. The patient with diabetes may have reduced sensation in their feet and must be taught how to examine and care for the feet daily. Some patients may need to see a podiatrist for treatment of corns, calluses, or bunions. The nurse should also educate the individual or ensure the use of cotton socks for warmth and perspiration absorption, as well as the importance of properly fitting footwear to avoid complications.

LINK TO LEARNING

The ADA provides a reference for daily foot care tips (https://openstax.org/r/77FootCareTips) as diabetes can alter a person's ability to feel pain, heat, or cold in their feet. This leaves an individual susceptible to injury or infection. Therefore, it is essential that the nurse educates the patient on proper foot care.

Perineal and Vaginal Care

Care of the genitalia, called perineal care, is part of a complete shower or bath. Patients who are able to perform hygiene independently may prefer to cleanse on their own. Those persons not able to perform this practice independently may request someone of the same gender to assist with perineal care or a bath in general. This request must be communicated and followed as best as possible. Patients who require help may include those who have physical or cognitive limitations. Individuals who are postpartum, recovering from rectal or genital surgery, or have an indwelling catheter require meticulous care to avoid infection. Other instances that may also cause vaginal or perineal problems include douching, some sexually transmitted infection (STI), diabetes mellitus, and urinary or fecal incontinence. Maintaining a professional attitude, preserving the patient's dignity, ensuring privacy, and gaining permission to touch the patient is important when aiding in perineal care regardless of consciousness. The nurse needs to remember to always clean from the least contaminated areas to the most contaminated areas to prevent infection.

Sitz baths may also be used after childbirth, rectal surgery, or vaginal surgery. This treatment may also be used to relieve discomfort from a fissure or hemorrhoids. A sitz bath is most often performed on the toilet with a tub lining

the bowl. The tub is filled with three to four inches of warm, not hot, water. The patient will submerge the pelvic area for twenty to thirty minutes to aid in reducing inflammation. Other options for cleansing the perineal and vaginal areas of a patient who is postpartum include either a shower or sitting on a stool using a perineal irrigation bottle.

Catheter Care

Catheters come in many forms, such as internal (indwelling and Foley catheters) and external (wick and condom catheters). For patients with an indwelling catheter, powders and lotions should be avoided after cleaning. Betadine, antibiotic, or other microbial cleaners should be avoided at the urethral meatus. Catheter care is usually performed after perineal care and is usually ordered twice daily. Nurses should pay close attention to how long the catheter has been inserted and request confirmation from the provider to remove the catheter as soon as possible if it needs removal. Prompt removal and precise cleaning can help to avoid an associated infection. According to the CDC, catheter-associated urinary tract infection (UTI) have been cited as the number one healthcare-associated infection (HAIs) (Werneburg, 2022). Patients with fecal incontinence may require more frequent cleanings. Nurses wear clean gloves and perform hand hygiene before and after caring for the patient. The catheter should always be cleansed gently from the meatus outward using mild soap and running water. Each stroke should use a clean portion of the washcloth or disposable wipe.

LIFE-STAGE CONTEXT

Menstrual Hygiene

Patients who experience menstrual cycles will need proper menstrual hygiene. There are various products available such as pads, tampons, cups, sponges, and padded underwear or briefs. Some cultures practice free bleeding. Assessing the patient's preferences for the type of products normally used for these purposes is important. Sanitary pads and briefs should be changed every few hours or more frequently depending on the menstrual flow. Tampons should be changed every four to eight hours or more frequently with heavier flows. Menstrual cups should be cleaned daily after use and can be sanitized by rinsing thoroughly and boiling in water for one to two minutes or per manufacturer guidelines. Period underwear should be washed per manufacturer instructions. The risks associated with improper menstrual hygiene can lead to yeast infection, toxic shock syndrome, rash, irritation, and impaired skin integrity. The nurse must assess the patient's knowledge and preferences, as well as provide education about menstrual hygiene.

Additionally, addressing period poverty is vital. Period poverty refers to the lack of access to affordable and adequate menstrual hygiene products, facilities, and education. Those affected by period poverty may experience significant discomfort and health issues due to inadequate menstrual management. This can include severe menstrual cramps, which can be exacerbated by improper use of menstrual products, and increased risk of infections such as bacterial vaginosis or urinary tract infections, often due to the use of unhygienic or makeshift menstrual products. Poor menstrual hygiene can also lead to skin irritation, rashes, and fungal infections, as well as toxic shock syndrome from the misuse of tampons. Beyond physical health problems, period poverty can hinder participation in daily activities and education due to embarrassment, stigma, or the inability to manage menstrual flow effectively. Supporting menstrual health equity involves advocating for better access to menstrual products, providing educational resources, and promoting policies that address these disparities. Integrating awareness of period poverty into patient care ensures that all individuals have the necessary resources for effective menstrual management, helping to prevent health issues and supporting broader public health outcomes (Jaafar et al., 2023).

Special Focus on the Older Adult

Life span considerations for the older adult include age-related changes that require special focus and nursing strategies. Age-related changes include impaired physical mobility, impaired oral mucous membranes, and an increased risk for impaired skin integrity. Older adults are also more likely to become chilled when left uncovered during bathing. The room should be maintained at a warmer temperature, and drapes should be used during care to provide modesty and avert chilling. Older adults also may experience neurologic changes or impaired circulation that impede the ability to sense temperature changes in water. Using caution to prevent burns or injury to the skin is also important to remember. In addition, frequent bathing and use of soaps may have harmful effects on the skin.

Age-Related Changes

Impaired physical mobility related to aging includes decreased dexterity and muscle strength, chronic conditions that compromise functional mobility, and decreased range of motion. Some examples of chronic conditions that compromise functional ability include heart disease, diabetes mellitus, rheumatoid arthritis (RA), coronary heart disease, chronic obstructive pulmonary disease (COPD), and osteoarthritis. Patients with deficits after a stroke, Parkinson disease, or other neurologic disorders may also experience physical limitations.

Part of the aging process also includes a loss of elasticity, reduced blood supply to connective tissue, and degeneration of epithelial cells that lead to impaired mucous membranes. Older patients are also likely to have impaired oral mucous membrane due to the decreased production of saliva and medications that cause dry mouth. For example, decongestants, antidepressants, antihistamines, blood pressure medications, Alzheimer disease medications, analgesics, and diuretics may cause dry mouth.

Older adults are also at risk for impaired skin integrity due to the loss of elasticity, thinning of the epidermis and subcutaneous fat, and dryness caused by decreased activity of oil and sweat glands. The older adult's nails may become opaque, brittle, scaly, tough, or hypertrophied. These skin-related changes may also be visible in the feet. Older adults are at an increased risk of friction shear and pressure ulcers due to age-related skin changes and impaired mobility.

Nursing Strategies

Nursing strategies for patients with impaired physical mobility include ensuring patient safety. For example, grab bars, adequate lighting, and nonslip mats in the bathrooms should be available to reduce the chances of falling or injury. Providing frequent rest periods, and scheduling hygiene sessions after periods of rest can ensure the patient does not become overly exhausted. Older adults may benefit from adaptive hygiene devices such as a long-handled body sponge, shower chair, large or extended handled toothbrushes, and grab bars (Figure 25.3). Physical therapy, or exercise, and occupational therapy may also be needed to aid in activities of daily living and help patients retain their independence by improving their mobility and functionality.

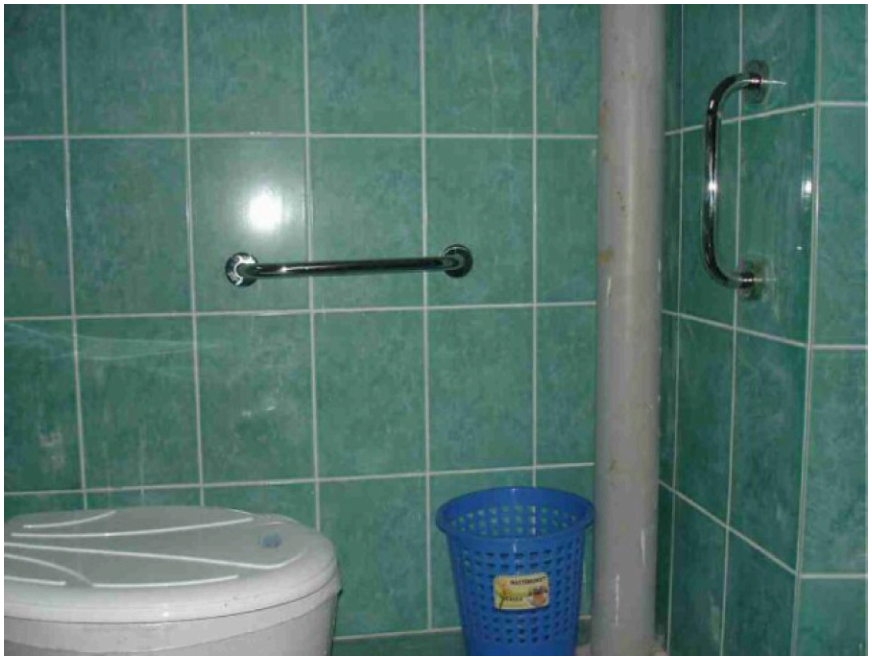


FIGURE 25.3 Grab bars are a great way to prevent falling in older adults who have balance issues. (credit: Untitled by Unknown/Flicker, CC BY 2.0)

Good oral hygiene measures may aid in the preservation of the older person's ability to eat and can also reduce the alteration in taste common with aging. Patients should be encouraged to have dental exams every six months and should avoid spicy, acidic, coarse, and sugary foods that may cause dental caries. Mouthwashes that contain alcohol should also be avoided. Nurses should also encourage or aid with brushing teeth with fluoride toothpaste twice a day. Dentures should be brushed twice daily and rinsed with cool water. Other strategies include rinsing the mouth after meals, examining the mouth daily to check for inflammation and lesions, and applying lubricant to lips.

Patients may have sugar-free gum or candies and salivary substitutes, such as mouth sprays, gel, swabs, dissolving tablets, or an oral rinse.

Maintaining skin integrity is essential to ensure the integumentary system is able to properly perform its functions of protection, sensation, heat regulation, excretion, secretion, and absorption. For example, the nurse can incorporate strategies for how hygiene can be tailored to keep the patient warm, such as keeping a blanket over the patient while exposing one body part at a time for personal care. The nurse can also perform bathing as quickly as possible and place a warm blanket on the exposed individual immediately after the bath. Because older adults are more susceptible to friction shear and other injuries, the bedding should be wrinkle free, clean, and dry. Draw sheets should be used when repositioning or moving patients to avoid skin injury as well. Water temperature for bathing should be monitored to ensure the temperature is tepid and not hot. Older patients who are able should use showers and avoid bathtubs as this method can dry out the skin. The skin should be rehydrated with lotions or emollients daily while avoiding excessive amounts. Any excessive amounts of lotions of emollients should be wiped off to avoid skin breakdown. Older adults should also be encouraged to drink hydrating fluids to aid in hydrating the skin. Because frequent bathing and the use of detergent soaps can be harmful to the skin, bathing should be regular but not every day and pH-balanced skin cleansers should be used.

Promoting Health through Education

One of the most essential roles nurses have in disease prevention and health promotion is through education. The nurse should assess a patient's knowledge about hygiene as well as individual cultural and personal preferences. The nurse should educate people on the importance of good hygiene practices. For example, promoting medical asepsis prohibits the growth of pathogenic microorganisms, which leads to decreased chances of infections. In addition, good hygiene can aid in preventing the spread of diseases to others, promote self-esteem, and boost mood. Once the nurse assesses the patient's knowledge and ensures understanding, the nurse should educate the person on the steps needed to perform hygiene to avoid infection or injury. The nurse should also assess a patient's ability to perform care independently via performing a head-to-toe assessment. The nurse should reinforce proper steps as needed while educating and giving instructions on the importance of diet and nutrition to promote healthy skin and mobility.

PATIENT CONVERSATIONS

What If Your Patient Does Not Have Adequate Knowledge about Oral Hygiene?

Scenario: Nurse walks into the newly admitted patient's room to determine hygiene needs. The patient is a college student that has not seen a dentist in a few years and has red, inflamed gums.

Nurse: Hi, my name is Marie, and I am going to be your nurse today. Do you mind verifying your name and date of birth?

Patient: My name is Sarah Milton, date of birth December 4, 2003.

Nurse: Thank you. I am going to ask you a few questions about your personal hygiene. Is that okay?

Patient: What is personal hygiene? Like how I do my private care? I'm confused.

Nurse: Personal hygiene is the self-care measures you would perform such as bathing, brushing and flossing your teeth, hair care, and nail care.

Patient: Well, I let my roommate do my nails, since she is in cosmetology school. I shower almost daily and wash my hair every other day. I brush my teeth a few times a week and never floss.

Nurse: Okay, when was the last time you saw a dentist?

Patient: I don't know, maybe two or three years ago. I was still in high school, and my mom made me go.

Nurse: Have you ever had cavities, gingivitis, or any other dental issues?

Patient: I do not know what gingivitis is. My gums bleed when I brush them, which is why I do not brush as much. I

remember the dentist made me use a special mouthwash once. I had several cavities as a kid. I think I had to get fillings at almost every visit.

Nurse: Gingivitis is inflammation of the gums. If left untreated, it can lead to periodontal disease that can ultimately lead to loss of teeth due to infection and deterioration of the gums. If infection entered the bloodstream, it could also increase the chances of stroke, heart attack, or other serious events. Signs of gingivitis include swollen gums, reddened gums, gums that bleed easily with brushing or flossing, bad breath, and tender gums. I know you said your gums bleed easily. Do you experience any of the other symptoms?

Patient: Yeah, my gums are pretty tender. I have never looked for the other things though.

Nurse: Okay, do you mind if I examine your mouth?

Patient: Sure.

Scenario follow-up: Upon examination, the nurse noted a foul odor, visible food particles in the patient's mouth, and reddened, swollen gums.

Nurse: You do have reddened, swollen gums with food particles present. Food left in between teeth can cause irritation and inflammation. Flossing will aid in the removal of food particles, plaque, and tartar. Seeing a dentist for examination and professional cleaning to remove plaque, tartar, and bacteria regularly will aid in the prevention of dental issues as well. I will go over oral care with you and demonstrate the steps to perform twice a day as well as rinsing your mouth after meals. I will also provide you with a mouthwash to use while you are here.

Patient: Okay, great. Thank you. My parents did not tell me any of this. I do not want my teeth to fall out.

Summary

25.1 Hygienic Practices

Hygiene measures can support health and prevent disease. Hygiene practices include but are not limited to the care of the skin, hair, nails, oral cavity, and perineal areas. The lack of adequate hygiene practices may lead to various hygiene-related diseases or infections such as lice (body, hair, and pubic), tooth decay, scabies, pinworm infection, ringworm, trachoma, swimmer's ear, urinary tract infection (UTI), gingivitis, and periodontitis. There are many benefits to adequate hygiene, such as preventing infection while preserving mental and physical health. Good hygiene and self-care practices may enhance mood, reduce stress levels, promote a sense of well-being, prevent or limit anxiety, boost an individual's self-esteem, and positively impact relationships.

25.2 Factors Affecting Hygienic Practices

There are various factors that impact a person's personal hygiene. Cultural practices, socioeconomic status, developmental level, and personal preferences greatly influence an individual's hygiene. These factors may differ from person to person. For instance, cultural preferences can greatly impact how a person performs hygiene in terms of products used, frequency, and touch. Socioeconomic status greatly impacts how hygiene is performed by an individual due to financial limitations, product availability, and access to bathrooms or water. Developmental level can impact personal hygiene throughout the life span. Children through older adults will experience changes in their bodies that may impact the skin, mobility, and effectiveness of performing personal hygiene. Personal preferences play a large role in someone's hygiene practices. Preferences may include timing, frequency, type of products used, use of bathtubs versus showers, nail length, hair length, and hair oiliness. Physical factors, such as a person's mobility status and health state, can potentially interfere with personal hygiene practices throughout one's life. Psychological factors, such as confusion, depression, mental health crises, or even stress from a negative self-image can also influence personal hygiene or prevent an individual from taking care of their body. Remembering to remain nonjudgmental when speaking with patients about personal hygiene practices and preferences is important for nurses. Keep in mind that hygiene or lack of hygiene can be indicative of a person's mental state.

25.3 The Nurse's Role in Hygiene

Prior to assisting with hygiene and health promotion, the nurse must analyze the patient's preferences, ability to perform or if and how much assistance is needed, and physical and cognitive status. The nurse must also consider the Five Rights of Delegation prior to delegating tasks: right task, right circumstance, right person, right directions and communication, and right supervision and evaluation. Hygiene practices should always include a baseline assessment to check for lesions, infections, secretions, or other impairments or abnormalities. The patient's privacy and dignity should also be maintained. The patient's dignity can be preserved by a professional, matter-of-fact attitude. Oral care may include flossing teeth and brushing teeth, gums, tongue, cheeks, and roof of mouth. It may also include denture care and mouth rinses. Careful cleaning is necessary for the eyes, ears, and nose to preserve their sensory functionality. Care may also be needed for contact lenses, eyeglasses, or hearing aids. Hair care will depend greatly on the patient's preferences and hair type. Nail and foot care should be carefully provided to avoid injury, and nails should be trimmed short to prevent injury or infection. Perineal and vaginal care must be carefully provided to avoid infection or other vaginal and perineal problems. Life span considerations for the older adult include age-related changes that require special focus and nursing strategies. Age-related changes include impaired physical mobility, impaired oral mucous membrane, and the risk for impaired skin integrity. Nurses can promote health through education by ensuring or reinforcing a patient's knowledge, ability, and skills to carry out hygiene tasks.

Key Terms

dentures artificial teeth not permanently implanted
gingivitis inflammation of the gums or gingivae
halitosis persistent foul-smelling or bad breath
hygiene the measures or practices conducive to preserving health and preventing disease, particularly through cleanliness
medical asepsis techniques and procedures used to decrease the potential for the spread of microorganisms and infection

oral hygiene care of the oral cavity
otitis externa an infection or inflammation of the external ear canal, usually caused by water exposure or bacterial/fungal infections
pediculosis lice infestation
periodontitis marked inflammation of the gums that also involves degeneration of the dental bone and tissues
personal hygiene self-care measures one performs to preserve their own health
pinworm an intestinal worm that usually spreads when an infected individual scratches the anal area
ringworm a fungal infection of the skin or scalp
scabies a contagious skin infestation caused by a burrowing mite accompanied by extreme itching
sebum an oily secretion of the sebaceous gland
skin breakdown the damage or injury that occurs to the skin and underlying tissue due to prolonged pressure, friction, shear, or moisture
tooth decay visible cavities or holes in the outer sruface of a tooth or enamel
trachoma a bacterial infection of the eyes
urinary tract infection (UTI) a bacterial infection affecting any part of the urinary system

Assessments

Review Questions

1. A nurse caring for patients in a long-term living facility knows that providing good oral hygiene is an essential part of nursing care. What is the benefit of providing oral hygiene?
    a. It eliminates the need for flossing.
    b. It compensates for poor nutrition.
    c. It promotes a sense of well-being.
    d. It decreases oropharyngeal secretions.

2. A nurse is scheduling hygiene for patients on the medical-surgical unit. What should be the nurse's priority consideration when arranging a patient's personal hygiene?
    a. where the hygiene fits in with the nurse's schedule
    b. the best time for the patient care technician to aid with the patient's hygiene needs
    c. the patient's personal hygiene practices and preferences
    d. the outside temperature

3. A patient presents to the primary care office with complaints of constant itching of scalp and hair. The patient states that they recently noticed insects in their hair after spending the day volunteering at a shelter. What does the nurse know the patient is more than likely experiencing?
    a. pediculosis
    b. dry scalp
    c. folliculitis
    d. gingivitis

4. What is true about older adults' saliva?
    a. Older adults have a decreased production of saliva.
    b. Older adults have an increased production of saliva.
    c. Older adults have no change in saliva production.
    d. Older adults have a change in the color of their saliva.

5. What is another term for the clean technique?
    a. personal hygiene
    b. surgical asepsis
    c. medical asepsis
    d. sepsis

6. What is *not* an example of hygiene personal preferences?

a. time of day
b. frequency
c. shampoo brand
d. financial status

7. What can being aware that cultural differences and similarities between people exist without assigning them value be defined as?
a. cultural sensitivity
b. cultural insensitivity
c. cultural diffusion
d. cultural appropriation

8. A 72-year-old patient with Alzheimer disease is a new admission to a long-term facility. The patient presents with an odor, soiled clothing, and greasy hair. What does the nurse need to consider prior to scheduling a bath for this patient?
a. the last time the patient told the nurse they had a bath
b. where the patient is in their disease progression
c. the temperature outside
d. the patient's financial status

9. When aiding a patient who is paralyzed and bedridden, what does a nurse need to recognize that the hygiene will not do?
a. decrease comfort
b. increase comfort
c. control odor
d. protect the skin

10. What is the top priority with nursing strategies and hygiene?
a. patient ethnicity
b. safety
c. patient-to-staff ratios
d. when the patient will discharge

11. A 77-year-old patient with Alzheimer disease is a new admission to a long-term facility. The patient appears under distress during bathing. What guidelines should the nurse consider?
a. the last time the patient said they had a bath
b. demanding the patient take a bath
c. playing calming music and reassuring the patient
d. scrub hard and fast

12. What should the nurse do prior to providing patient education about health promotion?
a. Gather information online about the patient's ethnicity.
b. Assess the patient's current knowledge.
c. Tell the patient the nurse's personal preferences.
d. Tell the patient they have to perform hygiene a certain way.

13. When the nurse is performing perineal care on an uncircumcised male patient, what is not a step in the process?
a. Gently grasp the shaft and retract the foreskin.
b. Wash the tip in a circular motion.
c. Replace the foreskin.
d. Leave the foreskin alone.

Check Your Understanding Questions

1. Describe the benefits of good skin hygiene.
2. Describe hygiene-related diseases.
3. Describe how a person's socioeconomic status can impact personal hygiene.
4. Compare and contrast the physical and psychological factors that affect hygiene.
5. Describe the Five Rights of Delegation.
6. Describe age-related changes and nursing strategies related to impaired mucous membranes.

Reflection Questions

1. What information might you need to include when educating a patient about the importance of hygiene?
2. What information might you include when educating a new nurse about cultural preferences?
3. What information might you include when educating a recently admitted teenager who just started her first menstrual cycle?

What Should the Nurse Do?

1. A nurse is assessing a patient with oily hair and noticeable debris on their face and arms. The nurse also notices that the patient's gown is soiled. The nurse asks the patient when they last showered and if the patient would like to shower that morning or afternoon. The patient refuses to perform hygiene practices. What should the nurse do?
2. A 58-year-old patient has recently been admitted to the medical-surgical unit. The patient appears uncomfortable when the nurse asked if the patient would like to have a bath that day. What should the nurse do?

You are a home health nurse visiting a new patient. The patient is an 80-year-old male with diabetes who has impaired mobility after a stroke. The patient ambulates with a walker and was able to greet you at their door. The patient lives alone as his wife died last year. Upon entering the home, you notice clutter in various areas: a table covered in books, newspapers, dishes, and pictures; couches and chairs have clothing and miscellaneous medical equipment on them; and there are cords spread across walkways. The patient makes space for you to sit at the kitchen table and tells you it is ok to push anything aside that is in your way. While establishing rapport, you notice the patient has various body odors; soiled clothing; dry, flaky skin; and food particles visible in his teeth.

3. How would you address the patient's hygiene habits?
4. How would you address the clutter in the patient's home?
5. What would you educate the patient about regarding hygiene?
6. How would you respond if the patient tells you he prefers baths?
7. You are ready to develop a plan of care for this patient. What are three hygiene goals you can make?

Competency-Based Assessments

1. Develop a ten-minute presentation defining hygiene and explaining its benefits.
2. Develop a five-minute presentation on promoting healthy hygiene habits through patient education.

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CHAPTER 26
Urinary Elimination

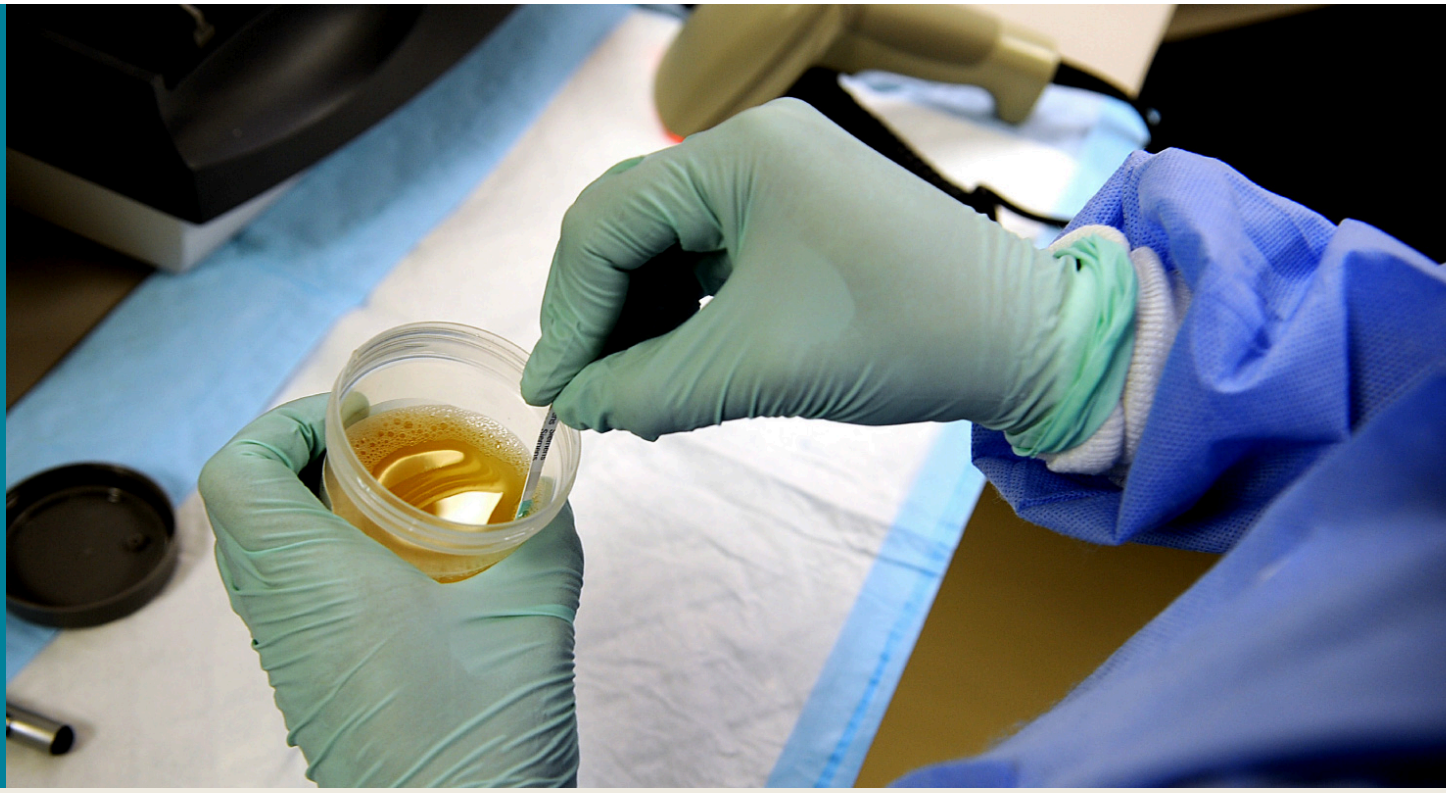

FIGURE 26.1 A urinalysis provides valuable information about the function of the urinary system. (credit: Department of Defense, Public Domain)

CHAPTER OUTLINE

26.1 Urinary System
26.2 Functions of the Urinary System
26.3 Factors Affecting Urinary Elimination
26.4 The Nurse's Role in Urinary Elimination

INTRODUCTION The urinary system, a remarkable and intricate physiological network, is an indispensable component of the human body's regulatory mechanisms. Operating quietly behind the scenes, it diligently filters waste, regulates fluid levels, and maintains electrolyte equilibrium, playing a vital part in sustaining the body's overall balance and functionality. This chapter delves into the multifaceted dimensions of the urinary system, exploring its fundamental functions, examining the various factors that impact urinary elimination, and highlighting the integral role nurses play in ensuring optimal urinary health for their patients.

Recognizing the urinary system's intricacies is not merely a professional nuance for nurses; it is a cornerstone in delivering comprehensive patient care. Armed with this knowledge, nurses become adept at spotting early signs of potential issues, intervening promptly, and averting complications. Nurses also serve as educators, empowering patients to actively engage in their urinary health. The comprehension of the urinary system contributes to accurate diagnosis, guiding care plans and shaping interventions tailored to each patient's unique needs.

26.1 Urinary System

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize the anatomy of the urinary system
- Describe the process of urine formation
- Explain the physiological act of urination

A comprehensive understanding of the urinary system, urine formation, and the physiological act of urination is fundamental to appreciating the intricate mechanisms that contribute to maintaining the body's internal balance. The anatomy of the urinary system, composed of the kidneys, ureters, bladder, and urethra, serves as the foundation for the elaborate processes involved. Exploring the process of urine formation unravels the intricate series of filtration, reabsorption, and secretion orchestrated by the kidneys. Meanwhile, understanding the physiological act of urination, from the micturition reflex to the stages of voiding, sheds light on the controlled release of urine. This knowledge is pivotal not only for comprehending the complexities of human physiology but also for recognizing the significance of these processes in sustaining overall health and homeostasis.

Anatomy of the Urinary System

The **urinary system**, a vital component of the human anatomy, is a sophisticated network of organs responsible for producing, storing, and eliminating urine from the body. Comprising the kidneys, ureters, bladder, and urethra, this intricately designed system orchestrates the filtration of blood, the formation of urine, and the controlled expulsion of waste from the body (Cleveland Clinic, 2023; Johns Hopkins, n.d.). The kidneys, positioned on either side of the spine, act as intricate filters, extracting excess fluids and waste products from the bloodstream. Nephrons, the microscopic functional units within the kidneys, play a central role in this process. The ureters transport the produced urine from the kidneys to the bladder, a muscular reservoir situated in the pelvic cavity. The urethra then serves as the exit pathway for urine, allowing for regulated voiding (Cleveland Clinic, 2023; Johns Hopkins, n.d.). This part of the chapter takes a closer look at each of these components.

Kidneys

A **kidney** is a bean-shaped organ located on either side of the spine, just below the rib cage, in the human body. Kidneys are essential components of the urinary system and play a critical role in maintaining overall health. The primary functions of the kidneys include filtering waste and excess substances from the blood to form urine, regulating fluid and electrolyte balance, managing acid-base equilibrium, contributing to **erythropoiesis** (the production of red blood cells), participating in detoxification by filtering drugs and toxins, aiding in the activation of vitamin D for calcium and phosphorus metabolism, and regulating blood pressure through the renin-angiotensin-aldosterone system (RAAS) (Cleveland Clinic, 2023; Johns Hopkins, n.d.). The kidneys are vital for maintaining physiological balance and supporting various bodily functions that contribute to overall well-being.

The size of the kidneys can vary among individuals, but on average, a typical adult human kidney is approximately 10 to 12 cm (about 4 to 5 in) in length and weighs about one-third of a pound (Preminger, 2022). The kidneys are encapsulated by a protective layer known as the **renal capsule**. Structurally, each kidney comprises an outer layer called the **renal cortex** and an inner region known as the **renal medulla**. A microscopic unit within the kidneys, called a **nephron**, is the functional units responsible for blood filtration and urine formation (Preminger, 2022). With approximately one million nephrons in each kidney, these structures play a pivotal role in maintaining the body's fluid balance and regulating electrolytes (Preminger, 2022).

Blood is supplied to the kidneys through the renal artery, while the deoxygenated blood exits via the renal vein. As blood circulates through the nephrons, excess fluids, electrolytes, and waste, called **urea**, are meticulously filtered. The body generates urea during the breakdown of protein-containing foods. Subsequently, urea is transported through the bloodstream to the kidneys, where it, along with water and other waste products, is eliminated in the form of urine (Johns Hopkins, n.d.; Preminger, 2022). The resulting urine accumulates in the **renal pelvis**, a funnel-shaped structure that directs the urine into the ureter. The ureter, in turn, conveys the urine to the bladder for storage (Preminger, 2022). The location and anatomy of the kidneys are depicted in Figure 26.2.

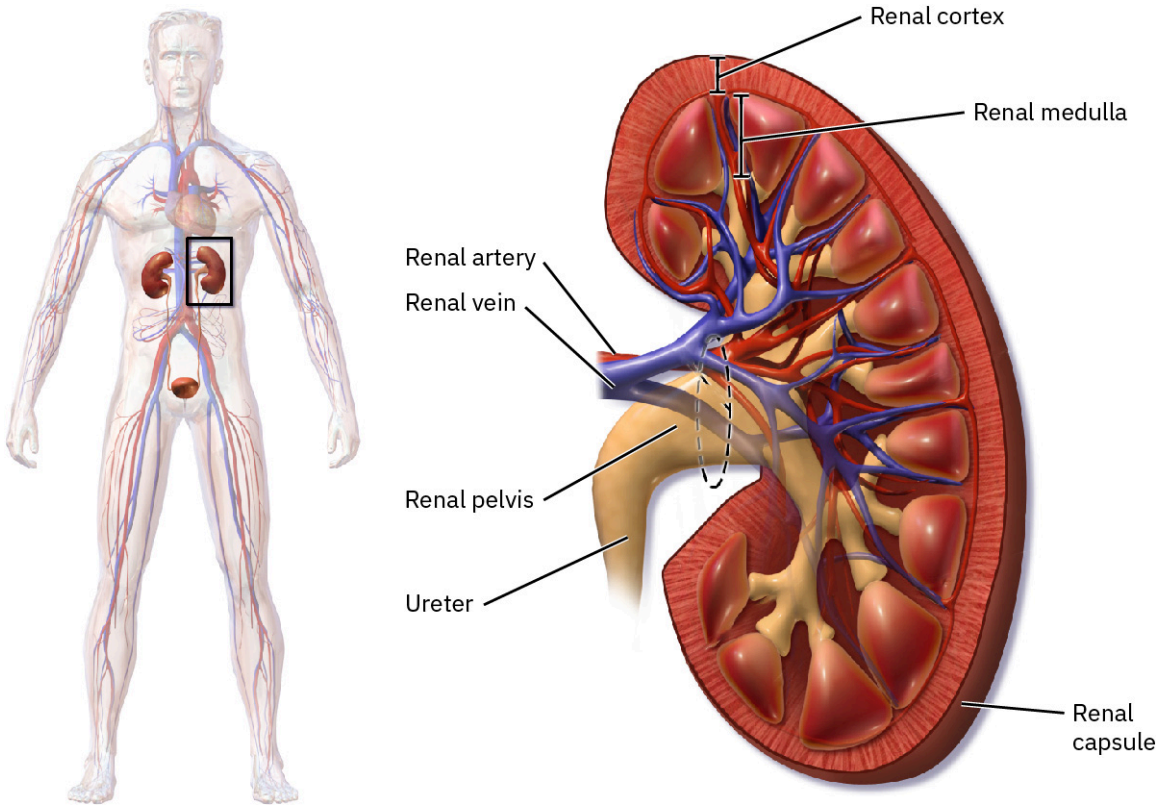

FIGURE 26.2 The kidneys are situated bilaterally on either side of the spine, below the rib cage and within the retroperitoneal space. These bean-shaped organs are essential components of the body's urinary system. (credit: "Blausen 0592 KidneyAnatomy 01.png" by BruceBlaus/Wikimedia Commons, CC BY 3.0)

Ureters

Within the human body, there are two ureters, one connected to each kidney. Each **ureter** is a muscular tube that serves as a conduit for transporting urine from its kidney to the urinary bladder. The ureters' primary function is to facilitate the unidirectional flow of urine, preventing backflow and ensuring the efficient drainage of urine from the renal pelvis to the bladder (Lescay et al., 2024). The unique structure and function of the ureters ensure the efficient and regulated transport of urine, safeguarding the urinary system from complications such as reflux (backflow) and obstruction (blockage).

Originating from the renal pelvis of each kidney, the ureters extend downward along the posterior abdominal wall before entering the pelvic cavity. Composed of smooth muscle and lined with specialized mucosa, the ureters exhibit rhythmic muscular movements called peristaltic contractions, which propel urine in a unidirectional flow toward the bladder. The ureters traverse the pelvic brim, passing behind the bladder before entering its posterior wall. This anatomical arrangement prevents the backflow of urine into the kidneys during bladder contraction (Lescay et al., 2024).

Bladder

The **bladder**, an essential component of the urinary system, acts as a storage reservoir for urine prior to its regulated expulsion from the body (Figure 26.3). Positioned within the pelvic cavity, this hollow and muscular organ possesses a flexible structure, enabling it to expand as it accumulates urine (Shermadou et al., 2023). In females, the bladder lies posterior to the pubic bone and anterior to the uterus and rectum. During late pregnancy, its capacity is reduced due to compression by the enlarging uterus, resulting in increased frequency of urination. In males, the anatomy is similar, minus the uterus and with the addition of the prostate inferior to the bladder.

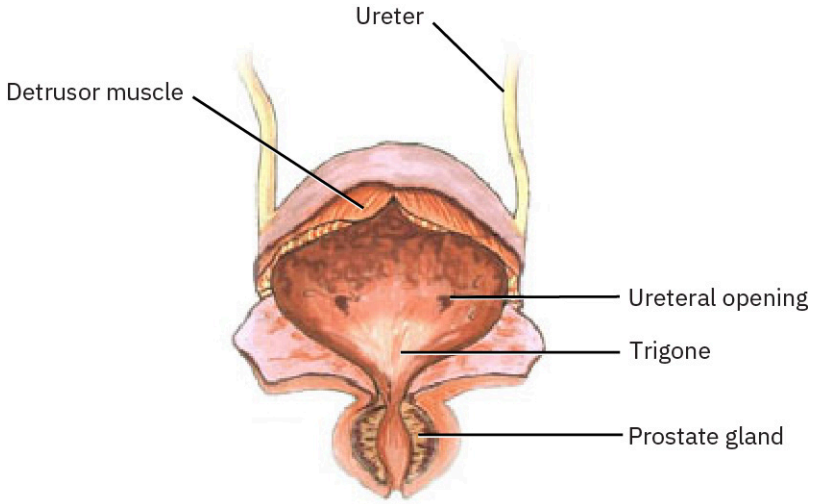

FIGURE 26.3 The bladder's triangular shape is characterized by three openings: two for the ureters and one for the urethra. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

As the bladder gradually fills, stretch receptors in its walls send signals to the central nervous system, indicating the need for voiding. The **detrusor muscle**, a layer of smooth muscle within the bladder wall, contracts under nervous system control, while the external urethral sphincter relaxes, facilitating the expulsion of urine through the urethra. The bladder's triangular shape is characterized by three openings: two for the ureters and one for the urethra. The **trigone**, a triangular area between these openings, acts as a physiological valve, preventing reflux of urine into the ureters. The neck of the bladder connects to the urethra, through which urine exits the body during voiding (Shermadou et al., 2023). The bladder's intricate anatomy and functional mechanisms enable it to store urine efficiently and facilitate controlled release, contributing to the overall regulation of the body's fluid and waste balance.

Urethra

The **urethra**, the final component of the urinary system, serves as the conduit for the expulsion of urine from the body. The urethra is a tubular structure extending from the neck of the bladder to the external urethral orifice. The length of the urethra varies between males and females, with males typically having a longer urethra that also functions as a passageway for semen during ejaculation. The female urethra is shorter and solely dedicated to the elimination of urine. The urethra is lined with mucous membrane and surrounded by muscle, contributing to its role in the voluntary control of urine release. The **external urethral sphincter**, a ringlike muscle, aids in the regulation of urine flow (Cleveland Clinic, 2022).

Process of Urine Formation

The process of urine formation, a sophisticated series of physiological events coordinated by the kidneys, is essential for maintaining the body's internal balance and eliminating waste products (Figure 26.4). This intricate journey begins with glomerular filtration, where blood entering the kidneys is meticulously filtered in the glomerulus to form an initial filtrate. Following filtration, tubular reabsorption occurs along the renal tubules, selectively reclaiming vital substances such as water, glucose, and ions from the filtrate back into the bloodstream. Simultaneously, tubular secretion involves the active transport of certain substances from the bloodstream into the renal tubules for further elimination. This complex interplay between glomerular filtration, tubular reabsorption, and tubular secretion culminates in the production of urine, a dynamic and essential function for sustaining internal homeostasis and overall bodily health.

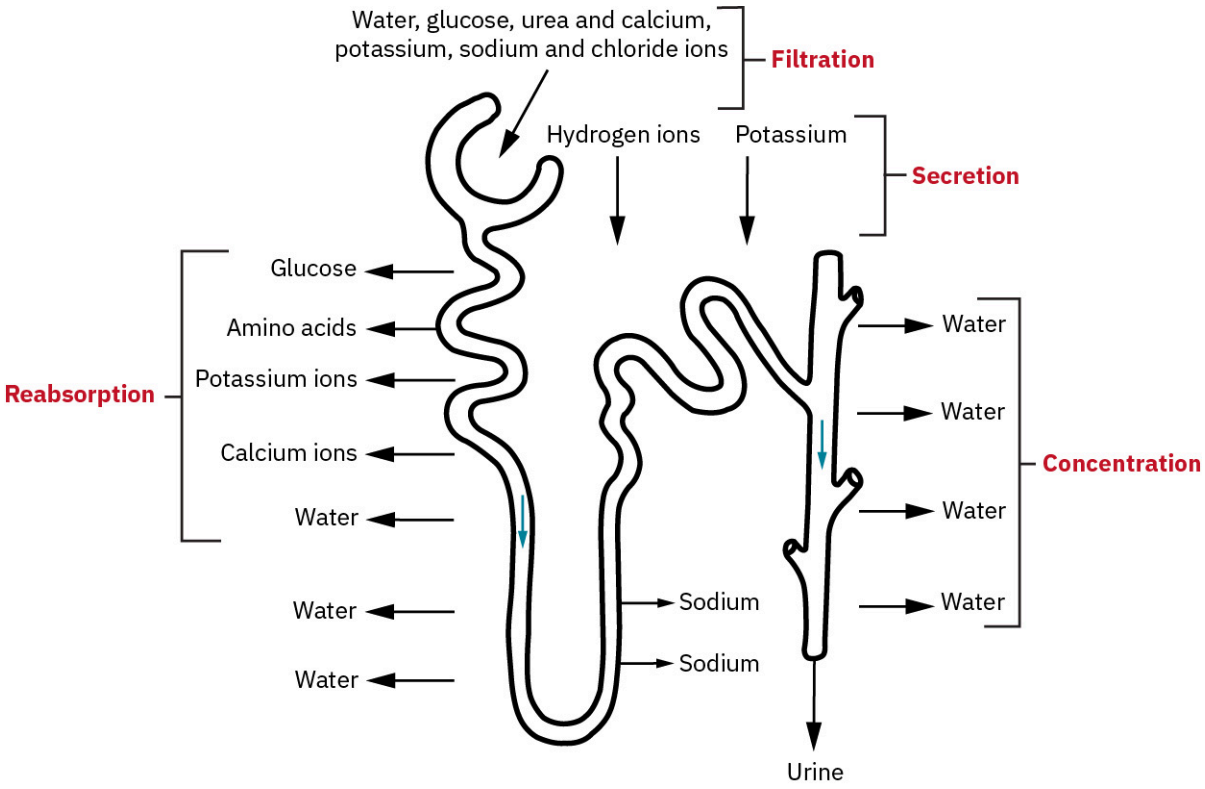

FIGURE 26.4 The complex interplay between glomerular filtration, tubular reabsorption, and tubular secretion culminates in the production of urine. These processes also ensure the fine-tuning of the urine's composition, regulating electrolyte levels, fluid balance, and the removal of metabolic waste. (credit: "Anatomy and physiology of animals Summary of the processes involved in the formation of urine.jpg" by Ruth Lawson/Wikipedia, CC BY 3.0)

Glomerular Filtration

The initial and crucial step in the process of urine formation is **glomerular filtration**. It takes place within the **glomerulus**, the intricate network of tiny blood vessels in the kidneys. As blood flows into the glomerulus through the afferent arteriole, the high pressure in this network forces water, electrolytes, and small molecules, including waste products, out of the blood and into the renal tubules. This resulting **glomerular filtrate** consists of essential substances required by the body and waste materials slated for elimination. It is noteworthy that the selective permeability of the glomerular membrane retains larger molecules like proteins and blood cells in the bloodstream. The rate at which glomerular filtration occurs is quantified as the **glomerular filtration rate (GFR)**, a critical indicator of kidney function. The normal GFR ranges between 120 and 125 mL/min. Glomerular filtration establishes the foundation for subsequent phases in urine formation, setting the groundwork for reabsorption and secretion processes that ultimately lead to the production of urine (Ogobuiro & Tuma, 2023).

Tubular Reabsorption

Following glomerular filtration, the pivotal phase of **tubular reabsorption** occurs within the renal tubules of the kidneys. The glomerular filtrate, which initially contains water, electrolytes, and essential substances, moves through the proximal convoluted tubule, loop of Henle, distal convoluted tubule, and collecting duct. Along this journey, the renal tubules selectively reabsorb critical components back into the bloodstream, ensuring the retention of substances vital for maintaining the body's balance. This includes the reabsorption of water, glucose, ions, and other necessary molecules, effectively reclaiming them from the filtrate. This reabsorption process is highly regulated, responding to the body's needs and adjusting the composition of the filtrate accordingly. Tubular reabsorption significantly concentrates the urine, conserving valuable water resources and aiding in the maintenance of electrolyte and solute balance within the body (Ogobuiro & Tuma, 2023).

Tubular Secretion

The final crucial phase in the process of urine formation, **tubular secretion**, occurs in the renal tubules of the kidneys following glomerular filtration and tubular reabsorption. This selective mechanism involves actively transporting certain substances, including excess ions, drugs, and metabolic by-products, from the peritubular

capillaries surrounding the tubules into the renal tubules. These substances, not effectively filtered during glomerular filtration or requiring further elimination, are crucial for maintaining the body's acid-base balance and controlling specific ion concentrations. For instance, the secretion of hydrogen ions actively regulates blood pH. Tubular secretion ensures the elimination of substances not initially cleared from the bloodstream, actively contributing to the final composition of urine (Ogobuiro & Tuma, 2023).

Act of Urination

The act of **urination** (also referred to as voiding or micturition) is a fundamental physiological process that reflects the intricate coordination between the nervous and muscular systems to eliminate urine from the bladder through the urethra. Centered within the urinary system, this multifaceted mechanism involves distinct stages (Flores et al., 2023). Understanding the act of urination delves into the anatomical and physiological intricacies that underlie the body's ability to store, process, and eliminate urine. This exploration not only reveals the complexity of micturition but also underscores its critical role in maintaining the body's internal equilibrium and overall well-being.

LIFE-STAGE CONTEXT

Age-Related Changes with Urination

As individuals age, various physiological adjustments occur in the urinary system, influencing the act of urination. One notable change is a decrease in bladder capacity, leading to a more frequent urge to urinate and a reduced tolerance for larger fluid volumes. Additionally, the pelvic floor muscles, crucial for maintaining bladder control, tend to weaken with age, contributing to instances of urinary incontinence, particularly during activities that increase intra-abdominal pressure. Nocturnal urination, or nocturia, becomes more prevalent in older adults, disrupting sleep patterns and impacting overall sleep quality. The micturition reflex, responsible for coordinating the voiding of urine, may slow down, resulting in delays in initiating urination and potential issues with urgency. For males, an enlarged prostate (benign prostatic hyperplasia) can further complicate the act of urination by causing difficulties in initiating and maintaining a steady urine stream. Awareness of these age-related changes is crucial for healthcare providers to tailor interventions and support for older individuals, ensuring optimal bladder function and overall well-being.

Micturition Reflex

The act of micturition involves a complex physiological process governed by the **micturition reflex**. This reflex is generated by the nervous system, primarily the autonomic nervous system and the spinal cord. As the bladder fills with urine, stretch receptors in the bladder wall are activated, sending signals to the spinal cord. The parasympathetic nervous system is then stimulated, causing the detrusor muscle in the bladder wall to contract while simultaneously relaxing the internal urethral sphincter. The sensation of a full bladder is conveyed to the brain, and when an individual voluntarily decides to empty the bladder, the external urethral sphincter, under conscious control, relaxes. This coordinated relaxation of the sphincters and contraction of the detrusor muscle result in the expulsion of urine through the urethra. The micturition reflex is a finely tuned mechanism that ensures controlled and voluntary release of urine while preventing involuntary leakage. Dysfunction in this reflex can lead to issues such as **urinary retention** (the inability to empty the bladder fully) or **urinary incontinence** (involuntary loss of bladder control, leading to the unintentional release of urine) (Flores et al., 2023).

Stages of Micturition

The stages of micturition encompass a series of precisely coordinated events within the urinary system. From the resting and filling stages, in which the bladder gradually accommodates accumulating urine, to the pivotal voiding stage, in which conscious and involuntary mechanisms converge to facilitate controlled urination, each stage plays a crucial role in maintaining continence and ensuring efficient waste elimination. Understanding these stages not only unveils the physiological intricacies of the micturition process but also sheds light on the intricate coordination between nervous system responses and voluntary muscle actions. This exploration into the stages of micturition is essential for comprehending the dynamic interplay of factors that contribute to the regulated release of urine, a fundamental aspect of the body's homeostatic mechanisms.

Resting and Filling Stages

During the resting stage, the bladder is in a relatively inactive state. As urine accumulates, stretch receptors in the

bladder wall are activated, generally sending signals when there is at least 50 to 100 mL, signaling to the nervous system that the bladder is filling and prompting urination. The parasympathetic nervous system is gradually activated, leading to a mild contraction of the detrusor muscle while maintaining closure of the internal and external urethral sphincters. This allows the bladder to gradually expand to accommodate the increasing volume of urine without initiating the urge to void (Flores et al., 2023).

During this filling stage, the bladder continues to receive urine. The stretch receptors continue to send signals to the spinal cord and brain, providing information about the increasing volume of urine. Despite ongoing contractions of the detrusor muscle, the urethral sphincters remain contracted, preventing the involuntary release of urine. The individual typically remains unaware of the filling process during this stage, as the bladder's main function is to store urine without generating a strong urge to void (Flores et al., 2023).

These early stages are essential for maintaining **continence** (the ability to control and maintain bladder functions) and preventing the constant need for urination. The transition to the next stage, the voiding or emptying stage, is initiated when the bladder reaches a certain level of distension, triggering the micturition reflex and the conscious sensation of needing to urinate.

Voiding Stage

The **voiding stage**, also known as the emptying stage, is a crucial phase in the micturition process. It follows the resting and filling stages and involves a coordinated series of events controlled by the micturition reflex and culminating in the release of urine stored in the bladder. The parasympathetic nervous system becomes more active, causing the detrusor muscle in the bladder wall to contract more forcefully. Simultaneously, the internal urethral sphincter relaxes involuntarily, allowing urine to flow from the bladder into the urethra. The conscious component of this stage involves the individual's decision to voluntarily relax the external urethral sphincter, allowing urine to exit the body. This conscious control is crucial for maintaining continence and preventing involuntary urine release (Flores et al., 2023).

The voiding stage is a dynamic process, and the coordination between involuntary and voluntary muscle actions ensures efficient and controlled urination. Dysfunction in this stage can lead to issues such as urinary retention or incontinence. Overall, the voiding stage represents the culmination of the micturition process, facilitating the expulsion of urine from the body while maintaining voluntary control over the process.

26.2 Functions of the Urinary System

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how the urinary system removes waste products from the body
- Recognize how the urinary system maintains balance of the body's fluids and electrolytes
- Explain the urinary system's role in regulating blood pressure
- Describe how the urinary system controls production of red blood cells

The urinary system serves multifaceted roles, extending beyond the excretion of waste products. This section explores the intricate mechanisms by which the urinary system actively removes waste products and maintains several delicate balances within the body. Furthermore, it explores the urinary system's pivotal role in regulating blood pressure, highlighting its involvement in broader physiological processes. Additionally, the section clarifies how the urinary system, through the secretion of hormones such as erythropoietin, contributes to the control and coordination of red blood cell (RBC) production. Together, these aspects underscore the comprehensive and dynamic functions of the urinary system in sustaining overall health and internal equilibrium.

Removal of Waste Products from the Body

The removal of urea, creatinine, and uric acid in urine constitutes a crucial physiological process central to the body's waste elimination mechanism. These nitrogenous waste products are metabolic by-products resulting from the breakdown of proteins and nucleic acids during various cellular processes. The kidneys play a pivotal role in filtering the bloodstream to selectively excrete these waste substances. The intricate kidney filtration and excretion processes contribute significantly to maintaining the body's internal balance and preventing the accumulation of potentially harmful waste products. Understanding how the urinary system efficiently manages the removal of urea,

creatinine, and uric acid is fundamental to appreciating the kidneys' vital role in overall homeostasis.

Urea

As you learned in the previous section, urea is a nitrogenous waste product that forms in the liver during the breakdown of proteins and amino acids. It is a key component of urine and is excreted from the body through the kidneys. Urea is crucial for maintaining the body's nitrogen balance, preventing the accumulation of toxic ammonia. The liver converts ammonia into urea, which is less toxic and more water soluble, making it easier for the kidneys to filter and eliminate from the body (Mayo Clinic, 2023). Monitoring urea levels in the blood and urine is essential in assessing kidney function and overall metabolic health. The normal urea level in the blood typically ranges between 7 and 20 mg/dL (milligrams per deciliter). However, it is important to note that reference ranges may vary slightly depending on the specific laboratory and the units of measurement used. Additionally, factors such as age, gender, and underlying health conditions can influence urea levels.

Creatinine

Another waste product, **creatinine**, results from the breakdown of creatine phosphate, which is used as an energy source in muscle cells. Like urea, creatinine is filtered by the kidneys and excreted in urine, and creatinine levels in the blood and urine serve as important indicators of kidney function. Elevated creatinine levels may suggest impaired kidney function, as the kidneys may be struggling to effectively filter and eliminate this waste product. Regular monitoring of creatinine levels is common in assessing kidney health and identifying potential kidney disorders (National Kidney Foundation, n.d.). Normal creatinine levels in the blood can vary based on several factors, including age, gender, muscle mass, and ethnicity. In adult males, typical reference ranges for serum creatinine levels are approximately 0.6 to 1.2 mg/dL, while in females, the range is typically 0.5 to 1.1 mg/dL. It is important to note that these reference ranges may slightly differ between laboratories.

Uric Acid

A chemical compound, **uric acid** is generated as a by-product during the breakdown of a compound called a **purine**, which is a naturally occurring substance found in the body's cells and in specific foods, such as organ meats, seafood, and certain vegetables. Following the breakdown of purines, uric acid is typically filtered by the kidneys and expelled from the body through urine. However, if there is an excessive production of uric acid or if the kidneys struggle to efficiently eliminate it, elevated uric acid levels in the bloodstream may occur. This heightened concentration can lead to the formation of urate crystals. A **urate crystal** is a solid structure that has the potential to accumulate in joints and other tissues, giving rise to conditions such as **gout**, a type of arthritis characterized by intense pain, swelling, and tenderness in the joints, often affecting the big toe (El Ridi & Tallima, 2017). It is crucial to monitor and effectively manage uric acid levels to prevent complications associated with conditions like gout. The normal uric acid levels in the blood typically range between 3.4 and 7.0 mg/dL for males and 2.4 to 6.0 mg/dL for females. However, reference ranges may vary slightly between laboratories, and factors such as age, gender, diet, and underlying health conditions can influence uric acid levels.

Maintenance of Balance

The urinary system contributes significantly to overall physiological stability as a pivotal regulator of the body's fluid, electrolyte, and acid-base balance. The kidneys act as refined filters, meticulously processing blood through mechanisms such as glomerular filtration, tubular reabsorption, and tubular secretion. These processes collectively determine the composition of urine, allowing for the precise regulation of electrolyte levels and fluid volume and the removal of metabolic waste. The efficient transport of urine from the kidneys to the bladder through the ureters, its storage within the bladder, and its controlled release via the urethra all contribute to fluid balance.

Moreover, the urinary system plays a vital role in maintaining acid-base equilibrium. Through selective processes in the renal tubules, acidic hydrogen ions and alkaline bicarbonate ions are regulated to help control the body's pH. The elimination of excess acids or bases in urine ensures that the blood remains within a narrow pH range, preventing deviations that could disrupt cellular function. The dynamic interplay between the urinary system's filtration and excretion processes ensures that the body's fluid and electrolyte balance, as well as its acid-base equilibrium, are finely tuned for optimal physiological function and overall well-being.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Ensuring Fluid and Electrolyte Homeostasis through Urinary System Regulation

The Quality and Safety Education for Nurses (QSEN) framework underscores the critical importance of understanding how the urinary system actively maintains the body's fluid balance. This pivotal role aligns seamlessly with QSEN principles, emphasizing the utmost significance of clinical safety and procedures within nursing practice.

Key aspects of QSEN pertaining to fluid and electrolyte homeostasis through urinary system regulation include the following:

- Patient-centered care: A comprehensive understanding of the urinary system's role in fluid and electrolyte balance ensures patient-centered care by addressing individualized needs related to kidney function. The tailoring of interventions to support patients with conditions affecting the urinary system contributes to personalized and effective care.
- Teamwork and collaboration: Collaborative efforts among healthcare professionals are crucial in managing patients with kidney issues, emphasizing the need for interdisciplinary teamwork. Effective communication and collaboration between nurses, providers, and other team members enhance the overall care provided to patients.
- Evidence-based practice: The knowledge of how the urinary system maintains fluid and electrolyte balance is rooted in evidence-based practices. Nurses relying on evidence-based information can make informed decisions in the assessment and management of patients with kidney conditions, contributing to better outcomes.
- Quality improvement: Recognizing the urinary system's role in fluid balance is integral to quality improvement initiatives in health care. Continuous evaluation and improvement of protocols related to kidney care contribute to enhanced patient outcomes and overall quality of care.
- Patient safety: Ensuring the balance of fluids and electrolytes through the urinary system aligns with patient safety goals. Nurses, through their understanding of urinary system regulation, can actively contribute to preventing complications related to imbalances and promoting a safe patient environment.

By integrating these QSEN principles into nursing practice, healthcare professionals can uphold the highest standards of patient care, ensuring safety, quality, and optimal outcomes in managing fluid and electrolyte balance through urinary system regulation.

Fluid and Electrolyte Balance

Fluid and electrolyte balance in urine is a dynamic and finely regulated process crucial for maintaining the body's internal homeostasis. At the forefront of this regulatory mechanism are the kidneys, which act as the primary orchestrators in filtering and excreting substances to uphold an optimal internal environment. The glomerular filtration process serves as the initial step by which water and electrolytes are meticulously filtered from the bloodstream into the renal tubules. In subsequent tubular reabsorption, the kidneys selectively reclaim crucial substances, including sodium, potassium, and water, redirecting them back into the bloodstream to prevent excessive loss (Preminger, 2022).

Concurrently, tubular secretion actively eliminates excess ions and substances that were not adequately filtered during the earlier glomerular filtration phase. This intricate coordination between filtration, reabsorption, and secretion is fundamental in refining the composition of urine. Importantly, this dynamic interplay contributes significantly to the body's ability to regulate key physiological parameters such as blood volume, blood pressure, and electrolyte concentrations (Preminger, 2022). By fine-tuning these factors, the kidneys ensure the body's internal equilibrium, supporting overall physiological balance and health.

Acid-Base Balance

Acid-base balance in urine is a crucial aspect of maintaining the body's overall pH equilibrium. The kidneys play a pivotal role in regulating acid-base balance by selectively excreting hydrogen ions (H^+) and reabsorbing bicarbonate ions (HCO_3^-) in the renal tubules. This process occurs in response to variations in the body's acid-base status,

helping to eliminate excess acids or bases.

The process of reabsorption of bicarbonate helps to maintain the blood's pH balance by acting as a buffer against acidosis. Additionally, the excretion of hydrogen ions assists in preventing alkalosis by regulating the blood's acidity levels. The kidneys' ability to finely tune the excretion and reabsorption of these ions ensures that the urinary system actively participates in maintaining the delicate balance of pH in bodily fluids (Merck Manual, n.d.). This intricate mechanism is essential for overall homeostasis and the prevention of disruptions in acid-base equilibrium that could adversely affect cellular function and physiological processes.

Release of Hormones to Regulate Blood Pressure

The regulation of blood pressure is a critical aspect of maintaining overall health and homeostasis within the body. Hormones play a pivotal role in this regulation by exerting control over various physiological processes that influence blood pressure. Through the release of specific hormones into the bloodstream (e.g., renin, angiotensin, aldosterone, epinephrine, norepinephrine), the body can effectively adjust blood pressure levels in response to changing conditions and demands. The renal system is also involved in regulating blood pressure; however, it does not do so by directly regulating hormones within the bloodstream. Instead, the kidneys, as part of the endocrine system, play a crucial role in blood pressure regulation by releasing hormones that influence various physiological processes. The RAAS is a key pathway involved in this regulation. When the kidneys detect reduced blood flow or low blood pressure, they release the enzyme renin. Renin then initiates a series of events leading to the production of angiotensin II, a potent vasoconstrictor.

Renin

An enzyme synthesized and discharged by specialized juxtaglomerular cells in the kidneys, **renin** is a key player in the intricate regulatory system known as the **renin-angiotensin-aldosterone system (RAAS)**. RAAS is a complex hormonal cascade that plays a crucial role in regulating blood pressure, electrolyte balance, and fluid volume within the body. The release of renin into the bloodstream is prompted by conditions like decreased blood flow to the kidneys or a decline in blood pressure (Fountain et al., 2023).

Once released, renin acts on angiotensinogen, a protein originating from the liver and circulating in the bloodstream. Renin hydrolyzes **angiotensinogen** to produce **angiotensin I** (a peptide hormone); further conversion of angiotensin I to **angiotensin II** occurs primarily in the lungs through the action of angiotensin-converting enzyme (ACE). Notably, angiotensin II exerts a potent vasoconstrictor effect, causing the narrowing of blood vessels, thereby elevating blood pressure (Fountain et al., 2023).

Additionally, angiotensin II stimulates the adrenal glands to release **aldosterone**, which, in its role as a hormonal facilitator, enhances the reabsorption of sodium and water in the kidneys (Fountain et al., 2023). This process contributes to an augmentation in blood volume and, consequently, an increase in blood pressure. Individuals experiencing kidney failure may encounter challenges in effectively regulating blood pressure, often resulting in elevated blood pressure levels (Preminger, 2022).

Production of Red Blood Cells

The urinary system controls the production of RBCs indirectly through the release of erythropoietin, a hormone produced by the kidneys. (Red blood cells are also known as erythrocytes.) When the kidneys detect low oxygen levels in the blood, often due to factors like decreased RBC count or insufficient oxygen availability, they respond by releasing erythropoietin into the bloodstream. Erythropoietin then travels to the bone marrow, where RBCs are formed, and stimulates an increase in the production of RBCs. This regulatory mechanism, known as erythropoiesis, is vital for maintaining the oxygen-carrying capacity of the blood and ensuring homeostasis within the circulatory system.

Erythropoietin

A glycoprotein hormone, **erythropoietin (EPO)** plays a crucial role in the regulation of RBC production. Produced primarily by the kidneys, EPO is released in response to low oxygen levels in the blood, a condition known as hypoxia. The hormone's primary function is to stimulate the bone marrow to produce and release more RBCs into the bloodstream (Cleveland Clinic, 2022; Preminger, 2022).

High levels of erythropoietin (EPO) are typically triggered by low oxygen levels in the body, such as in response to

conditions like anemia or hypoxia. EPO, in turn, stimulates the proliferation and differentiation of erythrocyte precursor cells in the bone marrow, leading to an increased production of RBCs (Cleveland Clinic, 2022). This process enhances the blood's oxygen-carrying capacity, helping to alleviate hypoxia and maintain the body's overall oxygen balance.

On the other hand, low levels of EPO can occur when there is sufficient oxygen in the blood or when the kidneys are not functioning properly. Conditions such as chronic kidney disease can lead to decreased EPO production. The treatment approach for low EPO depends on the underlying cause. In cases where low EPO is associated with chronic kidney disease, healthcare providers may consider EPO replacement therapy to stimulate RBC formation. This synthetic EPO can help compensate for the reduced natural EPO production in the kidneys. Additionally, addressing the root cause of low EPO is essential. Managing conditions like chronic kidney disease through medications, lifestyle adjustments, or advanced interventions like dialysis or kidney transplant can contribute to improved EPO levels (Cleveland Clinic, 2022).

26.3 Factors Affecting Urinary Elimination

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify considerations for impaired urinary elimination
- Recognize the effect of medications on urinary elimination
- Describe pathological factors affecting urinary elimination

This section explores the many factors influencing urinary elimination, ranging from developmental and sociocultural considerations to medication and pathological issues. These insights contribute to a holistic understanding of urinary elimination challenges, enabling nurses to navigate and address the complexities involved. The chapter's overall goal is to foster comprehension of urinary elimination factors, laying the foundation for informed decision-making and effective management in healthcare contexts.

Considerations for Impaired Urinary Elimination

Impaired urinary elimination refers to a disruption in the normal process of expelling urine from the body, leading to difficulties or abnormalities in urination. Causes of impaired urinary elimination can vary widely and include conditions such as urinary tract infections, bladder dysfunction, kidney stones, neurological disorders, and prostate enlargement, among others. Complications of impaired urinary elimination can lead to more severe conditions, including urinary retention, kidney damage, and urinary incontinence (Srakocic, 2023). Prompt identification and management are crucial to prevent complications and improve overall urinary function.

Impaired urinary elimination encompasses a spectrum of challenges that disrupt the normal processes of urine excretion:

- A condition marked by the absence of urine output is **anuria**, and it is frequently encountered in cases of kidney failure. It presents as less than 50 mL of urine within a twenty-four-hour period.
- Painful or difficult urination is **dysuria**.
- Reduced urine output is **oliguria**. It may indicate potential issues such as dehydration, fluid retention, or diminishing kidney function.
- The urge to urinate multiple times throughout the day or night (nocturia) is **urinary frequency**. It is often accompanied by a compelling sense of urgency, introducing another layer of concern.
- The sensation of an urgent need to void is **urinary urgency**, and this may lead to urge incontinence if prompt access to a restroom is not possible.
- Regular nighttime urination, **nocturia**, can significantly impact an individual's quality of life due to resulting sleep disturbances.
- Excessive urine output, surpassing 2.5 L over twenty-four hours is **polyuria**. It serves as a potential indicator of various medical conditions.

Impaired urinary elimination poses multifaceted challenges that necessitate a comprehensive understanding of various considerations. Developmental considerations, sociocultural factors, and psychological elements play crucial roles in shaping individuals' experiences with impaired urinary elimination. Fluid and food intake, as well as muscle tone and activity, further contribute to the complexity of managing urinary issues. Recognizing these diverse

aspects is fundamental for nurses in providing holistic care, tailoring interventions, and fostering effective communication with individuals facing impaired urinary elimination. A comprehensive approach that considers the interplay of these factors is essential for promoting optimal urinary health and addressing the unique needs of individuals with urinary elimination challenges.

Developmental Considerations

Developmental considerations for impaired urinary elimination can vary across the life span. Understanding how urinary elimination may be affected at different stages of development is crucial for providing effective nursing care. Developmental considerations for impaired urinary elimination may be categorized by age group:

- Infants and toddlers: Immature neuromuscular control and limited verbal communication skills can contribute to difficulties in bladder control and expressing the need to void. Reliance on diapers may delay toilet training, potentially causing challenges later (Figueroa & DeCotiis, 2023).
- Preschoolers: Incomplete or delayed toilet training may contribute to occasional accidents. Anxiety related to separation from caregivers may affect the ability to use restrooms away from home (Figueroa & DeCotiis, 2023).
- School-age children: Growing independence in self-care may improve toileting habits. Social factors such as peer pressure may impact bathroom habits both positively and negatively.
- Adolescents: Adolescents may be more conscious of body image, affecting restroom use in public places. Busy schedules and peer influences may lead to irregular fluid intake patterns.
- Young adults: Work, academic demands, and social activities may influence voiding patterns and contribute to urinary issues.
- Middle-aged adults: Childbearing experiences may contribute to pelvic floor issues. Sedentary jobs or professions with limited restroom access may impact elimination.
- Older adults: Age-related muscle weakening may lead to incontinence or incomplete emptying. Increased medication use may affect bladder function and contribute to urinary issues. Reduced mobility may pose challenges in reaching the bathroom in time.
- Geriatric population: Dementia or cognitive decline can impact awareness of the need to void. Diminished sensory perception may lead to delayed recognition of a full bladder. Chronic conditions and comorbidities may exacerbate urinary problems.
- End-of-life care: Reliance on others for toileting needs may impact dignity and autonomy. Palliative care may focus on maintaining comfort and addressing urinary symptoms.

Nurses must consider these developmental factors when assessing and providing care for individuals with impaired urinary elimination. Tailoring interventions based on age-specific needs and addressing psychological aspects can contribute to more effective and patient-centered care.

Sociocultural Considerations

Impaired urinary elimination can be significantly influenced by sociocultural factors, as cultural beliefs, social norms, and access to healthcare services play a pivotal role in shaping individuals' attitudes and behaviors related to urinary health. Sociocultural considerations may impact how people perceive and discuss issues related to urinary function as well as whether they seek medical assistance and adhere to prescribed treatments for issues. Cultural taboos or stigmas surrounding discussions of bodily functions may contribute to delayed or inadequate healthcare-seeking behavior. Additionally, disparities in access to healthcare resources and education within different sociocultural contexts can affect the timely identification and management of urinary issues (Brown & Simon, 2021). A culturally sensitive and inclusive approach to healthcare delivery is essential to address sociocultural considerations related to impaired urinary elimination and ensure that individuals receive comprehensive and equitable care tailored to their specific cultural backgrounds and social contexts.

CULTURAL CONTEXT

Cultural Sensitivity in Addressing Urinary Health: Navigating Diverse Perspectives

Discussing or seeking help for urinary issues may be perceived differently across cultures. Nurses should approach these situations with cultural competence, recognizing diverse beliefs and practices related to health and illness. By

integrating cultural awareness into nursing care, healthcare professionals can foster trust, enhance communication, and deliver patient-centered solutions tailored to individual cultural contexts. Nurses should keep in mind the following cultural considerations related to impaired urinary retention:

- Communication styles: In some cultures, discussing personal health matters openly may be considered taboo. Nurses should be aware of cultural communication norms and adopt a respectful and nonintrusive approach when addressing urinary issues.
- Modesty and privacy: Cultural attitudes toward modesty and privacy can influence how patients respond to physical examinations or procedures related to urinary elimination. Healthcare providers should prioritize preserving the patient's dignity and comfort.
- Gender sensitivity: Certain cultures may prefer healthcare providers of a specific gender. Nurses should be sensitive to these preferences and, when possible, accommodate requests to ensure the patient feels respected and at ease during examinations or discussions.
- Alternative medicine practices: Some cultures may rely on traditional or alternative medicine for health concerns. Nurses should inquire about any cultural practices or remedies related to urinary issues and collaborate with patients to integrate culturally acceptable approaches into their care plans.
- Family involvement: Within some cultures, family plays a significant role in decision-making. Nurses should be open to involving family members in discussions about urinary issues, ensuring that cultural norms regarding family dynamics are respected.
- Dietary and lifestyle practices: Cultural dietary habits and lifestyle practices can impact urinary health. Nurses should explore and consider these cultural factors when providing advice on dietary modifications or lifestyle changes to manage urinary retention.
- Beliefs about illness and treatment: Cultural beliefs regarding the causes of illness and preferred methods of treatment may vary. Nurses should engage in culturally sensitive conversations to understand these beliefs and collaborate with patients to develop care plans that align with their cultural perspectives.
- Language and health literacy: Language barriers and health literacy levels can affect understanding and adherence to care plans. Providing information in the patient's preferred language and using culturally appropriate educational materials can enhance communication and comprehension.

By recognizing and respecting these cultural considerations, nurses can ensure that their care is inclusive, patient-centered, and aligned with the diverse needs and preferences of individuals with impaired urinary retention.

Fluid and Food Intake Considerations

Impaired urinary elimination can be influenced by fluid and food intake considerations, highlighting the intricate relationship between diet and urinary health. Adequate hydration based on individual needs and environmental factors is crucial for maintaining optimal urinary function. In cases of reduced fluid intake, urine may become concentrated, potentially leading to discomfort, increased risk of urinary tract infections, and altered urinary patterns. On the other hand, excessive fluid intake, especially of diuretic substances like caffeine or alcohol, may contribute to frequent urination and potential dehydration. Moderation in the consumption of caffeinated and alcoholic beverages is advised, especially for individuals prone to urinary urgency (Whelan, 2023). Distributing fluid intake evenly throughout the day can help maintain consistent urine production and reduce the likelihood of dehydration or overhydration. Individuals who wake up at night to urinate should refrain from drinking a few hours before going to sleep (Mayo Clinic, 2023). Paying attention to fluid intake patterns and adjusting them based on individual preferences and needs supports overall urinary health.

Additionally, certain foods can impact urinary health. Table 26.1 provides examples of food that can impact urinary health, along with recommendations for practice.

Food	Impact	Recommendations
Sodium	A diet high in sodium can contribute to water retention, affecting overall fluid balance and potentially leading to edema or increased stress on the urinary system.	Maintaining a balanced sodium intake by avoiding excessive salt in the diet supports overall kidney health and urinary balance.
Fruits and vegetables	A diet high in fruits and vegetables provides essential nutrients and antioxidants that support urinary health. Some fruits, like watermelon and cucumber, have high water content, contributing to overall hydration.	Inclusion of a variety of fruits and vegetables in the diet ensures a range of beneficial compounds that positively impact urinary function.
Spicy foods	Spicy foods may irritate the bladder in some individuals, potentially leading to increased urinary frequency or discomfort.	Monitoring individual responses to spicy foods and adjusting the diet based on personal tolerance can help manage potential irritants.
Citrus fruits	Citrus fruits contain citric acid, which in moderate amounts is generally tolerated well. However, excessive consumption may contribute to conditions like kidney stones in susceptible individuals.	Balanced intake of citrus fruits as part of a diverse diet is generally healthy, but those with specific conditions may need to monitor their consumption.

TABLE 26.1 Foods that Impact Urinary Elimination (Source: Whelan, 2023.)

Individual responses to fluid and food intake can vary, and personalized approaches— considering factors such as age, health status, and specific medical conditions—are essential. Maintaining a well-balanced diet, staying adequately hydrated, and being mindful of individual sensitivities contribute to optimal urinary elimination.

Psychological Factors

Psychological factors play a significant role in impaired urinary elimination, contributing to conditions such as urinary incontinence or retention. Emotional stress, anxiety, and mental health disorders can influence the nervous system's regulation of the micturition reflex, leading to disruptions in bladder control (Gao & Rodriquez, 2022). Individuals experiencing high levels of stress may encounter involuntary contractions of the detrusor muscle or heightened sensitivity to bladder signals, resulting in urgency or incontinence. Conversely, psychological factors can contribute to urinary retention: emotional distress may lead to a subconscious inhibition of the micturition reflex, making it challenging to void urine. Additionally, conditions like depression or cognitive impairment can impact an individual's ability to recognize or respond to signals of a full bladder.

CULTURAL CONTEXT

Cultural Perspectives on Urinary Health: Navigating Psychological Factors, Stigmas, and Gender Roles

Psychological factors affecting urinary elimination need to be viewed through a cultural lens, acknowledging the influence of cultural considerations on these aspects. Cultural intricacies play a crucial role in shaping beliefs, attitudes, and behaviors concerning urinary health. Recognizing how culture affects psychological factors is imperative for developing interventions that are culturally sensitive and delivering comprehensive care to individuals facing challenges in urinary elimination.

- Cultural stigmas and taboos: Cultural beliefs and practices surrounding bodily functions can impact an individual's psychological well-being and, consequently, their urinary habits. Societal stigmas or taboos related to discussing or seeking help for urinary issues may contribute to psychological distress.
- Cultural perceptions of aging: Cultural perspectives on aging may influence how individuals perceive and cope

with age-related changes in urinary function. Acceptance of or resistance to seeking medical or psychological help can vary across cultures.
- Gender roles: Cultural expectations and gender roles may affect how individuals cope with urinary issues. For instance, societal expectations around masculinity or femininity could influence how males and females express or address psychological factors related to urinary elimination.

Considering cultural factors is crucial in tailoring interventions for individuals experiencing impaired urinary elimination. Healthcare providers should adopt culturally sensitive approaches and acknowledge the diverse cultural backgrounds and beliefs of patients, promoting a more comprehensive and personalized approach to urinary health.

Here are some other psychological factors that can contribute to impaired urinary elimination:

- Trauma and post-traumatic stress disorder: Individuals who have experienced trauma may exhibit altered urinary patterns due to the impact of psychological distress on the nervous system.
- Fear and phobias: Specific fears or phobias related to toileting, using public restrooms, or surviving experiences such as sexual assault can contribute to urinary difficulties.
- Psychosomatic factors: Some individuals may manifest physical symptoms, including urinary issues, as a result of psychological distress, without a clear underlying medical cause.
- Coping mechanisms: Unhealthy coping mechanisms, such as substance misuse, may also indirectly affect urinary function.

Addressing these psychological factors is essential in comprehensive treatment. An interdisciplinary approach involving healthcare professionals, psychologists, and counselors is often beneficial. Treatment strategies may include the following:

- Counseling and psychotherapy: Addressing underlying psychological issues through therapy can help individuals manage stress, anxiety, trauma, or phobias that contribute to urinary problems.
- Stress management techniques: Teaching stress-reduction techniques, such as mindfulness, deep breathing exercises, or progressive muscle relaxation, can positively impact bladder function.
- Behavioral therapy: Specifically for conditions like urinary incontinence, behavioral therapy can involve bladder training, scheduled voiding, and habit retraining.
- Medication: In some cases, medications may be prescribed to address anxiety, depression, or other mental health issues that impact urinary function.
- Support groups: Participating in support groups can provide individuals with a sense of community and understanding, helping them cope with psychological aspects of their urinary issues.

Recognizing and addressing psychological factors in the management of impaired urinary elimination is crucial for a holistic approach to health care. Combining medical interventions with psychological support can improve outcomes and enhance the overall well-being of individuals experiencing urinary difficulties.

Muscle Tone and Activity

Muscle tone and activity are critical considerations in impaired urinary elimination, influencing the proper functioning of the urinary system. The muscles surrounding the bladder, urethra, and pelvic floor play a pivotal role in maintaining continence and facilitating effective voiding. Impaired muscle tone, often associated with factors such as aging, neurological conditions, or pelvic floor dysfunction, can lead to difficulties in controlling the release of urine. Age-related hormonal changes, as seen in menopausal transitions, contribute to a decrease in pelvic floor muscle tone. Pelvic floor dysfunction is also associated with childbirth or trauma, which may weaken the muscles that support urinary function. Furthermore, neurological conditions such as multiple sclerosis or spinal cord injuries can disrupt the communication between the brain and the muscles involved in urinary control.

Impaired muscle tone can lead to challenges in controlling the release of urine. Weakened pelvic floor muscles may result in stress incontinence, as activities like coughing or sneezing induce involuntary urine leakage due to increased pressure on the bladder. Decreased muscle activity can contribute to incomplete bladder emptying, raising the risk of urinary tract infections and other complications. Moreover, altered muscle tone can impact the neuromuscular coordination required for timely and controlled voiding, leading to difficulties in effective bladder emptying. Understanding the impact of muscle tone and activity on urinary function is essential for developing

tailored interventions to address and manage impaired urinary elimination in individuals experiencing these challenges.

LIFE-STAGE CONTEXT

Age-Related Muscle Tone Changes in Urinary Health

As people navigate the journey of aging, the impact on muscle tone becomes particularly significant in the context of urinary health. Alterations in the pelvic floor muscles, neuromuscular coordination, and joints and connective tissue manifest as integral components accompanying the aging process.

- Pelvic floor changes:
  - Menopausal transitions: Age-related hormonal changes, especially during menopause in those assigned female at birth, can contribute to a decrease in muscle tone in the pelvic floor. Weakening of these muscles may lead to challenges in maintaining urinary continence.
  - Effects of aging on muscles: The natural aging process can result in the gradual loss of muscle mass and tone throughout the body, including the pelvic region. Diminished muscle tone can impact the ability to effectively control the release of urine.
- Neuromuscular coordination:
  - Decline in nervous system function: Aging can affect the nervous system's ability to coordinate muscle contractions, including those involved in the micturition reflex. This decline may contribute to difficulties in timely and controlled voiding.
  - Sarcopenia and general muscle atrophy: Sarcopenia, the age-related loss of skeletal muscle mass, can extend to the muscles involved in urinary elimination. General muscle atrophy can affect the coordination required for proper bladder function.
- Changes to joints and connective tissue:
  - Impact on pelvic support structures: Aging can lead to changes in joint flexibility and connective tissue integrity, affecting the support structures around the bladder and urethra. This may contribute to issues such as stress urinary incontinence.

Understanding the impact of aging on muscle tone is crucial for addressing age-related urinary challenges. Tailored interventions, including targeted exercises and lifestyle modifications, can help mitigate the effects of muscle tone changes on urinary elimination in different stages of life.

Addressing impaired muscle tone and activity involves a multidimensional approach. Behavioral therapy, including bladder training and habit retraining, can assist in managing incontinence and improving bladder control by optimizing muscle function. Lifestyle modifications, such as maintaining hydration and adopting a healthy diet, contribute to overall muscle health and support urinary function. Understanding the psychological factors influencing muscle tone is also crucial, as stress and anxiety can further exacerbate urinary problems. Medications may be prescribed to manage underlying conditions affecting muscle function, and physical therapy—specifically pelvic floor exercises—can improve muscle tone and coordination. Surgical interventions may be recommended for structural abnormalities hindering proper muscle function. Lifestyle modifications, including regular exercise and a balanced diet, play a crucial role in supporting overall muscle health.

Medication Considerations

The administration of medications is a critical aspect of medical care, and various drugs can have significant effects on urinary elimination. Understanding the impact of medications on urinary function is essential for healthcare providers to make informed decisions and ensure patient well-being. Medications can influence urine production, frequency, and composition, either by impairing or enhancing the process. Factors such as drug interactions, side effects, and individual patient characteristics must be carefully considered when prescribing and administering medications. Common medications that may affect urinary elimination can be found in Table 26.2 (Arianayagam, n.d.).

Drug Class	Examples	Impact
Alpha blockers and Beta blockers	tamsulosin, propranolol	Alpha blockers may relax smooth muscle in the prostate and bladder neck, improving urinary flow. Beta blockers, on the other hand, may cause urinary retention in some individuals.
Anticholinergics	oxybutynin, tolterodine	Anticholinergic drugs block acetylcholine receptors, leading to relaxation of smooth muscle. While they are used to treat overactive bladder and urinary incontinence, they may also cause urinary retention in some individuals.
Antidepressants	amitriptyline, duloxetine	Some antidepressants can affect nerve signals and muscle tone, potentially leading to urinary retention or incontinence.
Antipsychotics	olanzapine, risperidone	Some antipsychotics may cause urinary retention or other urinary disturbances as a side effect.
Calcium channel blockers	nifedipine, verapamil	These medications may affect bladder contractility and can contribute to urinary retention in some individuals.
Diuretics	furosemide, hydrochlorothiazide	Diuretics increase urine production and can lead to frequent urination. They are commonly used to manage conditions like hypertension and edema.
Nonsteroidal anti-inflammatory drugs (NSAIDs)	ibuprofen, naproxen	NSAIDs can sometimes cause fluid retention and edema, leading to changes in urinary habits.
Opioid analgesics	morphine, oxycodone	Opioids can cause constipation, which may indirectly affect urinary elimination by putting pressure on the bladder. Constipation can lead to difficulties in voiding.
Sedatives and hypnotics	benzodiazepines (e.g., diazepam, lorazepam)	Sedative medications can affect the central nervous system, potentially leading to impaired bladder control and urinary retention.

TABLE 26.2 **Medications that Affect Urinary Elimination**

Medications that Impair Urinary Elimination

Certain medications can significantly impact urinary elimination, introducing a range of effects that may lead to challenges in this physiological process. Anticholinergic medications, commonly prescribed for overactive bladder, can disrupt nerve signals and contribute to urinary retention, particularly in older individuals. Opioid analgesics may induce constipation, complicating voiding and promoting urinary retention. Antidepressants can affect both nerve signals and muscle tone in the bladder, potentially resulting in urinary retention or incontinence (Arianayagam, n.d.). Additionally, medications with antispasmodic properties can influence muscle tone in the urinary tract, potentially causing hesitancy or difficulty in initiating urine flow.

Nurses must be vigilant in assessing the potential side effects of medications to anticipate and manage any adverse impacts on urinary elimination, ensuring comprehensive and individualized care for patients. Addressing these medication-induced challenges to urinary elimination requires tailored interventions. Healthcare providers may consider adjusting medication dosages, switching to alternatives with fewer urinary side effects, or incorporating additional medications to counteract adverse effects. For instance, prescribing medications to mitigate constipation

alongside opioids may alleviate the impact on urinary function. Furthermore, lifestyle modifications, such as increasing fluid intake and maintaining regular physical activity, can play a supportive role in managing medication-induced urinary complications.

Close monitoring of individuals on these medications is crucial, especially in older adults or those with preexisting urinary conditions. Collaboration between healthcare providers, pharmacists, and patients is essential to balance the therapeutic benefits of medications with their potential adverse effects on urinary elimination. The aim is to optimize overall health while minimizing the impact on urinary function, ensuring a holistic and individualized approach to patient care.

Medications that Increase Urinary Elimination

Certain medications are designed to increase urinary elimination and are commonly prescribed to address various medical conditions. Diuretics are commonly prescribed to manage conditions like hypertension and edema. These medications enhance urine production by promoting the excretion of excess fluids and electrolytes from the body. While diuretics can be beneficial in addressing fluid retention, they may lead to increased frequency of urination and potential electrolyte imbalances (Arianayagam, n.d.). One significant concern is the wasting of potassium ions, a condition known as hypokalemia, which can result from the use of certain diuretics. Potassium is crucial for maintaining proper cardiac function, and its depletion can lead to serious cardiac issues such as arrhythmias, muscle weakness, and severe complications like ventricular tachycardia or fibrillation. Interventions for individuals on diuretics may involve close monitoring of electrolyte levels, dietary adjustments to include potassium-rich foods, and, in some cases, dosage modifications or the use of potassium-sparing diuretics to maintain electrolyte balance and ensure cardiac health.

In addition to diuretics, medications classified as anticholinergic drugs are often prescribed to treat overactive bladder. By blocking acetylcholine receptors, anticholinergics reduce bladder contractions and increase bladder capacity. These medications may result in increased urine volume and decreased urgency (Arianayagam, n.d.). Interventions may include careful titration of dosage to balance therapeutic effects with potential side effects such as dry mouth or constipation.

Individuals taking alpha blockers, commonly prescribed for benign prostatic hyperplasia (BPH), may experience improved urinary flow due to relaxation of smooth muscle in the prostate and bladder neck (Arianayagam, n.d.). Interventions may involve monitoring for potential side effects like dizziness or orthostatic hypotension.

Understanding the impact of medications that increase urinary elimination is essential for healthcare providers to make informed decisions about prescribing and managing potential side effects. Regular monitoring, individualized adjustments, and patient education are crucial components of ensuring the optimal therapeutic benefits of these medications while minimizing any associated risks or complications.

Pathological Factors

Pathological factors influencing urinary elimination encompass a spectrum of conditions that can disrupt the normal functioning of the urinary system. These factors extend beyond the typical physiological processes and may involve disorders or dysfunctions affecting various components of the urinary system. Pathological factors can impede the intricate coordination required for fluid balance, waste elimination, and overall homeostasis maintained by the urinary system. These disruptions may result from diseases affecting the kidneys, urinary tract, or neurological pathways involved in micturition. Understanding these pathological factors is essential in comprehending the diverse challenges individuals may face in achieving and maintaining optimal urinary function. It also underscores the importance of a comprehensive approach to health care that considers both physiological and pathological aspects to effectively address urinary elimination issues.

Endocrine Disorders

Endocrine disorders can profoundly impact urinary elimination by disrupting the finely tuned hormonal balance that regulates kidney function and fluid balance. Hormones play a pivotal role in orchestrating various aspects of the urinary system, including blood pressure regulation, fluid and electrolyte balance, and the production of RBCs. Table 26.3 displays endocrine disorders that commonly affect urinary elimination.

Endocrine Disorder	How It Affects Urinary Elimination	Interventions
Cushing syndrome	Excess cortisol, as seen in Cushing syndrome, can lead to increased water retention and electrolyte imbalance, affecting urinary output. It may contribute to conditions such as hyperaldosteronism, leading to fluid and electrolyte disturbances.	Treating the underlying cause, often related to cortisol-producing tumors, involves surgery or medication. Managing fluid and electrolyte imbalances is crucial.
Diabetes mellitus	Uncontrolled diabetes can lead to elevated blood glucose levels, causing damage to the nerves (diabetic neuropathy) and blood vessels in the urinary system. This can result in bladder dysfunction, affecting the ability to sense when the bladder is full or causing incomplete emptying. Additionally, diabetes may contribute to polyuria, an increased production of urine, as the kidneys attempt to eliminate excess glucose from the bloodstream.	Proper management of diabetes through medication, lifestyle modifications, and regular monitoring of blood glucose levels is essential. Addressing urinary symptoms may involve medications to improve bladder function and control.
Hyperparathyroidism	Elevated levels of parathyroid hormone can lead to increased calcium in the blood (hypercalcemia), which may contribute to kidney stones. Kidney stones can obstruct urinary flow and lead to issues such as painful urination and urinary retention.	Treatment focuses on addressing the underlying cause through surgical removal of parathyroid tumors or medications to regulate calcium levels.
Hypothyroidism	Hypothyroidism can lead to reduced metabolism and decreased kidney blood flow, impacting the kidneys' ability to filter and eliminate waste products. This may result in decreased urine production.	Thyroid hormone replacement therapy is the primary treatment for hypothyroidism, restoring normal thyroid function and improving kidney function.
Polycystic ovary syndrome (PCOS)	PCOS, characterized by hormonal imbalances in women, may contribute to conditions such as insulin resistance and obesity, which can impact urinary health. Obesity, in particular, is linked to an increased risk of urinary incontinence.	Lifestyle modifications, weight management, and hormonal therapies may be part of the management approach for PCOS.

TABLE 26.3 Endocrine Disorders that Affect Urinary Elimination

Endocrine disorders pose intricate challenges to urinary elimination by affecting the hormonal control mechanisms that govern kidney function and fluid dynamics. Understanding these pathological factors is crucial for healthcare professionals to develop effective management strategies and optimize patient outcomes. Managing urinary elimination issues in the context of endocrine disorders involves an interdisciplinary approach, including endocrinologists, urologists, and other healthcare professionals. Treatment strategies aim to address the underlying endocrine disorder and manage associated urinary symptoms to improve overall quality of life.

Kidney Disorders

Kidney disorders encompass a spectrum of pathological factors that can significantly impact urinary elimination by

compromising the structure and function of the kidneys. Conditions such as chronic kidney disease (CKD), nephrotic syndrome, urinary tract infections (UTIs), kidney calculi (kidney stones), acute kidney injuries (AKI), and polycystic kidney disease (PKD) contribute to disturbances in the normal processes of urine formation, filtration, and excretion.

Characterized by gradual and irreversible loss of kidney function over time, **chronic kidney disease (CKD)** is a major contributor to impaired urinary elimination. As the kidneys become damaged, their ability to effectively filter and excrete waste products diminishes. This often leads to reduced urine output, alterations in electrolyte balance, and the accumulation of toxins in the bloodstream. Treatment focuses on managing underlying causes, such as hypertension or diabetes, to slow the progression of CKD. In advanced stages, a medical procedure that mechanically filters and purifies the blood in individuals with kidney failure called **dialysis** (Figure 26.5) or **kidney transplantation** (a surgical procedure in which a healthy kidney from a living or deceased donor is transplanted into a recipient with end-stage kidney disease to restore kidney function) may be considered.

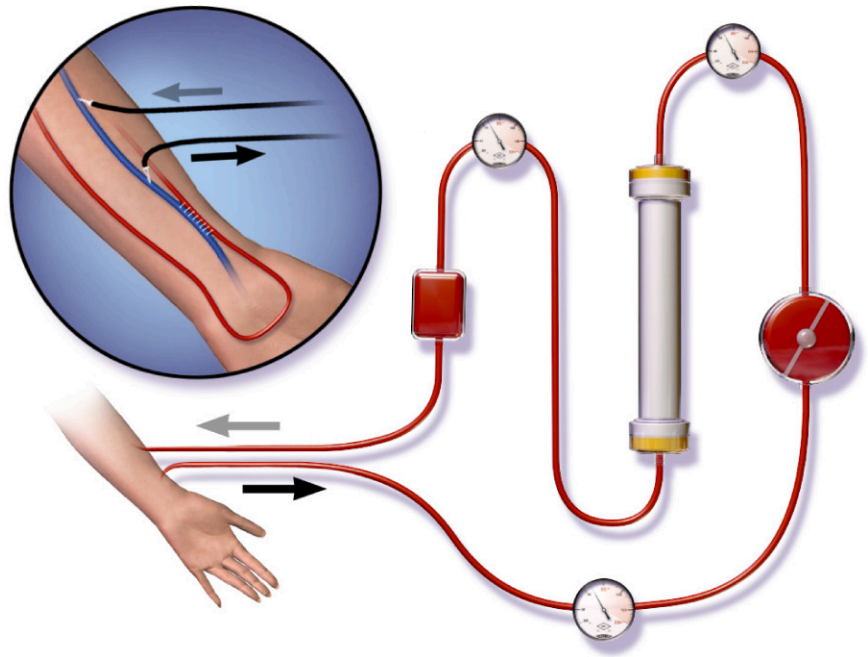

FIGURE 26.5 Blood is filtered externally in the process of dialysis. Blood is taken from a patient, run through a filtration machine, and then returned. (credit: "Blausen 0313 Dialysis.png" by BruceBlaus/Wikimedia Commons, CC BY 3.0)

PATIENT CONVERSATIONS

Navigating Dialysis and Its Impact on Urinary Elimination

Nurse: Good morning, Ms. Johnson. How have you been feeling lately?

Patient: Good morning. Well, you know, the usual. Managing, I guess.

Nurse: I can sense that managing it all might be challenging. I'm here to support you, both physically and emotionally. Your well-being is important to us. I wanted to talk to you about your experiences with dialysis and how it's been affecting your urinary elimination. Could you share a bit about any changes you've noticed?

Patient: Oh, sure. Since I started dialysis, I've noticed that I don't have to go as often as before. Sometimes, I don't go at all. It's a bit strange.

Nurse: That's insightful. Changes in frequency and volume are common with dialysis. Dialysis takes over the primary function of the kidneys, filtering waste and excess fluids from the blood directly, thus reducing the need for urine production. How about any challenges or discomfort during the procedure?

Patient: Well, there are days when I feel a bit tired afterward.

Nurse: It's completely normal to feel a bit fatigued, especially after the procedure. Dialysis can be demanding on

your body, and it's important to allow yourself some rest.

Patient: Yeah, that makes sense. I've been trying to stay hydrated, but not too hydrated, following the fluid restrictions you all gave me. And I've adjusted my schedule a bit to allow for some rest after the sessions. It seems to help.

Nurse: That's excellent. It's great that you've found a routine that works for you. Remember, if you ever experience any discomfort or notice significant changes, it's essential to let us know. We're here to support you and make any necessary adjustments to ensure your well-being.

Patient: I appreciate that. It's been a learning curve, but I'm getting the hang of it. Just taking it one day at a time.

Nurse: Absolutely, Ms. Johnson. Dialysis can be an adjustment, and you're doing remarkably well. If you ever have questions or need further guidance, we're here for you. Let's work together to make this journey as comfortable as possible.

Patient: Thank you. I appreciate your support and understanding.

Scenario follow-up: This conversation emphasizes the nurse's acknowledgment of the patient's experiences, provides context on the physiological aspects of dialysis, and reinforces the importance of the patient's well-being. The nurse encourages open communication and collaboration to navigate the challenges of dialysis and its impact on urinary elimination.

Another kidney disorder that disrupts urinary elimination is **nephrotic syndrome**. In this condition, damage to the glomeruli, the filtering units of the kidneys, results in increased permeability, allowing essential proteins like albumin to leak into the urine, a condition called **proteinuria**. This protein loss contributes to fluid imbalance, causing edema (fluid retention) and altering the composition of urine. Management includes medications to control proteinuria, diuretics to manage edema, and addressing underlying causes such as infections or autoimmune disorders.

A **urinary tract infection (UTI)** is a bacterial infection affecting any part of the urinary system; a UTI that affects the kidneys is called **pyelonephritis**. A UTI can lead to inflammation and secondary infections, causing pain, urgency, and changes in urinary habits. Antibiotics are commonly prescribed to treat bacterial infections. Drinking plenty of fluids and maintaining good hygiene can help prevent recurrent UTIs.

A kidney stone, or kidney calculus, is a solid, crystalline structure formed in the kidneys that can obstruct the normal flow of urine (Figure 26.6). Solid masses of these stones form from crystals that accumulate in the urinary tract, leading to pain, inflammation, and potential blockages. The presence of kidney stones can cause discomfort during urination and impact the volume and composition of urine. Treatment may involve pain management, increased fluid intake to facilitate stone passage, and in some cases, surgical intervention or shock wave lithotripsy, a medical procedure used to break up kidney stones into smaller pieces, allowing them to pass more easily through the urinary tract and be excreted from the body.

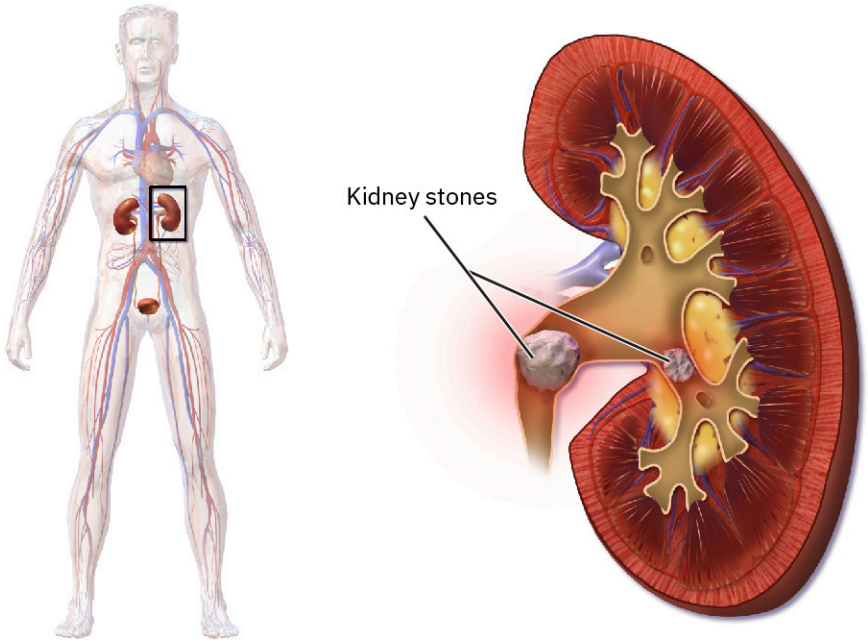

FIGURE 26.6 Kidney stones form in the kidney and may grow large enough to block the ureter. (credit: "Blausen 0595 KidneyStones.png" by BruceBlaus/Wikimedia Commons, CC BY 3.0)

A sudden and often reversible loss of kidney function called **acute kidney injury (AKI)** leads to decreased urine output and impaired filtration. An AKI can be classified into three different stages based on the underlying cause: prerenal, intrarenal (or intrinsic), and postrenal. Prerenal AKI occurs due to reduced blood flow to the kidneys, impairing their ability to filter waste from the blood. It is the most common type of AKI and is often reversible if the underlying cause is promptly addressed. Common causes include hypovolemia from dehydration, excessive bleeding, or severe burns; heart failure leading to reduced cardiac output and decreased kidney perfusion; sepsis causing widespread inflammation and decreased blood flow to the kidneys; and medications such as NSAIDs and ACE inhibitors that reduce kidney blood flow.

Intrarenal (intrinsic) AKI is due to direct damage to the kidney tissues, affecting their ability to filter and reabsorb substances properly. Causes include acute tubular necrosis, often caused by prolonged ischemia or exposure to nephrotoxic agents like certain antibiotics, radiographic contrast dyes, or heavy metals; glomerulonephritis, which is inflammation of the glomeruli potentially caused by autoimmune diseases or infections; interstitial nephritis, which is inflammation of the kidney's interstitial tissue triggered by allergic reactions to medications or infections; and vascular issues such as vasculitis or malignant hypertension that damage the blood vessels within the kidneys.

Postrenal AKI results from obstruction of the urinary tract, preventing urine from being expelled from the body, causing a buildup of pressure and subsequent kidney damage. Causes include ureteral obstruction due to kidney stones, tumors, or strictures; bladder outlet obstruction often caused by BPH in men; and urethral obstruction due to strictures or congenital abnormalities leading to blocked urine flow. Identifying and addressing the underlying cause, such as dehydration or medication toxicity, is crucial for effective treatment. Supportive measures, including fluid resuscitation and dialysis, may be necessary to manage the symptoms and prevent further complications.

An inherited disease characterized by the formation of fluid-filled cysts in the kidneys called **polycystic kidney disease (PKD)** leads to an enlargement of the organs (Figure 26.7). This can cause compression of surrounding structures and affect urinary elimination. Management involves controlling blood pressure, pain management, and in severe cases, considering surgical interventions such as cyst drainage or kidney transplantation.

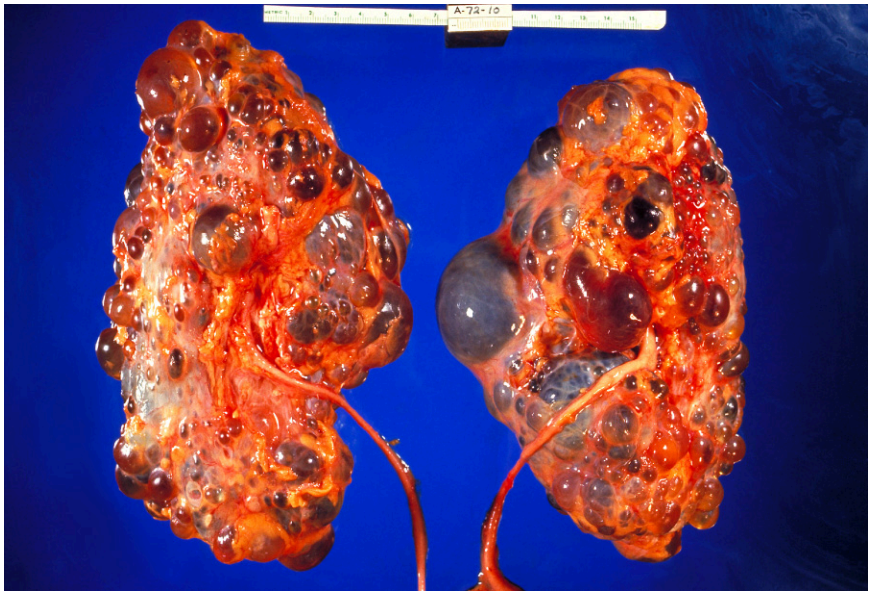

FIGURE 26.7 In polycystic kidney disease, the kidneys are injured by the formation of multiple cysts, which may grow to be quite large. (credit: "Polycystic kidneys, gross pathology CDC PHIL.png" by Dr. Edwin P. Ewing, Jr./CDC, Public Domain)

Kidney disorders represent a diverse range of pathological factors affecting urinary elimination by impairing the kidneys' ability to filter, regulate fluid balance, and excrete waste. Managing these conditions through targeted interventions requires a comprehensive understanding of their impact on urinary function.

Impaired Parasympathetic Impulses

Impaired parasympathetic impulses can significantly affect urinary elimination by disrupting the intricate coordination required for proper bladder function. The parasympathetic nervous system plays a crucial role in the micturition reflex, the process that signals the bladder to contract and the urethral sphincters to relax, facilitating the expulsion of urine. When these impulses are impaired, it can lead to difficulties in initiating or completing the micturition reflex. These difficulties may manifest as urinary retention, in which the bladder does not empty fully, or conversely, urinary incontinence, in which there is a lack of control over urine release. In some cases, there may be an inability to sense the fullness of the bladder, resulting in a lack of awareness of the need to urinate.

Several conditions can contribute to impaired parasympathetic impulses, disrupting the normal regulation of the micturition reflex. Neurological disorders such as multiple sclerosis, spinal cord injuries, or peripheral neuropathy can damage or interfere with the parasympathetic nerves involved in bladder control. Additionally, conditions like diabetic neuropathy, in which prolonged high blood sugar levels lead to nerve damage, can impact the parasympathetic signals responsible for coordinating the micturition process. Aging itself can also play a role, as the natural degeneration of nerves and muscles may affect the efficiency of parasympathetic impulses in the urinary system.

The consequence of impaired parasympathetic impulses is a disruption in the finely tuned balance required for controlled and voluntary micturition. Patients experiencing these issues may face challenges in managing their urinary elimination, necessitating a comprehensive, multifaceted approach that addresses the underlying neurological factors to optimize bladder function. For example, the following may be considered:

- Medications targeting nerve function or stimulating the parasympathetic nervous system may be prescribed, aiming to enhance signals that facilitate proper bladder emptying.
- Physical therapy, particularly pelvic floor exercises, can help improve muscle tone and coordination, optimizing the response to parasympathetic impulses.
- Biofeedback techniques offer a way for individuals to regain bladder control by providing real-time feedback on muscle activity.
- Behavioral therapy, including bladder training and habit retraining, helps establish more predictable voiding patterns.

Regardless of the specific approaches, collaborative efforts among healthcare professionals, including urologists

and neurologists, are essential to developing a comprehensive care plan. Through a combination of pharmacological, therapeutic, and lifestyle interventions, the goal is to mitigate the impact of impaired parasympathetic impulses, fostering improved urinary elimination and enhancing overall quality of life for individuals facing these challenges. Patient education and ongoing support are crucial elements in managing the condition, ensuring that interventions are tailored to the individual's specific needs and contributing factors.

26.4 The Nurse's Role in Urinary Elimination

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify how the nurse assesses for cues for impaired urinary elimination
- Articulate how the nurse manages patients with impaired urinary elimination
- Describe nursing procedures to promote urinary elimination

In the realm of nursing care, the assessment, management, and promotion of urinary elimination are critical to ensuring optimal physiological functioning and overall well-being for patients. The nurse's role in identifying cues for impaired urinary elimination involves a comprehensive and systematic approach, considering various factors that may influence urinary health. Through keen observation, thorough assessments, and effective communication with patients, nurses can discern signs of urinary issues. The nurse then assumes a crucial role in managing patients with impaired urinary elimination, implementing tailored interventions and collaborating with healthcare teams to address underlying causes. Furthermore, understanding nursing procedures that promote urinary elimination is essential for fostering patient comfort and preventing complications.

This section explores how nurses navigate the assessment process, manage patients facing urinary challenges, and employ procedures to enhance urinary elimination, contributing to a holistic and patient-centered approach in nursing practice.

Assessing and Recognizing Cues for Impaired Urinary Elimination

Assessing and recognizing cues for impaired urinary elimination are fundamental aspects of health care that involve systematic evaluation of various factors influencing urinary function. This comprehensive process aims to identify signs, symptoms, and potential underlying causes associated with impaired urinary elimination, encompassing conditions such as urinary retention, incontinence, and enuresis. Healthcare providers employ a multifaceted approach, considering medical history, physical examinations, diagnostic tests, and patient-reported cues to gain insights into the complexities of urinary issues. Patient assessments may extend across the life span, considering developmental, sociocultural, and psychological factors that contribute to impaired urinary function. By understanding and recognizing these cues, healthcare professionals can tailor interventions, implement targeted management strategies, and provide patient-centered care to enhance urinary health and overall well-being. This proactive approach is vital in ensuring early detection, accurate diagnosis, and effective interventions for individuals facing challenges related to impaired urinary elimination.

Analyzing Characteristics of a Urine Sample

Analyzing the characteristics of a urine sample is a crucial aspect of assessing and recognizing cues for impaired urinary elimination. A diagnostic examination of a urine sample to assess various aspects of a person's health is called **urinalysis**. This routine medical test provides valuable information about kidney function, hydration status, and the presence of underlying health conditions. The examination encompasses various aspects, including the physical properties of urine, such as color, clarity, and odor, as well as chemical and microscopic elements such as pH levels, specific gravity, and the presence of proteins, glucose, blood cells, and crystals. The procedure begins with the collection of a urine sample; skilled laboratory professionals then utilize a range of techniques, from chemical dipsticks to microscopic examination, to perform the analysis.

Normal urine should be clear, pale to light yellow in color, and not foul smelling. Alterations in urine color, such as darkening or unusual hues, can signal issues like dehydration, **hematuria** (visible or microscopic blood in urine), or liver dysfunction. Clarity of urine aids in identifying conditions like UTIs, while an abnormal odor may suggest infections or metabolic disorders. Specific gravity serves as an indicator of urine concentration and kidney function. Moreover, normal urinalysis results generally reveal the absence of abnormal elements like blood, glucose, and protein. Microscopic examination confirms the absence of unusual cells, crystals, or bacteria. Normal urine

characteristics can be found in Table 26.4.

Characteristic	Normal Values	Abnormal Interpretation
Color	Pale yellow to deep amber	Abnormal urine color, such as red or pink, dark yellow or amber, orange, green or blue, cloudy or murky, or foamy urine, can indicate various health conditions ranging from urinary tract infections and kidney stones to liver disease or medication side effects.
Odor	Not foul smelling	Foul-smelling urine may indicate the presence of infection or metabolic disorders.
Volume	750–2,000 mL/24 hours	Abnormal urine volume may indicate dehydration, overhydration, kidney disease, diabetes mellitus, or hormonal imbalances.
pH	4.5–8.0	Abnormal pH levels can indicate various conditions such as urinary tract infections, kidney stones, respiratory alkalosis or acidosis, metabolic acidosis or alkalosis, or certain dietary factors.
Specific gravity	1.003–1.032	Abnormal specific gravity levels may suggest dehydration, kidney disease, diabetes insipidus, or syndrome of inappropriate antidiuretic hormone secretion.
Osmolarity	40–1,350 mOsmol/kg	Abnormal osmolarity levels can indicate disorders affecting the kidneys' ability to concentrate urine, such as diabetes insipidus, or conditions causing excessive water loss, such as diabetes mellitus or hypernatremia.
Urobilinogen	0.2–1.0 mg/100 mL	Abnormal urobilinogen levels may indicate liver disease, bile duct obstruction, hemolytic disorders, or certain medications affecting bilirubin metabolism.
White blood cells	0–2 white blood cells per high-power field of microscope	Elevated levels may indicate inflammation or infection in the urinary tract.
Leukocyte esterase	None	Presence may indicate inflammation or infection in the urinary tract.
Protein	None or trace	Elevated levels may indicate kidney damage or disease.
Bilirubin	Less than 0.3 mg/100 mL	Elevated levels may indicate liver disease or obstruction of the bile ducts.
Ketones	None	Presence may indicate metabolic disorders such as diabetes or fasting.
Nitrites	None	Presence may indicate bacterial infection, particularly urinary tract infection (UTI).

TABLE 26.4 Normal Urine Characteristics

Characteristic	Normal Values	Abnormal Interpretation
Blood	None	Presence may indicate kidney stones, infection, or other urinary tract disorders.
Glucose	None	Presence may indicate diabetes or other metabolic disorders.

TABLE 26.4 Normal Urine Characteristics

Examining urine sediment to detect crystals or casts is an additional step in pinpointing particular kidney disorders. Conditions that frequently indicate infections include hematuria and **pyuria**, signified by the detection of at least ten white blood cells per cubic millimeter in a urine sample. In severe cases, this may even involve the potential visualization of pus. These aspects hold significant importance in the diagnostic process.

Monitoring urine volume is essential for assessing hydration status and potential issues with fluid balance. Urine volume varies considerably. The normal range is 1 to 2 L per day. The kidneys must produce a minimum urine volume of about 500 mL/day to rid the body of wastes. Output below this level may be caused by severe dehydration or kidney disease and is termed oliguria. The virtual absence of urine production is termed anuria, which may be due to conditions such as kidney failure or shock. Excessive urine production is polyuria, which may be due to diabetes mellitus or diabetes insipidus. Table 26.5 identifies the urine volumes associated with these conditions.

Volume Condition	Volume	Possible Causes
Normal	1–2 L/day	N/A
Polyuria	Greater than 2.5 L/day	Diabetes mellitus; diabetes insipidus; excess caffeine or alcohol; kidney disease; certain drugs, such as diuretics; sickle cell anemia; excessive water intake
Oliguria	300–500 mL/day	Dehydration, blood loss, diarrhea, cardiogenic shock, kidney disease, enlarged prostate
Anuria	Less than 50 mL/day	Kidney failure; obstruction, such as kidney stone or tumor; enlarged prostate

TABLE 26.5 Urine Volumes and Associated Conditions

Nurses play a crucial role in recognizing subtle changes in these urine characteristics that can serve as early indicators of impaired urinary elimination or underlying health issues. Regular and thorough urinalysis, along with a keen understanding of the significance of various parameters, allows healthcare professionals to promptly address and manage potential urinary concerns, contributing to overall patient well-being.

Urinary Retention

Assessing and recognizing cues for impaired urinary elimination, specifically urinary retention, are critical aspects of healthcare evaluation. Urinary retention refers to the inability to empty the bladder completely, leading to the accumulation of urine. The condition can be acute (e.g., the inability to urinate after receiving anesthesia during surgery) or chronic (e.g., a gradual inability to completely empty the bladder due to enlargement of the prostate gland in males). Urinary retention following anesthesia during surgery can occur due to the inhibitory effects of anesthesia on the reflexes that control bladder function, leading to temporary dysfunction in bladder muscle contraction and relaxation. Additionally, certain medications used during surgery, such as opioid analgesics and muscle relaxants, can further contribute to urinary retention by causing relaxation of the bladder muscles or interfering with the sensation of bladder fullness. In the case of prostate enlargement, urinary retention may occur

because of a blockage that partially or fully prevents the flow of urine (Figure 26.8) or because the bladder is unable to create a strong enough force to expel all the urine. In addition to causing discomfort, urinary retention increases the patient's risk for developing a UTI.

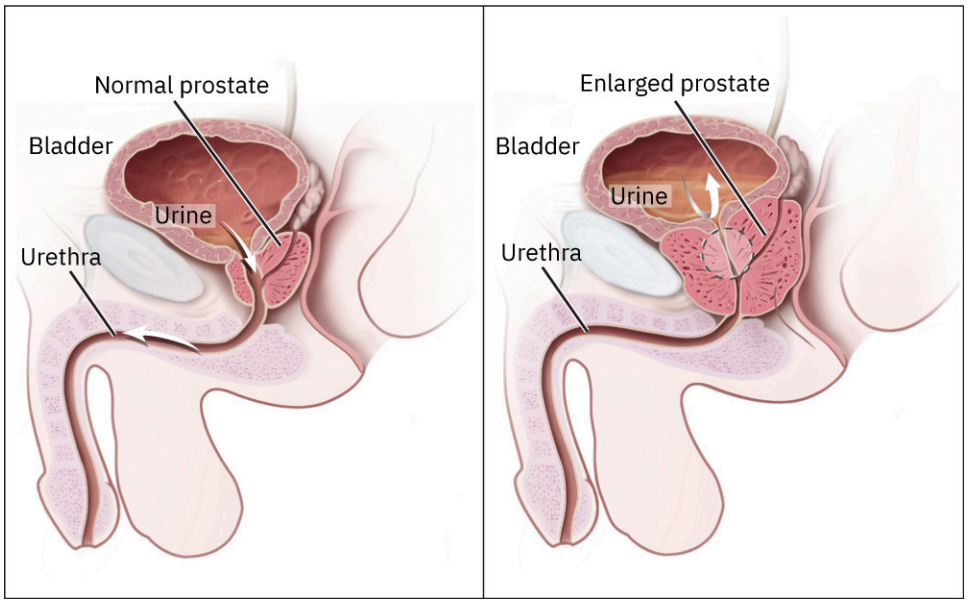

FIGURE 26.8 An enlarged prostate gland can block the flow of urine from the bladder into the urethra, causing urinary retention. (credit: modification of work from National Cancer Institute. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Clinically, urinary retention can present with symptoms such as a distended bladder, lower abdominal discomfort, and the inability to initiate or sustain a urine stream. Other times, the patient may have no symptoms at all. Healthcare providers rely on a patient's medical history, findings from a physical examination, and diagnostic tests to identify the underlying cause of urinary retention. When assessing a patient for urinary retention, healthcare providers may inquire about the frequency and volume of urination, the presence of straining during voiding, and any associated pain or discomfort.

Physical examination techniques, such as palpation of the lower abdomen for a palpable and distended bladder, and percussion to assess for dullness, can aid in diagnosing urinary retention. Additionally, ultrasound, bladder scans, or straight catheterization may be employed to determine **postvoid residual urine volume**, a measurement of urine left in the bladder after a patient has voided. The identification of urinary retention is crucial as it can result from various causes, including structural issues, neurological disorders, or medications. Normal PVR volume is typically between 50 and 100 mL. Prompt recognition allows healthcare professionals to implement appropriate interventions, such as catheterization or medications, and to address the underlying cause, preventing potential complications associated with prolonged urinary retention, such as UTIs or kidney damage. Alpha blockers, such as tamsulosin (Flomax), are used to treat urinary retention caused by an enlarged prostate. A surgery called transurethral resection of the prostate (TURP) may be performed to treat urinary retention caused by an enlarged prostate that is not responsive to medication. A TURP is performed by inserting a resectoscope through the urethra to remove excess prostate tissue causing the urinary obstruction. The procedure aims to relieve symptoms of BPH, such as difficulty urinating, frequent urination, and incomplete bladder emptying. The hopeful outcome of TURP is improved urinary flow and symptom relief.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 7

Refer to Chapter 19 Oxygenation and Perfusion, Chapter 22 Activity, and Chapter 24 Skin Integrity for Unfolding Case Study #4: Part 1, Unfolding Case Study #4: Part 2, Unfolding Case Study #4: Part 3, Unfolding Case Study #4: Part 4, Unfolding Case Study #4: Part 5, and Unfolding Case Study #4: Part 6 to review the patient data. Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and

swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living due to weakness and increased dyspnea. She has been admitted to the telemetry unit.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history**: Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Provider's Orders	**1145:** • Admit to telemetry unit • Twelve-lead electrocardiogram • Oxygen therapy to maintain oxygen saturation at greater than 92 percent • 20 mg Furosemide IV STAT
Nursing Notes	**1200:** Twelve-lead ECG completed; results show sinus tachycardia. 2 L oxygen via nasal cannula applied, patient reports improvement in dyspnea. IV placed in right AC, 20 mg Furosemide IV administered. Patient instructed to call before getting up to use bathroom. Patient has not voided since admission. Patient admitted to room on cardiac unit, and handoff given to telemetry nurse.
Nursing Notes	**1800:** Patient pressed call light to request to use the bathroom. Ambulated with ×1 assist from nurse due to unsteady gait. Patient was unable to void.

1. Recognize cues: What cues are most important for the nurse to recognize?
2. Analyze cues: What is the significance of the recognized cue in the previous question?
3. Prioritize hypotheses: What other findings should the nurse assess for that would be consistent with a diagnosis of urinary retention?
4. Generate solutions: What are the priority actions by the nurse?
5. Take action: The nurse performs a bladder scan and determines that the patient has 500 mL of urine in the bladder. What order does the nurse anticipate receiving from the provider after relaying this information?
6. Evaluate outcomes: What findings would indicate that the nurse's actions were effective?

Measuring Residual Urine

Measuring residual urine is a diagnostic procedure used to assess the amount of urine left in the bladder after a person has emptied it. This measurement is crucial in identifying conditions such as urinary retention, which can contribute to various urinary issues and may indicate an underlying problem. Several methods are commonly employed to measure residual urine:

- Bladder scan/ultrasound: This is a noninvasive and commonly used method that involves using a portable ultrasound device, known as a bladder scanner. This device uses sound waves to create an image of the bladder and measure the amount of urine present. It is a quick and painless way to assess postvoid residual volume.
- Straight catheterization: This is a more invasive method. A thin, flexible tube (catheter) is inserted into the bladder to drain any remaining urine. The volume of urine collected provides information about the residual urine.
- Catheterization with a Foley catheter: Like a straight catheter, a Foley catheter is inserted into the bladder, and the amount of urine drained is measured. However, the Foley catheter is often left in place to continuously drain urine, providing ongoing monitoring.

The choice of method depends on the clinical situation, patient factors, availability of equipment, and the provider's orders. Noninvasive methods like ultrasound are generally preferred when appropriate; however, catheterization may be necessary in certain situations, especially when a more accurate measurement is required or when immediate relief is needed in cases of significant urinary retention. The results of residual urine measurements guide healthcare professionals in developing appropriate treatment plans and interventions to address the underlying causes of impaired urinary elimination.

REAL RN STORIES

Navigating Urinary Challenges: A Nurse's Journey with Bladder Scanning and Straight Catheterization

Nurse: Tim, BSN
Clinical setting: Medical-surgical unit
Years in practice: 3
Facility location: The inner city of a large metropolitan area in Massachusetts

I encountered a situation where a bladder scan played a crucial role in assessing a patient's urinary elimination. The patient, a 65-year-old female recovering from a hysterectomy surgery, was experiencing difficulty voiding after the procedure. On recognizing the cues for potential urinary retention, I decided to use a bladder scan to measure the residual urine in the patient's bladder. The noninvasive nature of the scan made it an ideal choice, considering the patient's postoperative state.

The bladder scan revealed a significant amount of residual urine (over 400 mL), indicating a potential issue with complete emptying of the bladder. This information guided our care plan, and we implemented interventions promptly to address the urinary retention. In collaboration with the healthcare team, we initiated measures such as repositioning, encouraging ambulating, turning on the water faucet, and closely monitoring the patient's voiding patterns.

After another hour of no voiding, the patient started complaining of abdominal distension, which was causing pain to her surgical site. I scanned the patient's bladder again, and she had over 500 mL of urine in her bladder. The provider ordered a straight catheterization (sometimes referred to as an "in and out cath") to remove the patient's urine from her bladder. As soon as the catheter reached her bladder, the patient verbalized immediate relief of the abdominal pressure. Knowing the bladder scan had indicated there were at least 500 mL of urine in her bladder, I knew approximately how much urine to expect from the straight catheterization, ensuring her bladder was completely empty before removing the catheter. Thankfully, the patient was able to regain voiding functioning after this instance and did not need to be catheterized again.

Urinary Incontinence

Urinary incontinence is the involuntary loss of urine. Although abnormal, it is a common symptom that can seriously affect the physical, psychological, and social well-being of affected individuals of all ages. It has been estimated that one in five women develop urinary incontinence, but many are too embarrassed to discuss the condition with their healthcare providers. Some believe it is a normal part of aging that they have to live with. Incontinence can lead to isolation and depression as people, embarrassed by the condition, limit their activities and social

interactions. Nurses can greatly improve the quality of life for these patients by assessing for incontinence in a sensitive manner and then providing patient education about methods to prevent or manage symptoms.

Assessing and recognizing cues for urinary incontinence involve a comprehensive evaluation of factors contributing to involuntary urine leakage. The assessment process encompasses a detailed medical history, including the onset, frequency, and severity of incontinence episodes, as well as any potential triggers or exacerbating factors. Physical examinations, such as pelvic floor assessments, may be conducted to evaluate muscle tone and function. It is also essential to assess fluid intake, voiding patterns, and the presence of other contributing factors, such as neurological conditions or medications.

PATIENT CONVERSATIONS

How to Initiate a Patient Conversation about Urinary Incontinence

Urinary incontinence is a common health concern that significantly impacts the lives of many individuals. Engaging in open and empathetic conversations with patients about urinary incontinence is crucial for providing patient-centered care that addresses their unique needs.

Nurse: Good afternoon, Mr. Rodriguez. How are you feeling today?

Patient: Hello, Nurse Suzie. I'm feeling okay; however, I've been better. Lately, I've noticed that I'm having trouble controlling my urine, and it's been quite embarrassing.

Nurse: I appreciate you sharing that with me, Mr. Rodriguez. It's important for us to discuss any concerns you have. Can you tell me more about when this started and any patterns you've noticed?

Patient: It's been happening for a few weeks now, especially when I laugh or cough. It's frustrating.

Nurse: It's not uncommon, and we can work together to address this. Have you experienced any pain or discomfort while urinating?

Patient: No, it doesn't hurt, but it's just inconvenient.

Nurse: I see. Thank you for sharing that. We'll explore some strategies to manage this, and I'll also assess if there are any factors that may be causing these symptoms. In the meantime, if there's anything specific you've noticed that triggers it, let me know.

Patient: Thank you, Nurse Suzie. I appreciate your help.

Scenario follow-up: Initiating patient conversations about urinary incontinence in a sensitive and informative manner promotes patient engagement, empowerment, and collaborative decision-making for effective management of this common condition.

Analyzing characteristics of urine samples can also provide valuable insights into the nature of urinary incontinence. Understanding the specific type of urinary incontinence, whether **functional incontinence**, **mixed urinary incontinence**, **overflow incontinence**, **stress urinary incontinence**, or **urge urinary incontinence**, is crucial for tailoring appropriate interventions (Table 26.6).

Type of Incontinence	Description
Functional incontinence	• Occurs in older adults who have normal bladder control but struggle to get to the toilet in time to void because of arthritis or other disorders that make it hard to move quickly or manipulate zippers or buttons • Increased risk for functional incontinence in patients with dementia
Mixed urinary incontinence	• A combination of urinary frequency, urgency, and stress incontinence (Tso, 2018)
Overflow incontinence	• The leakage of small amounts of urine from a bladder that is always full • Tends to occur in males with enlarged prostates that prevent the complete emptying of the bladder (National Institute of Aging, 2022)
Stress urinary incontinence	• The involuntary loss of urine with intra-abdominal pressure (e.g., laughing and coughing) or physical exertion (e.g., jumping) • Caused by weak pelvic floor muscles, which often result from pregnancy and vaginal delivery, menopause, or vaginal hysterectomy (Tso, 2018)
Urge urinary incontinence (also referred to as "overactive bladder")	• Urine leakage accompanied by the sensation of a strong desire to void (urgency) • Caused by increased sensitivity to stimulation by the detrusor muscle in the bladder or decreased inhibitory control of the central nervous system (Tso, 2018)

TABLE 26.6 Types of Urinary Incontinence

Assessment begins with screening questions during a health history, including questions such as, "Do you have any problems with the leakage or dribbling of urine? "Do you ever have problems making it to the bathroom in time?" If a patient responds "Yes" to either of these questions, it is helpful to encourage them to start a voiding diary to record their urination habits and activities. The voiding diary should include the following:

- when and how much the patient urinates
- urinary leakage and what the patient was doing when it happened (e.g., running, biking, laughing)
- sudden urges to urinate
- how often the patient wakes at night to use the bathroom
- type and volume of food and beverages and the time of intake
- use of medication, such as diuretics, and the timing of administration
- any pain or problems experienced before, during, or after urinating (e.g., sudden urges, difficulty urinating, dribbling urine, weak urine flow, feeling as if the bladder is never empty) (Tso, 2018)

The provider should review the voiding diary, perform a physical assessment, and likely order diagnostic testing, such as a urine dip to check for a UTIs. Urodynamic diagnostic testing involves a variety of tests of bladder function, including filling, urine storage, and emptying (Tso, 2018). Individualized treatment will be based on the results of these assessments as well as any tests assessing for structural abnormalities in the patient's urinary system.

Nurses should use therapeutic communication with patients experiencing urinary incontinence to help them feel comfortable in expressing their fears, worries, and embarrassment about incontinence and work toward improving their quality of life. Let them know they are not alone and that urinary incontinence is not something they have to live with. Provide education about pelvic floor muscle training exercises, timed voiding, lifestyle modification, and incontinence products. Encourage them to learn more about their condition so they can optimally manage it and improve their quality of life (Tso, 2018).

Nurses play an important role in educating patients about bladder control training to prevent incontinence. Bladder control training includes several of these techniques:

- Pelvic muscle exercises (also known as Kegel exercises) work the muscles used to stop urination, which can help prevent stress incontinence. Learn more about pelvic floor exercises in the Link to Learning that follows.
- Timed voiding can be used to help a patient regain control of their bladder by urinating on a set schedule (e.g., every hour) whether they feel the urge to urinate or not. The time between bathroom trips is gradually extended, with the general goal of achieving four hours between voiding. Timed voiding helps to control urge and overflow incontinence by training the brain to be less sensitive to the sensation of the bladder walls expanding as they fill (National Institute of Aging, 2022).
- Lifestyle changes can help with incontinence. Losing weight, drinking less caffeine (found in coffee, tea, and many sodas), preventing constipation, and avoiding lifting heavy objects may help with incontinence. Limiting fluid intake before bedtime and scheduling prescribed diuretic medication in the morning or early afternoon are also helpful strategies (National Institute of Aging, 2022).
- Protective products may be needed to protect the skin from breakdown and prevent leakage onto clothing. Incontinence underwear has a waterproof liner and built-in cloth pad to absorb large amounts of urine, thereby protecting skin from moisture and controlling odor. It is available in daytime styles and nighttime styles, which are designed to hold more urine. A product resembling a tampon is another option for females. It is made of absorbent fibers that support the urethra and prevent accidental leaks without inhibiting urination; it also will not move or fall out during bowel movements (National Institute of Aging, 2022).

LINK TO LEARNING

Watch this video from Michigan Medicine to learn more about Kegel exercises (https://openstax.org/r/77kegel) and why they work.

Additionally, patient education regarding other treatment options may be provided:

- Biofeedback uses sensors to help a patient become more aware of signals from the body to regain control over the muscles in their bladder and urethra (National Institute of Aging, 2022).
- Mechanical devices, such as pessaries, support the urethra and can support vaginal prolapse to prevent or reduce urinary leakage. They come in various sizes and are professionally fitted by trained healthcare providers. They should be removed, cleaned, and reinserted regularly to prevent infection. Some of the devices, such as ring pessaries, can be removed and reinserted by the patient. They are similar to a diaphragm and can be removed or left in place for sexual intercourse (National Institute of Aging, 2022).
- Anticholinergic medications, such as oxybutynin, may be prescribed to treat urge urinary incontinence and mixed urinary incontinence. They block the action of acetylcholine and provide an antispasmodic effect on smooth muscle to relieve symptoms. However, side effects include dry mouth, constipation, dizziness, and drowsiness, which can increase fall risk in older adults.
- If bladder training and medications are not effective, surgery may be performed, such as a sling procedure or a bladder neck suspension (National Institute of Aging, 2022).

Enuresis

Commonly referred to as bedwetting or nocturnal enuresis, **enuresis** can be a challenging condition that impacts both children and adults. Assessing and recognizing cues for enuresis involve thorough evaluation of involuntary nighttime bedwetting, particularly in children beyond the age of expected bladder control. The assessment process typically includes a comprehensive medical history that focuses on the frequency and patterns of bedwetting episodes, any associated daytime symptoms, and relevant psychosocial factors.

In pediatric cases, the evaluation may extend to developmental considerations, assessing the child's level of bladder control and emotional well-being. For adults, the assessment may encompass medical, psychological, and lifestyle factors that could contribute to enuresis. It is crucial to rule out potential underlying causes, such as UTIs, diabetes, or neurological issues, through appropriate diagnostic tests.

Understanding the nature of enuresis, whether primary (never achieved continence) or secondary (recurrence after

a period of dryness), is essential for tailoring intervention strategies. Behavioral approaches, moisture alarms, and medications are common components of a comprehensive management plan; it is also important to address any psychosocial factors contributing to stress or anxiety.

The nuanced assessment of enuresis cues enables healthcare providers to implement targeted interventions, providing support and guidance to individuals experiencing bedwetting. Recognizing the various factors influencing enuresis is fundamental in developing effective strategies to manage and improve the overall quality of life for those affected by this condition.

PATIENT CONVERSATIONS

Assessing Enuresis with a Patient-Centered Approach

Nurse: Good morning, Mrs. Li. I hope you're feeling well today. My name is Nurse Martinez. I understand that you've been dealing with some concerns related to bedwetting. Can you share a bit more about what you've been experiencing?

Patient: Good morning, Nurse Martinez. Yes, it's been quite embarrassing, but I've been wetting the bed at night, and it's been happening more frequently lately.

Nurse: Thank you for sharing that with me. I appreciate your openness. I'd like to ask you a few questions to better understand your situation. First, how often would you say you experience bedwetting, and has there been any change in the frequency over time?

Patient: It happens a few times a week now, but it didn't use to be this often. Maybe once a month before.

Nurse: I see. And have you noticed any patterns or triggers associated with the bedwetting episodes? For example, does it happen more on certain nights or after specific events or activities?

Patient: Well, I haven't really noticed any patterns, but it does seem to happen more when I'm feeling stressed or anxious.

Nurse: That's valuable information. Stress can certainly play a role. Now, regarding your overall health, have you experienced any recent illnesses or changes in your urinary habits during the day?

Patient: No, nothing unusual during the day. Just the bedwetting at night.

Nurse: Okay. Your provider will be here in a few minutes to conduct a physical assessment and check for any signs that might be contributing to the bedwetting. This will include a general examination and possibly some diagnostic tests to rule out any underlying issues.

Patient: I just want to figure out why this is happening.

Nurse: I understand, Mrs. Li. We will work together to figure out what is going on. Then, we can discuss possible interventions and strategies to help manage or alleviate the bedwetting. If you have any questions or concerns along the way, please feel free to let me know.

Scenario follow-up: This conversation is a starting point for the nurse to gather information, establish rapport, and plan further assessments and interventions tailored to the patient's needs.

Managing Patients with Impaired Urinary Elimination

Managing patients with impaired urinary elimination requires an interdisciplinary and patient-centered approach to address the diverse challenges individuals may face in maintaining optimal urinary function. Urinary elimination is a fundamental aspect of physiological well-being, and disruptions in this process can significantly impact a patient's quality of life. Nurses play a crucial role in assessing, recognizing cues, and implementing targeted interventions to manage impaired urinary elimination effectively. This comprehensive care involves understanding the underlying causes of urinary issues, tailoring interventions to the patient's unique needs, and continuously evaluating the effectiveness of implemented measures. From providing meticulous skin care to implementing bladder training and repositioning techniques, nurses strive to enhance patient comfort, prevent complications, and promote the

restoration or maintenance of optimal urinary function. By integrating evidence-based practices and maintaining open communication with patients, nurses caring for those with impaired urinary elimination aim to address both the physiological and psychosocial aspects of this essential bodily function.

Providing Skin Care

Managing patients with impaired urinary elimination necessitates a multifaceted approach, and providing effective skin care is a crucial aspect of this endeavor. Individuals experiencing urinary incontinence or retention are at an increased risk of skin-related complications, such as irritation, inflammation, pressure ulcers, and potential infections. The nurse's role in this context involves diligent monitoring of the perineal area and surrounding skin, identifying early signs of skin breakdown.

Regular cleansing and gentle drying of the skin are paramount to prevent **moisture-related dermatitis**. Moisture-related dermatitis, often referred to as moisture-associated skin damage, is a skin condition characterized by inflammation and irritation resulting from prolonged exposure to moisture. This type of dermatitis is particularly common in areas of the body where the skin is subjected to moisture, friction, and occlusion, creating an environment conducive to skin breakdown. Application of moisture barriers, protective creams, or ointments helps create a barrier against the corrosive effects of urine and promotes skin integrity. Beyond these direct interventions, nurses should collaborate with interdisciplinary teams to formulate individualized care plans. These plans not only address immediate skin care needs but also target the root causes of impaired urinary elimination.

Patient education is a cornerstone of nursing care in this context. Through ongoing assessment and education initiatives, nurses empower patients to actively engage in their own skin care routines. This collaborative approach not only aids in managing the complexities associated with impaired urinary elimination but also promotes a sense of autonomy for patients to actively participate in decisions regarding their health care and to take actions to improve their own health outcomes

Repositioning

Repositioning is a crucial aspect of managing patients with impaired urinary elimination. Particularly for individuals experiencing mobility challenges or those susceptible to urinary retention, extended periods of immobility can lead to discomfort, skin breakdown, and potential urinary complications. Regular and purposeful repositioning not only helps alleviate pressure on vulnerable areas, such as the sacral region, reducing the risk of pressure ulcers, but it also facilitates optimal bladder function.

Repositioning strategies aim to enhance patient comfort, maintain skin integrity, and support overall urinary health. Nurses play a vital role in assessing the individualized needs of patients, implementing appropriate repositioning schedules and ensuring a holistic approach to care that addresses both mobility concerns and urinary elimination challenges. This proactive approach to repositioning contributes to the overall well-being of patients with impaired urinary elimination, promoting comfort and minimizing the risk of complications associated with prolonged immobility.

Bladder Training

A therapeutic approach, **bladder training**, is employed by healthcare professionals to manage patients with impaired urinary elimination, particularly those experiencing issues such as urinary urgency, frequency, or incontinence. This structured program aims to enhance bladder control and improve voiding habits through behavioral interventions. The process involves creating a voiding schedule, gradually extending the time between bathroom visits, and implementing strategies to suppress the urge to urinate. Additionally, patients are encouraged to practice pelvic floor exercises to strengthen the muscles responsible for bladder function. Bladder training is tailored to individual needs and may include counseling to address psychological factors contributing to urinary issues. This holistic approach empowers patients to regain control over their urinary function, promoting improved continence and overall quality of life. Regular monitoring and adjustment of the bladder training plan are essential to ensure its effectiveness and make necessary modifications based on the patient's progress.

Evaluating Interventions for Urinary Elimination

Evaluating the restoration or maintenance of urinary elimination is a crucial aspect of nursing care for patients facing impaired urinary function. After implementing interventions such as skin care, repositioning, and bladder training, it is essential for the nurse to assess the effectiveness of these measures in promoting optimal urinary elimination.

This evaluation involves a comprehensive review of the patient's urinary patterns, noting changes in frequency, urgency, and the ability to initiate and complete voiding. The nurse should also monitor the volume and characteristics of the urine, looking for signs of improvement or persistence of issues. Additionally, assessing the patient's comfort level, any reported discomfort or pain during urination, and the impact on overall well-being provides valuable information for evaluating the success of interventions. Regular communication with the patient to gather subjective feedback and address any concerns is integral to this evaluative process. The nurse collaborates with the healthcare team to make necessary adjustments to the care plan based on the assessment findings, ensuring a patient-centered approach that prioritizes the restoration and maintenance of optimal urinary elimination.

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize a Hypothesis: Determining Restoration of Urinary Elimination

A patient who recently underwent bladder training and received meticulous skin care for urinary incontinence reports a decrease in urgency, improved voiding habits, and overall satisfaction with the interventions. The nurse gathers data on the patient's reported symptoms, including changes in urgency and voiding habits; reviews the patient's urinary patterns, characteristics of urine, and comfort level; and utilizes assessment tools, such as voiding diaries and patient interviews, to collect comprehensive data. From the assessment findings, the nurse recognizes improvements in urgency, voiding habits, and patient satisfaction as positive cues. The nurse prioritizes the hypothesis that urinary elimination has been restored based on the positive cues identified and evaluates the consistency and significance of improvements to confirm the effectiveness of implemented interventions. Applying the clinical judgment measurement model to this scenario involves a systematic and data-driven approach, allowing nurses to prioritize and validate the hypothesis of restored urinary elimination based on positive cues and patient feedback. This process contributes to effective clinical judgment and decision-making for enhanced patient outcomes.

Nursing Procedures to Promote Urinary Elimination

Nursing procedures aimed at promoting urinary elimination address a range of conditions that may compromise this essential physiological function. These procedures encompass a variety of interventions designed to assess, manage, and support individuals experiencing impaired urinary elimination. From the meticulous analysis of urine characteristics to the implementation of catheterization techniques and other interventions, nurses play a vital role in ensuring the well-being and comfort of patients with urinary challenges. The emphasis on maintaining optimal urinary function underscores the importance of these nursing procedures in preventing complications, managing symptoms, and ultimately enhancing the overall quality of patient care.

Urinary Catheterization

A nursing procedure, **urinary catheterization** is employed to promote urinary elimination in situations where a patient is unable to void voluntarily or when continuous drainage of urine is necessary. This procedure involves the insertion of a flexible tube, or catheter, through the urethra into the bladder. The catheter can be either removed after the bladder is emptied or connected to a drainage bag to allow the continuous collection of urine. Indications for urinary catheterization include urinary retention, surgical procedures, the need to monitor urine output in critically ill patients, the facilitation of healing in certain medical conditions, and to monitor the effectiveness of treatments provided to the patient to measure expected improved patient outcomes. While urinary catheterization is an effective intervention, it poses potential risks, such as the risk of infection (referred to as a **catheter-associated urinary tract infection**) or trauma to the urinary tract. Therefore, it is crucial for healthcare professionals to adhere to strict aseptic techniques during the insertion and maintenance of urinary catheters and to assess the patient regularly for signs of complication, such as fever, new onset of pain, and UTIs. This nursing procedure requires skill and precision to ensure patient comfort, prevent complications, and maintain optimal urinary function.

Performing Irrigations

A **urinary irrigation** is a nursing procedure designed to facilitate and maintain optimal urinary elimination by ensuring the cleanliness and patency of catheters. This technique involves the introduction of a sterile solution into

the bladder through the catheter, with the primary goals of preventing blockages, promoting urine flow, and minimizing the risk of infection. Irrigations are commonly ordered when there is evidence of catheter obstruction due to sediment or blood clots, and they play a crucial role in enhancing the overall effectiveness of urinary catheterization.

To perform bladder irrigation, a catheter is gently inserted into the bladder through the urethra. The sterile solution is then allowed to flow into the bladder, filling it to a predetermined volume. After a brief time, the solution is drained out, carrying away contaminants. This process may be repeated until the irrigating fluid returns clear, indicating successful cleansing, or it may be ordered as continuous bladder irrigation for postsurgical procedures or patients with hematuria (blood in the urine). Throughout the procedure, close monitoring of the patient's response, vital signs, and any signs of discomfort or complications is essential. Healthcare providers adhere to strict aseptic techniques to minimize the risk of infection during the procedure. After irrigation, the catheter is secured, and the patient is closely observed for any adverse reactions.

One notable concern is the risk of infection, as the procedure itself may introduce bacteria into the urinary tract, potentially leading to UTIs. The insertion and manipulation of catheters during irrigation pose a risk of trauma or injury to the urethra, bladder, or surrounding structures, resulting in bleeding, pain, or other complications. Additionally, there is the potential for fluid and electrolyte imbalances, especially if excessive irrigation or absorption of irrigating solutions occurs. Allergic reactions to the solutions used in irrigation, ranging from mild skin reactions to severe respiratory distress, can also occur. In rare instances, aggressive or improperly performed irrigation may lead to **bladder perforation**, a rupture or tear in the wall of the urinary bladder; this is a serious complication that requires immediate attention. Moreover, urinary irrigation, often involving catheters, may increase the overall risk of catheter-associated complications, including infections and catheter-related trauma.

Summary

26.1 Urinary System

The urinary system, composed of the kidneys, ureters, bladder, and urethra, is a vital component of the human anatomy, responsible for maintaining internal balance and waste elimination. The kidneys act as intricate filters, extracting excess fluids and waste products, with nephrons playing a central role. Ureters transport urine to the bladder, a muscular reservoir, while the urethra serves as the exit pathway.

The process of urine formation is orchestrated by the kidneys and involves glomerular filtration, tubular reabsorption, and tubular secretion. Glomerular filtration initiates in the glomerulus, where blood is filtered to form an initial filtrate. Tubular reabsorption selectively reclaims vital substances from this filtrate, and tubular secretion actively eliminates specific substances into the renal tubules. These processes fine-tune urine composition, regulating fluid balance and waste removal.

The act of urination, governed by the micturition reflex, involves a complex interplay between the nervous and muscular systems. The stages, including resting, filling, and voiding, ensure controlled and voluntary release of urine. Dysfunction in this process can lead to issues such as incontinence or retention.

26.2 Functions of the Urinary System

The urinary system orchestrates the elimination of crucial waste products, including urea, creatinine, and uric acid, processes that are vital to maintaining the body's internal balance. These nitrogenous by-products are meticulously filtered by the kidneys. Urea, formed in the liver during protein breakdown, undergoes kidney filtration, preventing its accumulation and supporting the body's chemical composition. Creatinine, a product of muscle metabolism, is consistently filtered by the kidneys, with elevated levels indicating potential kidney issues. Uric acid, arising from purine breakdown, undergoes kidney filtration to prevent elevated blood levels, averting conditions like gout.

Fluid and electrolyte balance are also finely regulated by the urinary system. The kidneys, acting as precise filters, undergo glomerular filtration, tubular reabsorption, and tubular secretion to regulate electrolytes, fluid volume, and metabolic waste. These processes contribute to blood volume, pressure regulation, and electrolyte concentrations, sustaining overall physiological balance. The urinary system also actively participates in maintaining acid-base equilibrium by selectively excreting hydrogen ions and reabsorbing bicarbonate ions, ensuring optimal pH levels in bodily fluids.

The kidney system releases hormones to regulate blood pressure through the RAAS. Renin, produced by the kidneys, initiates a cascade leading to the production of angiotensin II, a vasoconstrictor influencing blood pressure. Additionally, the urinary system controls RBC production through erythropoietin (EPO) release. Synthesized by the kidneys in response to low oxygen levels, EPO stimulates bone marrow to produce RBCs, ensuring oxygen transport and contributing to homeostasis.

26.3 Factors Affecting Urinary Elimination

Impaired urinary elimination presents a multifaceted challenge, demanding a comprehensive understanding of various considerations. Developmental, sociocultural, psychological, and physiological factors collectively shape an individual's experience with impaired urinary elimination. Developmental considerations vary across the life span, impacting bladder control and toileting habits differently in infants, children, adolescents, adults, and older adults. Sociocultural factors, including cultural beliefs and access to health care, significantly influence attitudes toward urinary health. Adequate fluid and food intake, along with muscle tone, are essential considerations, as they affect urine concentration and the muscles involved in voiding.

Psychological factors, such as stress and mental health, have a crucial impact on the nervous system's regulation of the micturition reflex. Muscle tone and activity are critical, with weakened pelvic floor muscles leading to issues like stress incontinence. Medications can either impair or enhance urinary elimination, requiring careful consideration of their effects. Pathological factors, including endocrine and kidney disorders, as well as impaired parasympathetic impulses, contribute to disruptions in the urinary system's normal functioning. Understanding these factors is vital for healthcare professionals to provide individualized care that promotes optimal urinary health.

26.4 The Nurse's Role in Urinary Elimination

The comprehensive assessment and recognition of cues for impaired urinary elimination form a fundamental aspect of health care, requiring a systematic evaluation of various factors influencing urinary function. Healthcare professionals employ a multifaceted approach, considering medical history, physical examinations, diagnostic tests, and patient-reported cues to identify signs, symptoms, and potential underlying causes associated with impaired urinary elimination. By understanding and recognizing these cues, nurses can tailor interventions, implement targeted management strategies, and provide patient-centered care to enhance urinary health and overall well-being.

Analyzing the characteristics of a urine sample is a crucial component of assessing and recognizing cues for impaired urinary elimination. A comprehensive urinalysis, considering parameters like color, clarity, odor, volume, and specific gravity, provides valuable insights into kidney and overall health. Nurses play a crucial role in recognizing subtle changes in these urine characteristics, which serve as early indicators of impaired urinary elimination or underlying health issues. Regular and thorough urinalysis, along with a keen understanding of the significance of various parameters, allows healthcare professionals to promptly address and manage potential urinary concerns.

Assessing urinary retention involves a critical evaluation of a patient's ability to empty the bladder completely. This condition can result from various causes, and healthcare providers employ techniques such as palpation, percussion, and ultrasound to diagnose and measure postvoid residual urine volume. Measuring residual urine is a diagnostic procedure crucial for identifying conditions like urinary retention. Various methods, including bladder scans, straight catheterization, and catheterization with a Foley catheter, provide information about the volume of urine left in the bladder after voiding.

Assessing urinary incontinence involves a comprehensive evaluation of factors contributing to involuntary urine leakage. Recognizing the multifaceted nature of urinary incontinence and addressing underlying causes are fundamental in promoting effective management and improving the overall well-being of individuals experiencing this condition. Assessing enuresis involves a thorough evaluation of involuntary nighttime bedwetting. Understanding the nature of enuresis is essential for tailoring intervention strategies, including behavioral approaches, moisture alarms, medications, and efforts to address psychosocial factors.

Managing patients with impaired urinary elimination requires a multifaceted and patient-centered approach. Providing skin care is crucial for preventing complications such as irritation, inflammation, and pressure ulcers. Repositioning is essential to alleviate pressure on vulnerable areas and facilitate optimal bladder function. Bladder training, a structured program, aims to enhance bladder control and improve voiding habits through behavioral interventions. Evaluating the restoration or maintenance of urinary elimination involves a comprehensive review of urinary patterns and patient comfort, guiding adjustments to the care plan.

Nursing procedures to promote urinary elimination include urinary catheterization, a procedure to facilitate drainage in situations where voluntary voiding is not possible. Performing irrigations is essential for maintaining cleanliness and patency of catheters, preventing blockages, and minimizing infection risks. These procedures require precision, adherence to aseptic techniques, and regular patient monitoring to ensure optimal urinary function.

Key Terms

acute kidney injury (AKI) a sudden and often reversible loss of kidney function
aldosterone a hormone that promotes the reabsorption of sodium and water in the kidneys, contributing to an increase in blood volume and blood pressure
angiotensin I a peptide hormone
angiotensin II a potent vasoconstrictor
angiotensinogen a protein produced by the liver that is cleaved by renin to form angiotensin I
anuria a condition marked by the absence of urine output, presenting as less than 50 mL of urine within a twenty-four-hour period
bladder the storage reservoir for urine prior to its regulated expulsion from the body
bladder perforation a rupture or tear in the wall of the urinary bladder
bladder training a structured program aiming to improve bladder control and reduce urinary frequency or urgency

catheter-associated urinary tract infection urinary tract infection that occurs in patients who have indwelling urinary catheters
chronic kidney disease (CKD) a condition characterized by gradual and irreversible loss of kidney function over time
continence the ability to control and maintain bladder functions
creatinine a waste product that results from the breakdown of creatine phosphate in muscles
detrusor muscle the layer of smooth muscle within the bladder wall
dialysis a medical procedure that mechanically filters and purifies the blood in individuals with kidney failure
dysuria painful or difficult urination
enuresis urination during sleep
erythropoiesis the production of red blood cells
erythropoietin (EPO) a glycoprotein hormone that plays a crucial role in the regulation of red blood cell production
external urethral sphincter a ringlike muscle that aids in the regulation of urine flow
functional incontinence occurs in older adults who have normal bladder control but struggle to get to the toilet in time to void
glomerular filtrate fluid that results from the filtration process in the glomerulus, containing essential substances needed by the body, such as water and electrolytes, as well as waste materials that need to be eliminated through urine
glomerular filtration the initial step in the process of urine formation
glomerular filtration rate (GFR) a measure of the rate at which glomerular filtration occurs; quantifies the volume of filtrate formed by the kidneys per unit of time
glomerulus the network of tiny blood vessels in the kidneys
gout a form of arthritis characterized by sudden and severe pain, swelling, and redness in the joints, primarily the big toe, due to the deposition of urate crystals
hematuria visible or microscopic blood in urine
kidney a bean-shaped organ located on either side of the spine, just below the ribcage
kidney calculus solid, crystalline structures formed in the kidneys that can obstruct the normal flow of urine
kidney transplantation a surgical procedure in which a healthy kidney from a living or deceased donor is transplanted into a recipient with end-stage kidney disease to restore kidney function
micturition reflex an involuntary physiological response that initiates the contraction of the bladder's detrusor muscle and relaxation of the internal urethral sphincter, facilitating the expulsion of urine from the body
mixed urinary incontinence a combination of urinary frequency, urgency, and stress incontinence
moisture-related dermatitis a skin condition characterized by inflammation and irritation resulting from prolonged exposure to moisture
nephron a microscopic unit within the kidneys; a functional unit responsible for blood filtration and urine formation
nephrotic syndrome a kidney disorder characterized by excessive protein loss in the urine
nocturia regular nighttime urination
oliguria reduced urine output
overflow incontinence the leakage of small amounts of urine from a bladder that is always full
polycystic kidney disease (PKD) an inherited disease characterized by the formation of fluid-filled cysts in the kidneys
polyuria excessive urine output, surpassing 2.5 L over twenty-four hours
postvoid residual urine volume a measurement of urine left in the bladder after a patient has voided; obtained using ultrasound, a bladder scanner, or straight catheterization
proteinuria a medical condition characterized by the presence of abnormal amounts of protein in the urine
purine organic compound present in various foods that produces uric acid when it is broken down
pyelonephritis a bacterial infection affecting the kidneys
pyuria the presence of at least ten white blood cells per cubic millimeter in a urine sample
renal capsule the protective layer encapsulating the kidneys
renal cortex the outer layer of the kidneys
renal medulla the inner region of the kidneys
renal pelvis a funnel-shaped structure that directs urine into the ureter
renin an enzyme synthesized and discharged by specialized cells in the kidneys

renin-angiotensin-aldosterone system (RAAS) a complex hormonal cascade that plays a crucial role in regulating blood pressure, electrolyte balance, and fluid volume within the body
stress urinary incontinence involuntary loss of urine with intra-abdominal pressure
trigone the triangular area in the bladder that acts as a physiological valve, preventing reflux of urine into the ureters
tubular reabsorption the physiological process in the kidneys by which essential substances, including water, glucose, ions, and other necessary molecules, are selectively reclaimed from the filtrate in the renal tubules and returned to the bloodstream
tubular secretion the active transport process in the kidneys by which certain substances, including excess ions, drugs, and metabolic by-products, are selectively moved from the peritubular capillaries into the renal tubules during urine formation
urate crystal solid structure formed when elevated uric acid levels in the blood lead to the accumulation of crystals in joints
urea liquid waste produced by the kidneys during the breakdown of protein-containing foods
ureter one of two muscular tubes that serve as conduits for transporting urine from the kidneys to the urinary bladder
urethra a tubular structure that serves as the conduit for the expulsion of urine from the body
urge urinary incontinence urine leakage accompanied by the sensation of a strong desire to void (urgency)
uric acid a chemical compound formed during the breakdown of purines and excreted by the kidneys
urinalysis a diagnostic examination of a urine sample to assess various aspects of a person's health
urinary catheterization a nursing procedure to promote urinary elimination in situations when a patient is unable to void voluntarily or when continuous drainage of urine is necessary
urinary frequency the urge to urinate multiple times throughout the day or night, often accompanied by a compelling sense of urgency
urinary incontinence the involuntary loss of bladder control, leading to the unintentional release of urine
urinary irrigation a procedure that involves introducing a solution into the urinary tract to cleanse, flush, or treat the bladder and associated structures
urinary retention the inability to fully empty the bladder
urinary system a sophisticated network of organs responsible for producing, storing, and eliminating urine from the body
urinary tract infection (UTI) a bacterial infection affecting any part of the urinary system
urinary urgency the sensation of an urgent need to void
urination the physiological process of eliminating urine from the bladder through the urethra
voiding stage the final phase of the urinary process in which urine is expelled from the bladder through the urethra and out of the body

Assessments

Review Questions

1. What is the primary function of the kidneys in the urinary system?
   a. storage of urine
   b. filtration of blood
   c. muscular contractions
   d. urethra expansion

2. What anatomical structure prevents reflux of urine into the ureters?
   a. trigone
   b. renal capsule
   c. nephron
   d. urethral sphincter

3. What is the primary function of glomerular filtration in the process of urine formation?
   a. reabsorbing essential substances

b. selectively transporting ions
c. filtering blood to form an initial filtrate
d. regulating blood pH

4. What is the role of tubular secretion in urine formation?
a. reabsorbing water
b. actively transporting substances into renal tubules
c. filtrating blood
d. controlling blood pressure

5. What is the primary role of the detrusor muscle during the resting stage of micturition?
a. initiating urination
b. relaxing the internal urethral sphincter
c. contraction to accommodate urine
d. involuntary control

6. Why is regular monitoring of urea levels essential for assessing kidney function?
a. to detect liver disorders
b. to assess metabolic health
c. to identify urea deficiencies
d. to evaluate kidney health

7. In the glomerular filtration process, what substances are meticulously filtered from the bloodstream into the renal tubules?
a. oxygen and carbon dioxide
b. water and electrolytes
c. proteins and carbohydrates
d. red and white blood cells

8. What triggers the release of erythropoietin (EPO) by the kidneys?
a. high oxygen levels in the blood
b. low oxygen levels in the blood
c. elevated red blood cell count
d. increased carbon dioxide levels in the blood

9. The preceptor is reviewing functions of the urinary system with the nursing student. What statement made by the nursing student would demonstrate correct understanding of functions of the urinary system?
a. "Erythropoietin (EPO) is a glycoprotein hormone that plays a crucial role in the regulation of white blood cell production."
b. "The release of renin into the bloodstream is prompted by conditions like increased blood flow to the kidneys or an increase in blood pressure."
c. "Low creatinine levels may suggest impaired kidney function."
d. "Urea is a nitrogenous waste product that forms in the liver during the breakdown of proteins and amino acids."

10. A newly graduated nurse is reviewing with their preceptor how the urinary system maintains balance of the body's fluids. What statement would warrant further education by the preceptor?
a. "The glomerular filtration process serves as the initial step, in which water and electrolytes are meticulously filtered from the bloodstream into the renal tubules."
b. "The kidneys reclaim sodium, potassium, and water, redirecting them back into the bloodstream to prevent excessive loss during tubular reabsorption."
c. "The kidneys play a pivotal role in regulating acid-base balance by selectively excreting bicarbonate ions (HCO_3^-) and reabsorbing hydrogen ions (H^+) in the renal tubules."

d. "Excess ions and substances that were not adequately filtered during the glomerular filtration phase are eliminated during tubular secretion."

11. What age group may experience challenges related to the impact of peer influences and busy schedules on voiding patterns?
a. infants and toddlers
b. adolescents
c. middle-aged adults
d. older adults

12. The student nurse is reviewing drugs that affect urinary elimination with the clinical preceptor. What statement made by the nurse would warrant further education by the clinical preceptor?
a. "Diuretics increase urine production and can lead to frequent urination."
b. "Anticholinergic drugs are used to treat overactive bladder and urinary incontinence."
c. "Calcium channel blockers may affect bladder contractility and can contribute to increased urinary elimination in some individuals."
d. "Alpha blockers relax smooth muscle in the prostate, improving urinary flow."

13. What statement by a nursing student demonstrates a correct understanding of how pathological factors affect urinary elimination?
a. "Elevated levels of parathyroid hormone can contribute to kidney stones."
b. "Hypothyroidism can lead to increased metabolism and increased kidney blood flow."
c. "Nephrotic syndrome pulls proteins like albumin out of the urine."
d. "Acute kidney injury often leads to temporary increased urine output."

14. What role does the parasympathetic nervous system play in urinary elimination?
a. regulating blood pressure
b. initiating the fight-or-flight response
c. enhancing voluntary muscle control
d. promoting relaxation and facilitating bladder emptying

15. The nurse is evaluating a patient for urinary retention. What clinical presentation would the nurse expect to find if the patient is experiencing urinary retention?
a. increased urinary frequency
b. distended bladder and lower abdominal discomfort
c. clear urine with a normal odor
d. rapid initiation of the urine stream

16. The nurse preceptor asks the newly graduated nurse why it is essential for providers to employ a multifaceted approach when assessing and recognizing cues for impaired urinary elimination. What statement made by the newly graduated nurse demonstrates an accurate understanding of impaired urinary elimination?
a. "Assessing and recognizing cues for impaired urinary elimination simplify the diagnostic process."
b. "Assessing and recognizing cues for impaired urinary elimination focus solely on the patient's medical history."
c. "Assessing and recognizing cues for impaired urinary elimination are important for streamlining patient care."
d. "Assessing and recognizing cues for impaired urinary elimination assist in gaining comprehensive insights for tailored interventions and effective management."

17. The nurse is preparing a patient for bladder training. What is the primary focus of bladder training for patients with impaired urinary elimination?
a. enhancing fluid balance
b. administering catheterization

c. strengthening pelvic floor muscles
d. conducting urodynamic testing

18. A nurse is assessing a patient who underwent urinary catheterization and irrigations. What is a potential complication associated with these procedures?
a. development of kidney stones
b. increased risk of urinary urgency
c. development of nocturia
d. trauma to the urinary tract and infection

19. The nurse notes an adult patient had a urinary output of 350 mL in one day. What term would the nurse use to describe this urinary volume?
a. anuria
b. normal
c. oliguria
d. polyuria

Check Your Understanding Questions

1. Explain the significance of glomerular filtration rate (GFR) in assessing kidney function.

2. Explain how peristaltic contractions in the ureters contribute to the transport of urine.

3. What is the purpose of the resting and filling stages in the micturition process?

4. How does creatinine serve as an indicator of kidney function, and why is regular monitoring necessary?

5. Describe the role of renin in the initiation of the renin-angiotensin-aldosterone system (RAAS).

6. Provide two examples of foods that impact urinary elimination.

7. How do diuretics affect the process of urinary elimination?

8. Explain the primary goal of measuring residual urine.

9. Describe the purpose of repositioning strategies in the context of managing impaired urinary elimination.

Reflection Questions

1. Consider the challenges that can arise if the micturition reflex is disrupted. How might this impact an individual's daily life?

2. Consider the role of the kidneys as primary orchestrators in fluid and electrolyte balance. How might disruptions in this balance impact overall health?

3. How might disruptions in the RAAS contribute to imbalances in fluid and electrolyte regulation?

4. Consider the impact of cultural stigmas on an individual's willingness to seek help for urinary issues. How can healthcare professionals address this challenge?

5. Consider the role of nurses in empowering patients to actively participate in their skin care routines. How does patient education foster a collaborative approach to care?

6. Consider the potential risks associated with urinary catheterization. How can healthcare professionals balance the benefits and risks to ensure patient safety?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #4: Part 7.
Why do you think the provider would choose to order straight catheterization instead of an indwelling Foley catheter?

What Should the Nurse Do?

1. A patient with kidney failure is experiencing difficulties in blood pressure regulation. How would you educate them about the role of the RAAS and its impact on their condition?
2. A patient with nocturia seeks advice on reducing nighttime urination. What lifestyle modifications and behavioral strategies should the nurse recommend?
3. A patient voids 300 mL of urine. After the patient empties their bladder, a bladder scan is performed, noting 600 mL of postvoid residual. What immediate actions should the nurse take in response to these findings, and how would you further assess and manage the situation to ensure optimal patient care and safety?

Competency-Based Assessments

1. Outline the process of urine formation.
2. A teenager with a history of trauma exhibits altered urinary patterns. Outline a collaborative care plan involving healthcare professionals and counselors to address psychological factors that may be contributing to impaired urinary elimination.
3. Identify a potential adverse effect associated with bladder irrigation. Describe the signs or symptoms that may indicate this adverse effect, and outline the immediate actions a nurse should take to address the situation and ensure patient safety.
4. Determine if each of the following urine sample results is normal or abnormal. What might these results indicate?
    - Color: Dark yellow
    - Clarity: Cloudy
    - pH: 6.0
    - Protein: Positive
    - Glucose: Negative
    - Ketones: Negative
    - Nitrites: Positive
    - Leukocytes: Positive
    - Blood: Positive

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CHAPTER 27
Bowel Elimination

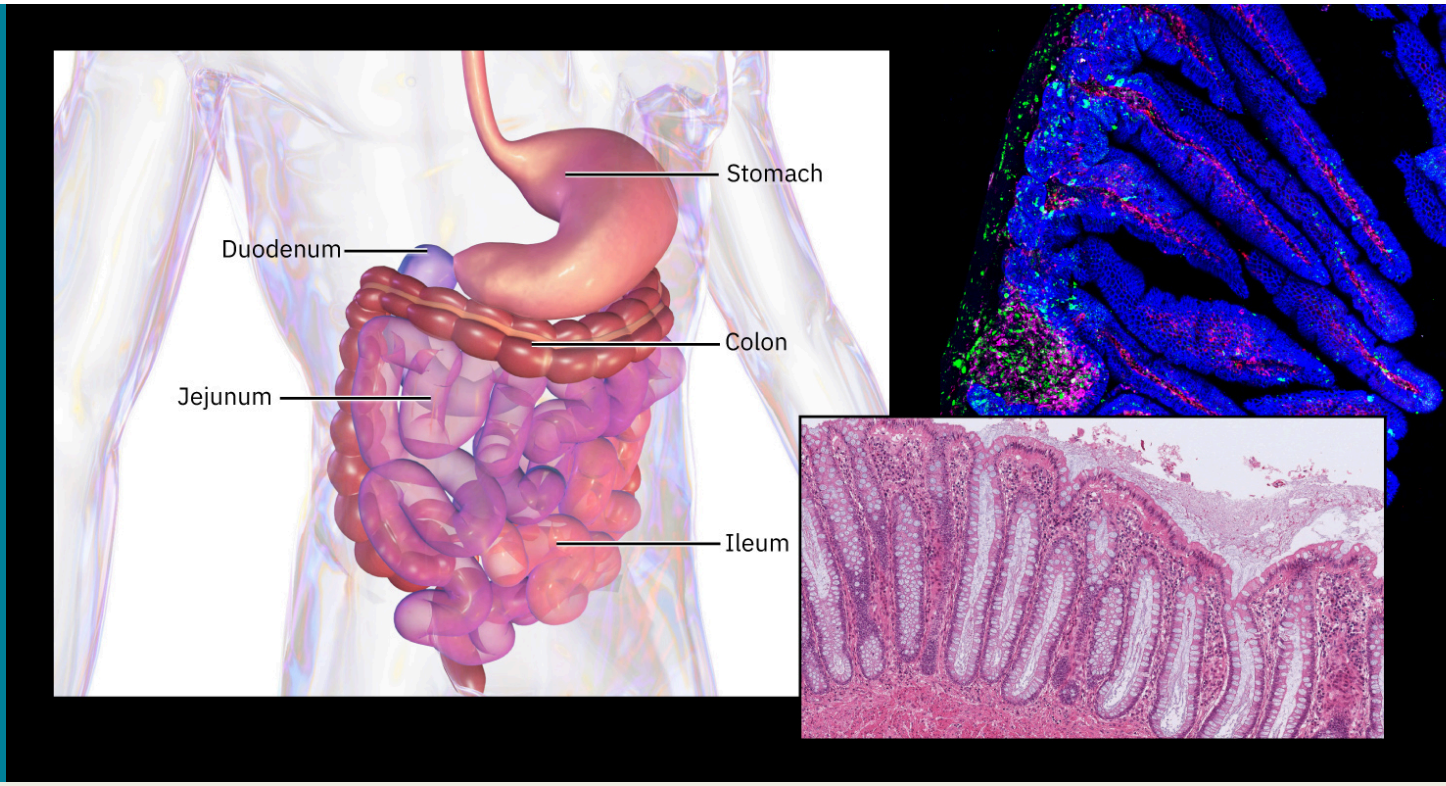

FIGURE 27.1 Functional bowel elimination is a physiological process needed to maintain homeostasis. (credit (left): modification of "Blausen 0432 GastroIntestinalSystem" by BruceBlaus/Wikimedia Commons, CC BY 3.0; credit (top right): modification of "Small Intestine at Steady State" by NIAID/Wikimedia Commons, CC BY 2.0; credit (bottom right): modification of work from *Anatomy and Physiology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

CHAPTER OUTLINE

27.1 Gastrointestinal Tract Structures and Functions
27.2 Factors Affecting Bowel Elimination
27.3 Diagnostic Evaluation
27.4 Common Conditions Affecting Bowel Elimination

INTRODUCTION The gastrointestinal (GI) system, a remarkable and intricate physiological network, is an indispensable component of the human body's regulatory mechanisms. Operating quietly behind the scenes, it diligently processes food, absorbs nutrients, and eliminates waste, playing a vital part in sustaining the body's overall balance and functionality. This chapter delves into the multifaceted dimensions of the GI system, exploring its fundamental functions, examining the various factors that affect bowel elimination, and highlighting the integral role nurses play in ensuring optimal GI health for their patients.

Recognizing the GI system's intricacies is not merely a professional concern for nurses, it is a cornerstone in delivering comprehensive patient care. Armed with this knowledge, nurses become adept at spotting early signs of potential issues, intervening promptly, and averting complications. Nurses also serve as educators, empowering patients to actively engage in their GI health. Fully understanding the GI system contributes to making accurate diagnoses, informing the development of care plans, and shaping interventions tailored to each patient's unique needs.

27.1 Gastrointestinal Tract Structures and Functions

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the organs of the gastrointestinal tract used in bowel elimination
- Recognize the role the nervous system plays in the elimination process
- Explain the functions of the gastrointestinal tract

Understanding the process of bowel elimination involves a comprehensive exploration of the organs constituting the gastrointestinal (GI) system, each pivotal in orchestrating this fundamental physiological function. From the initial ingestion of food to the final expulsion of waste, the GI system performs a symphony of digestive processes essential for maintaining bodily health and balance. Key players in this intricate system include the mouth, pharynx, stomach, small intestine, large intestine, rectum, and anus, each contributing uniquely to the process, from food breakdown to nutrient absorption and waste expulsion. Additionally, the nervous system, intricately intertwined with the GI tract, regulates and coordinates the elimination process through a complex network of nerves, influencing muscle contractions and facilitating the movement of food and waste through the digestive tract. By gaining a comprehensive understanding of these concepts, we can appreciate the complexity of bowel elimination and the intricate interplay between anatomy, physiology, and neural regulation within the GI system.

Gastrointestinal Organs Used in Bowel Elimination

The **gastrointestinal (GI) system** is a complex network of organs within the human body responsible for the digestion and absorption of nutrients as well as the elimination of waste. The GI system is made up of the GI tract (mouth, pharynx, esophagus, stomach, small intestine, large intestine, anus) and accessory organs (teeth, tongue, glandular organs). The glandular organs include the salivary glands, liver, gallbladder, and pancreas (Figure 27.2). The GI system plays a vital role in the process of bowel elimination by aiding in the digestion of food, absorption of nutrients, and elimination of waste from the body. Understanding the functions of these organs is essential for comprehending the intricate process of bowel elimination. In this section, we explore the anatomy and functions of the mouth, pharynx, esophagus, stomach, small intestine, and large intestine, highlighting their respective contributions to the process of digestion and elimination.

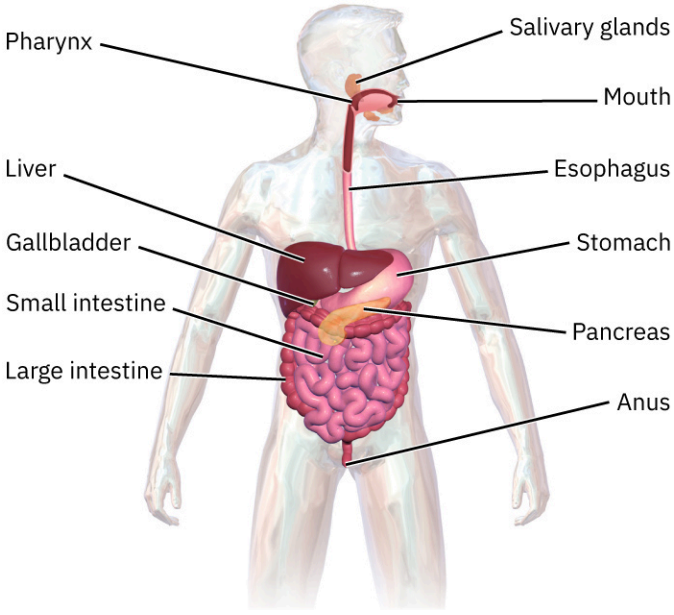

FIGURE 27.2 The gastrointestinal (GI) system is composed of the mouth, pharynx, esophagus, stomach, small intestine, large intestine, anus, and accessory organs. (credit: modification of "Blausen 0316 DigestiveSystem" by BruceBlaus/Wikimedia Commons, CC BY 3.0)

Mouth

The **mouth** is the beginning of the GI tract. It is the orifice into which food is introduced into the GI system. The mouth consists of the lips, tongue, palates (soft and hard), gums, and three of the accessory organs of the GI system: teeth, tongue, and salivary glands. The tongue is a large muscle attached to the floor of the mouth by the

frenulum linguae.

Pharynx

The **pharynx** is a funnel-shaped organ; its upper end is wider, and its lower end is narrower. This muscular organ begins in the head behind the nasal cavity, runs below the oral cavity, and then merges with the larynx and esophagus. The walls of the pharynx are made of both circular and longitudinal muscles. The pharynx is considered part of both the GI and respiratory systems. In regard to the GI system, constriction of the circular muscles of the pharynx helps push food to the esophagus and at the same time prevent air from being swallowed. The longitudinal muscle fibers lift the walls of the pharynx during swallowing.

Esophagus

The **esophagus** is a muscular tube situated behind the trachea and in front of the spine. It begins at the pharynx and goes through the diaphragm to the stomach. Both ends of the esophagus are closed off by sphincters. The sphincters open to allow food to pass through and then close to prevent regurgitation. Peristalsis (contraction of the muscular esophageal walls) moves the food down the esophagus.

Stomach

The **stomach**, a muscular organ located in the upper abdomen just below the rib cage, plays a pivotal role in the digestive process. Shaped like a hollow pouch, the stomach can vary in size and capacity depending on factors such as age, diet, and individual anatomy. On average, the adult human stomach can hold approximately 1 quart (946 mL) of food when fully distended (Frothingham, 2018).

Anatomically, the stomach is divided into four main regions: cardia, fundus, body, and pylorus. The **cardia** is the uppermost part of the stomach closest to the esophagus, where food enters. The **fundus** is the rounded portion of the stomach that expands as the stomach fills with food. The **stomach body** is the central region of the stomach where most of the digestion occurs; the **pylorus** is the lower portion of the stomach that connects to the small intestine (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2017).

The stomach's muscular walls are lined with several layers of smooth muscle tissue that contract and relax in coordinated rhythmic, wavelike movements known as **peristalsis**. This muscular activity serves to mix food with gastric juices, promoting thorough digestion. Gastric glands located in the stomach lining secrete gastric juices containing hydrochloric acid and enzymes, including pepsinogen that is converted to pepsin in the acidic environment of the stomach. Pepsin plays a crucial role in breaking down proteins into smaller peptides, initiating the process of protein digestion (NIDDK, 2017).

As food is partially digested in the stomach, it forms a semiliquid mixture of partially digested food, water, and digestive juices called **chyme**. The stomach's role in bowel elimination involves both mechanical and chemical digestion, as well as the regulation of chyme passage into the small intestine. The **pyloric sphincter**, located at the junction between the stomach and the duodenum (the first part of the small intestine), is a muscular valve that controls the release of chyme into the small intestine (NIDDK, 2017). This regulated release ensures that the small intestine can efficiently digest and absorb nutrients while allowing the remainder of undigested food to progress through the digestive tract for eventual elimination as feces. Thus, the stomach's intricate anatomy and physiological functions are essential for effective digestion and bowel elimination.

Small Intestine

The **small intestine** is a convoluted tube that stretches from the stomach to the large intestine. Despite its name, it is anything but small, measuring around 22 ft (6.7 m) long (Cleveland Clinic, 2021). In fact, the small intestine is longer than the large intestine but gets its name due to its smaller diameter compared to the large intestine. The small intestine consists of three segments: the duodenum, the jejunum, and the ileum.

The first and shortest segment of the small intestine is the **duodenum**. Positioned in the upper abdomen just below the stomach, the duodenum begins at the pyloric sphincter, forming a C-shaped curve. Acidic chyme from the stomach along with digestive juices from the pancreas and **bile** (digestive fluid produced by the liver and stored in the gallbladder) enter the duodenum via the common bile duct. This concoction neutralizes the acidic chyme and initiates further digestion, particularly of fats, proteins, and carbohydrates (NIDDK, 2017).

The **jejunum**, the middle portion of the small intestine, is primarily responsible for the absorption of nutrients,

including carbohydrates, proteins, fats, vitamins, and minerals. The inner surface of the jejunum is lined with millions of tiny fingerlike projections called villi and microvilli that increase its surface area for efficient absorption. These intricate features serve to amplify the absorptive surface area, facilitating the efficient uptake of nutrients (e.g., carbohydrates, proteins, fats, vitamins, minerals) into the bloodstream.

The **ileum** is the longest part of the small intestine and connects the small intestine to the large intestine. It continues the absorption process, particularly focusing on the uptake of vitamin B_{12}, bile salts, and any remaining nutrients, as well as the reabsorption of some water and electrolytes. Together, the segments of the small intestine play a crucial role in bowel elimination by further digesting food, absorbing nutrients, and preparing waste products (e.g., undigested food, bacteria, cellular debris) for elimination through the large intestine.

Large Intestine

The **large intestine** consists of the cecum and colon. This vital component of the GI tract is responsible for bowel elimination. The first 6 in (15 cm) of the large intestine is the **cecum**, which serves as the initial connection point between the small intestine and the colon. Measuring about 5 ft (1.5 m) in length, the **colon** consists of four segments, each with unique functions: ascending colon, transverse colon, descending colon, and sigmoid colon (Cleveland Clinic, 2021). The **ascending colon** travels upward from the cecum on the right side of the abdomen. The **transverse colon** runs horizontally across the abdomen, connecting the ascending and descending segments of the large intestine. The **descending colon** descends along the left side of the abdomen, while the **sigmoid colon** is the final S-shaped segment that leads to the rectum. Finally, the **rectum** serves as the last portion of the large intestine, where feces are stored before elimination. The **anus** is the opening at the end of the GI tract through which feces (solid waste) are expelled from the body.

Nervous System Control of the Elimination Process

The nervous system plays a crucial role in orchestrating the intricate process of bowel elimination. Both the sympathetic and parasympathetic divisions of the autonomic nervous system contribute to this physiological function. By balancing the activities of these two branches of the autonomic nervous system, the body maintains optimal bowel function, ensuring regularity and effective elimination.

Sympathetic Nervous System

The sympathetic nervous system, a component of the autonomic nervous system, plays a significant role in the regulation of the bowel elimination process. During periods of stress or heightened arousal, the sympathetic nervous system becomes activated, triggering a cascade of physiological responses aimed at preparing the body for action, often referred to as the fight-or-flight response. In the context of bowel elimination, sympathetic activation leads to inhibition and constriction of bowel motility and sphincter tone. This can result in decreased peristalsis and slower movement of fecal matter through the intestines as well as increased constriction of the anal sphincter, making it more difficult to pass stool. In essence, the sympathetic nervous system acts to conserve energy and redirect blood flow away from the GI tract during times of stress, which can contribute to symptoms such as constipation or delayed bowel movements (Sharkey & Mawe, 2023).

Parasympathetic Nervous System

The parasympathetic nervous system, on the other hand, is often associated with the rest-and-digest response; the parasympathetic division promotes relaxation and facilitates GI function. In the context of bowel elimination, activation of the parasympathetic nervous system stimulates peristalsis, the rhythmic contractions of the intestinal muscles that propel food. water, and digestive juices forward through the digestive tract. Additionally, the parasympathetic system promotes relaxation of the anal sphincter, making it easier for stool to be expelled during **defecation**, or the process of eliminating feces from the body through the anus. Through its intricate network of nerves and neurotransmitters, the parasympathetic division ensures the efficient expulsion of waste from the body, contributing to regularity and effective bowel movements (Sharkey & Mawe, 2023).

Functions of the Gastrointestinal Tract

In understanding the complexities of human physiology, the GI tract and its accessory organs emerge as a pivotal system responsible for vital functions that are essential for sustaining life. From the initial breakdown of ingested food to the absorption of nutrients and the elimination of waste, the GI tract is responsible for coordinating physiological processes crucial for maintaining health and well-being. This section examines the multifaceted roles

of the GI tract, including its functions of digestion, absorption, and elimination.

Digestion

The GI tract serves a crucial role in the process of digestion, encompassing both mechanical and chemical processes. Mechanical digestion begins in the mouth with chewing, where food is broken down by the teeth into smaller particles to increase its surface area for enzymatic action. The tongue mixes the food with saliva. The food passes from the mouth through the pharynx and esophagus. This digestive process continues in the stomach, where muscular contractions churn and mix the food with gastric juices, forming chyme. Additionally, peristalsis (rhythmic contractions of the muscles lining the GI tract) propels food along its length, aiding in digestion and absorption (Ogobuiro et al., 2023).

Chemical digestion involves the action of the accessory organs of the GI system in the form of enzymes and acids secreted throughout the GI tract. For example, salivary amylase in the mouth starts the breakdown of carbohydrates into simpler sugars, while gastric acid and pepsin in the stomach break down proteins into amino acids. In the small intestine, pancreatic enzymes and liver bile further digest carbohydrates, proteins, and fats, allowing for the absorption of nutrients into the bloodstream. Overall, the digestive functions of the GI system ensure that ingested food is broken down into its basic components, which can then be absorbed and used by the body for energy, growth, and repair (Ogobuiro et al., 2023).

Absorption

The GI tract plays a crucial role in the absorption of nutrients from ingested food. After food is broken down into smaller particles through the process of digestion, the segments of the small intestine, particularly the lining of the jejunum and ileum, are primarily responsible for absorbing these nutrients into the bloodstream. A specialized cell called an **enterocyte** line the walls of the small intestine and is equipped with microvilli, tiny projections that greatly increase the surface area available for absorption. This extensive surface area allows for efficient absorption of nutrients, such as carbohydrates, proteins, fats, vitamins, and minerals.

The absorption process involves movement of nutrients across the intestinal lining into the bloodstream. This process has three components: active transport, facilitated diffusion, and passive diffusion. Energy is required for **active transport**, which involves the movement of nutrients against their concentration gradient, assisted by specific carrier proteins. The process of **facilitated diffusion** also relies on carrier proteins but does not require energy expenditure and moves nutrients down their concentration gradient. The process of **passive diffusion** occurs when nutrients move across the intestinal lining from an area of higher concentration to an area of lower concentration without the need for carrier proteins or energy.

After being absorbed, nutrients are transported via the bloodstream to various cells and tissues throughout the body, where they are used for energy production, growth, repair, and maintenance of bodily functions. Any unabsorbed nutrients, along with water and electrolytes, continue through the GI tract to the large intestine, where further absorption of water and electrolytes occurs before the remaining waste products are eliminated from the body.

Elimination

The GI tract's role in elimination involves a series of coordinated actions to remove waste products from the body. As digestion progresses through the stomach and small intestine, nutrients and water are absorbed into the bloodstream, leaving behind undigested food particles, bacteria, and waste material. This residue, along with digestive secretions, enters the large intestine or colon.

In the colon, the main focus shifts to the absorption of water and electrolytes from the waste material. As the waste travels through the colon, water is reabsorbed, gradually transforming the material into solid **feces**, also known as **stools** or **bowel movement**s, which are the solid waste products of digestion that are expelled from the body through bowel elimination. This process is crucial for maintaining proper hydration and electrolyte balance in the body.

Simultaneously, the muscles of the colon perform peristaltic contractions, moving the fecal material toward the rectum. The rectum acts as a storage chamber for feces, capable of sensing its volume and signaling the body when it is time for defecation. This sensory feedback triggers the urge to have a bowel movement (Nall, 2018).

When the rectum becomes adequately distended and the individual decides to defecate**,** the internal anal sphincter

relaxes reflexively, allowing feces to enter the anal canal. At the same time, conscious control over the external anal sphincter allows for the voluntary initiation and regulation of defecation (Nall, 2018). Finally, the feces are expelled through the anus during defecation, completing the process of elimination. This coordinated interplay of muscular contractions, sensory feedback, and sphincter control ensures effective waste removal while maintaining bowel continence and preventing involuntary leakage.

LINK TO LEARNING

An interactive demonstration of the GI system in action (https://openstax.org/r/77GIsystem) is presented in this video.

In some cases, individuals may undergo surgical procedures that alter the natural route of bowel elimination. One such intervention is the creation of a **stoma**, a surgically created opening in the abdomen that allows waste (fecal matter) to exit the body when the natural route of elimination through the rectum is no longer feasible. This procedure may be necessary as a result of conditions such as bowel obstructions, inflammatory bowel disease (IBD), or colorectal cancer.

Typically, a stoma extends beyond the skin's surface, displaying a moist, pink to red appearance and a rounded shape, devoid of nerve sensations (Figure 27.3). There are two types of ostomy procedures in which a stoma is created related to bowel elimination: colostomy and ileostomy. A **colostomy** involves forming a stoma using a section of the colon (large intestine), where a portion of the intestine is brought out through the abdominal wall and connected to the skin. This procedure diverts regular fecal matter away from the anus and through the stoma. Conversely, an **ileostomy** is created from the ileum (small intestine), similarly brought out through the abdominal wall to establish a stoma. Through an ostomy, waste products are diverted from the intestines and collected in a pouch attached to the abdomen. An ostomy may be permanent or temporary, depending on the reason for the surgery. Although this alteration in bowel function can significantly affect an individual's daily life and self-image, proper care and management of the ostomy can help maintain comfort and quality of life.

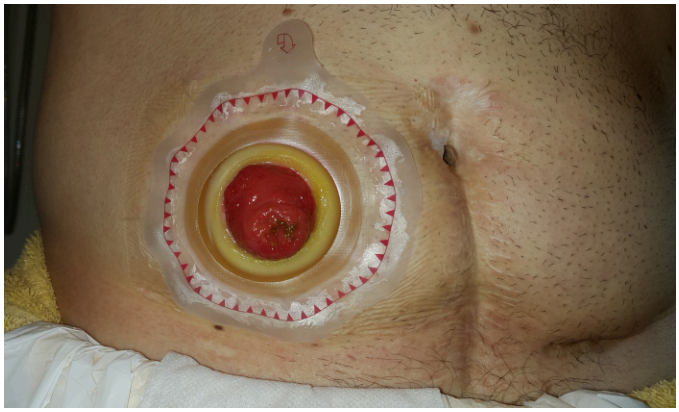

FIGURE 27.3 A colostomy stoma, encircled by a wafer, is the section of the colostomy pouch that adheres to the skin. (credit: modification of "Ostomy wafer being worn by an ileostomy patient" by Eric Polsinelli (VeganOstomy)/Wikimedia Commons, CC BY 4.0)

27.2 Factors Affecting Bowel Elimination

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain developmental considerations affecting bowel elimination
- Identify how individual daily bowel habits affect elimination
- Discuss how medications can affect bowel elimination

Recognizing the developmental nuances influencing bowel elimination is essential for providing tailored care. From infancy to adulthood, individuals navigate unique stages where bowel habits evolve alongside physical and psychological growth. Understanding these developmental considerations sets the stage for exploring how daily habits shape elimination patterns. Additionally, awareness of medication effects on bowel function is crucial,

because medications can significantly affect bowel health. By exploring these interconnected topics, healthcare professionals gain insights into optimizing bowel health and enhancing patient outcomes.

Developmental Considerations

Understanding the developmental considerations that affect bowel elimination is essential for promoting optimal GI health across the life span. From infancy through adulthood, bowel habits and functions evolve in response to physiological, psychological, social, and environmental factors. By exploring these developmental milestones and their effect on bowel elimination, individuals, caregivers, and healthcare professionals can better support digestive well-being and address any challenges that may arise. This comprehensive understanding allows for tailored interventions, lifestyle modifications, and healthcare strategies aimed at maintaining healthy bowel habits and optimizing overall GI function throughout all stages of life.

Newborns and Infants

The first bowel movement of a newborn that appears sticky and dark green to black in color is referred to as **meconium** (Figure 27.4). During the neonatal period, infants primarily rely on a liquid diet, either breast milk or formula, which is easily digestible and promotes frequent bowel movements. Breast milk, in particular, contains components that facilitate digestion and promote the growth of beneficial gut bacteria, contributing to healthy bowel function. Additionally, breastfed infants may have more frequent bowel movements compared to formula-fed infants because of the composition of breast milk and the presence of laxative factors (American Academy of Pediatrics, 2021).

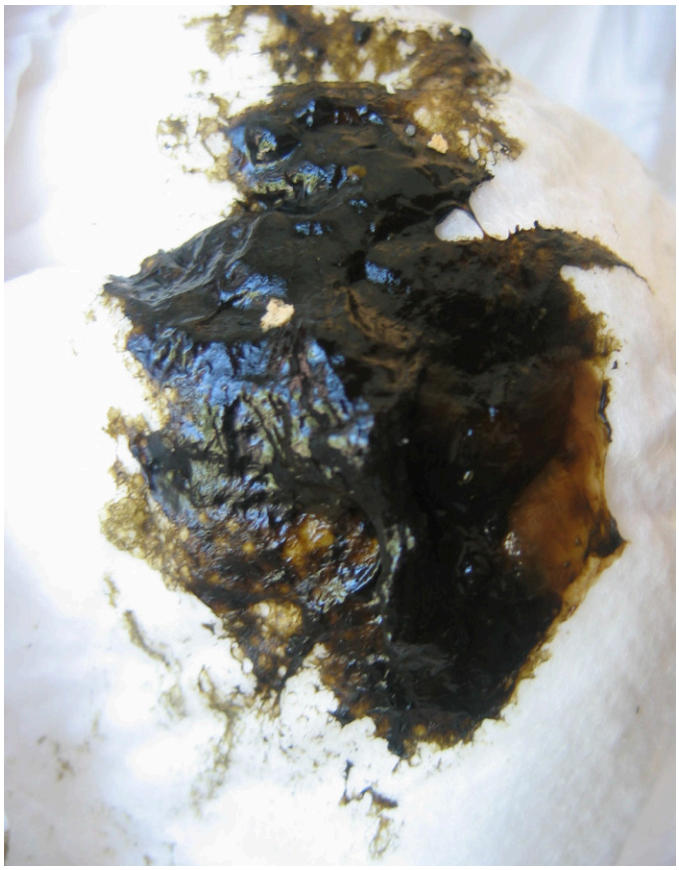

FIGURE 27.4 Meconium is the term used to describe the first stool passed by a newborn baby. It is typically dark green to black in color and has a sticky, tar-like consistency. (credit: "Meconium" by Jeremy Kemp/Wikimedia Commons, Public Domain)

The GI tract of infants undergoes rapid growth and maturation during the first few months of life. The muscular walls of the intestines strengthen, and the nerve pathways controlling bowel movements mature, leading to improved coordination and control over defecation. As a result, many infants establish a regular pattern of bowel movements within the first few months, typically ranging from several times a day to once every few days (American Academy of Pediatrics, 2021).

Another developmental consideration in infant bowel elimination is the transition to solid foods. As infants begin to explore and consume solid foods around 4 to 6 months of age, their bowel habits may change. The introduction of new foods can affect the consistency, frequency, and odor of bowel movements. It is common for infants to experience changes in bowel patterns during this transition period, such as increased frequency or changes in stool color or texture (American Academy of Pediatrics, 2021).

Moreover, the development of bowel control and sphincter function progresses gradually during infancy. Newborns and young infants have little voluntary control over bowel movements; however, by around 18 to 24 months of age, many children begin to demonstrate awareness of bowel sensations and may start to show signs of readiness for toilet training (Johns Hopkins Medicine, n.d.). However, the timing and success of toilet training vary widely among individual infants and depend on factors such as developmental readiness, cultural practices, and caregiver support.

PATIENT CONVERSATIONS

Helping Parents to Understand Infant Bowel Function

Nurse: Good morning, Mrs. Chin. My name is April. I saw you both the last time you were here. How are you and little Li doing today?

Patient's parent: Good morning, April. I remember you too. We're doing well, thank you. Li has been a bit fussier than usual lately, and I've been a bit worried about her bowel movements.

Nurse: I understand. Changes in bowel habits can be concerning for parents. Can you tell me more about what you've been noticing?

Patient's parent: Sure. Well, Li used to have bowel movements several times a day, but lately, it seems like she's been going less frequently, maybe every two to three days. And when she does go, her stools seem harder than before.

Nurse: I see. It's not uncommon for babies' bowel habits to change as they grow. Remind me, how old is Li now?

Patient's parent: She just turned 4 months last week.

Nurse: Ah, I see. At 4 months, babies are often going through changes in their digestive system as they start to transition to solid foods. How has Li's feeding been lately?

Patient's parent: She's still breastfeeding, but we've started to introduce some pureed fruits and vegetables over the past few weeks.

Nurse: That's great to hear. The introduction of solid foods can sometimes lead to changes in bowel habits. It's normal for babies to have stools that vary in color, consistency, and frequency during this time.

Patient's parent: That's reassuring to know. Is there anything I can do to help with Li's bowel movements?

Nurse: Absolutely. You can try offering Li more breast milk or formula if she seems thirsty, because staying hydrated can help soften her stools. You can also continue with the pureed fruits and vegetables, because the fiber in these foods can help regulate her bowel movements. If Li seems uncomfortable or continues to have hard stools, you can try gently massaging her tummy or moving her legs in a motion like she is riding a bicycle to help move things along. And of course, if you have any concerns or if Li's symptoms persist, don't hesitate to give us a call or schedule an appointment.

Patient's parent: Thank you so much. That's really helpful advice. I'll give these suggestions a try and keep an eye on Li's symptoms.

Nurse: You're welcome, Mrs. Chin. I'm glad I could help. And remember, we're here to support you and Li every step of the way. If you have any questions or need further assistance, don't hesitate to reach out.

Patient's parent: Thank you. I really appreciate it.

Toddlers

During the toddler years, bowel elimination continues to be influenced by various developmental considerations as children further progress in their growth and maturation. Understanding these factors is essential for caregivers and healthcare professionals to support toddlers' bowel health and address any challenges that may arise during this developmental stage.

One significant aspect of bowel elimination in toddlers is the ongoing development of bowel control and sphincter function. While toddlers may demonstrate increasing awareness of bowel sensations and show interest in toilet training, achieving full bowel control typically takes time and varies widely among individual children. Toddlers may experience occasional accidents or inconsistencies in bowel habits as they continue to refine their ability to recognize and respond to the urge to defecate.

The transition to a more varied and adultlike diet also influences bowel elimination in toddlers. As toddlers explore a wider range of foods and textures, their bowel movements may become more diverse in consistency, color, and odor. It is common for toddlers to experience changes in bowel patterns in response to dietary changes, such as increased fiber intake from fruits, vegetables, and whole grains, which can promote regularity and softer stools.

Moreover, the social and environmental factors surrounding toilet training play a significant role in toddlers' bowel elimination. Cultural norms, family dynamics, and caregiver attitudes toward toilet training can shape toddlers' experiences and expectations regarding toilet use. Providing a supportive and encouraging environment, offering praise and positive reinforcement, and allowing toddlers to progress at their own pace can facilitate successful toilet training and promote healthy bowel habits.

Additionally, toddlers' growing independence and desire for autonomy may influence their approach to bowel elimination. Some toddlers may resist or show reluctance toward toilet training, while others may eagerly embrace the opportunity to assert their independence. Understanding and respecting toddlers' individual preferences and temperaments can help caregivers navigate the toilet training process and foster a positive attitude toward bowel elimination. Supporting toddlers' bowel health and toilet training efforts requires patience, consistency, and sensitivity to their evolving needs and abilities.

School-Age Children

As children progress into school age, bowel elimination undergoes further developmental considerations influenced by physical, psychological, and environmental factors. One significant developmental aspect during school-age years is the continued refinement of bowel control and toileting skills. While most school-age children have achieved daytime bowel control, nighttime bowel control may still be developing. Some children may experience occasional bedwetting or nocturnal bowel movements, which is considered normal until around age 5 or 6 years (Johns Hopkins Medicine, n.d.). However, persistent issues with bowel control, such as constipation or fecal incontinence, may require further evaluation and intervention by healthcare professionals.

Another consideration is the effect of social and environmental factors on bowel elimination in school-age children. Peer influences, school routines, and access to toilet facilities can all affect children's bowel habits and toileting behaviors. Children may experience anxiety or embarrassment related to using school restrooms, especially if they feel rushed or uncomfortable in shared facilities. Creating a supportive and inclusive environment at school, with adequate access to private restroom facilities and opportunities for regular bathroom breaks, can help alleviate these concerns and promote healthy bowel habits.

Additionally, dietary habits and lifestyle factors continue to play a role in bowel elimination during the school-age years. Children's diets may become influenced by peer preferences, school meals, and increased exposure to processed foods and snacks. Encouraging a balanced diet rich in fiber, fruits, vegetables, and water can support regular bowel movements and prevent constipation. Furthermore, promoting physical activity and regular exercise can help regulate bowel function and promote overall bowel health.

Psychologically, school-age children may experience stress or emotional challenges that can affect bowel elimination. Academic pressures, social dynamics, and changes within the family or home environment can all contribute to stress-related bowel symptoms, such as constipation or diarrhea. Creating opportunities for open communication and providing emotional support can help children navigate these challenges and maintain healthy bowel habits. Supporting children's bowel health during this stage requires a holistic approach that addresses their

developmental needs, dietary habits, toileting skills, and emotional well-being.

Adults

In adulthood, bowel elimination continues to be influenced by various developmental considerations as individuals navigate through different life stages, lifestyles, and health conditions. One significant consideration in adulthood is the effect of lifestyle factors on bowel elimination. Lifestyle factors, diet, physical activity, stress levels, and medication use can all influence bowel habits and overall bowel health of adults. These factors are discussed in detail in Individual Bowel Habits and Medications Affecting Bowel Elimination.

Other factors affecting bowel functioning in adults include stress, chronic conditions, and hormonal changes. Stress and emotional well-being play a role in bowel elimination in adulthood. Stress can affect the functioning of the digestive system, leading to symptoms such as diarrhea, constipation, or abdominal discomfort. Finding healthy ways to manage stress, such as relaxation techniques, exercise, or therapy, can help maintain bowel health and alleviate stress-related bowel symptoms. Chronic health conditions such as irritable bowel syndrome (IBS), IBD, diabetes, and thyroid disorders can also affect bowel function and require management by healthcare professionals. Furthermore, hormonal changes, particularly in women during menstruation, pregnancy, and menopause, can adversely influence bowel habits and bowel health. Fluctuations in hormone levels can affect GI motility, leading to changes in stool consistency, frequency, and bowel patterns.

As individuals age, they may also experience changes in bowel function as a result of natural aging processes and age-related conditions. Peristalsis, for instance, typically slows with aging. Bowel habits may become less predictable, and conditions such as constipation, fecal incontinence, or diverticulosis may become more prevalent. Maintaining a healthy lifestyle, including a balanced diet, regular exercise, and adequate hydration, can help mitigate age-related changes in bowel function and promote bowel health in older adults. By understanding and addressing these developmental considerations, individuals can take proactive steps to maintain healthy bowel habits and overall bowel health throughout adulthood.

Individual Bowel Habits

Understanding the intricate interplay between individual daily bowel habits and their effect on elimination is essential for maintaining optimal GI health. Several key factors contribute to bowel function and regularity, including food and fluid intake, activity and muscle tone, lifestyle choices, and psychological factors. By exploring these elements comprehensively, we can gain valuable insights into how our daily habits influence bowel health and elimination patterns. From dietary preferences to exercise routines, stress management strategies, and even sleep patterns, each aspect plays a vital role in shaping our digestive health. By examining the multifaceted nature of these factors, we can better understand their collective influence on bowel function and work toward promoting more effective elimination and overall well-being.

Food and Fluid Intake

Food intake directly influences bowel habits by providing the essential nutrients, fiber, and fluids necessary for proper digestion and elimination. A diet rich in fiber, found in fruits, vegetables, whole grains, and legumes, adds bulk to the stool and promotes regular bowel movements. Fiber also helps regulate bowel function by softening the stool and facilitating its passage through the digestive tract. In contrast, a diet low in fiber and high in processed foods can lead to constipation or irregular bowel movements due to inadequate fiber intake and reduced stool bulk (Nall & Higuera, 2024).

Fluid intake is equally important for maintaining healthy bowel habits. Drinking an adequate amount of water throughout the day helps soften the stool and prevent dehydration, which can contribute to constipation. Adequate hydration also supports the lubrication of the intestines, facilitating the smooth movement of stool through the digestive tract. Inadequate fluid intake, on the other hand, can lead to dry, hard stools and difficulty passing stool, increasing the risk of constipation (Nall & Higuera, 2024).

Additionally, certain foods and beverages may have specific effects on bowel function. For example, caffeinated drinks (e.g., coffee, tea) can act as mild stimulants to the digestive system, promoting bowel movements in some individuals. Spicy foods, fatty foods, and large meals can sometimes trigger GI symptoms (e.g., diarrhea, abdominal discomfort) in sensitive individuals. Additionally, individuals with lactose intolerance may experience digestive symptoms (e.g., gas, bloating, diarrhea) after consuming dairy products. Identifying and avoiding dietary triggers

can help manage bowel symptoms and promote more comfortable digestion (Nall & Higuera, 2024).

CULTURAL CONTEXT

Cultural Influences on Bowel Habits: Examining Food and Fluid Intake Practices

Understanding how cultural norms affect bowel habits requires a closer examination of the specific dietary and hydration practices prevalent in various cultural settings. From traditional diets to hydration rituals, each cultural factor plays a significant role in GI health.

- Exploring cultural dietary patterns:
  - Various cultures have distinct dietary patterns shaped by geographical, historical, and religious factors. For instance, the Mediterranean diet, rich in fruits, vegetables, and whole grains, is associated with improved bowel movements due to its high fiber content.
  - Spices and herbs: Certain cultures incorporate spices and herbs known for their digestive benefits. For instance, ginger in Asian cuisine or mint in Middle Eastern dishes may aid in digestion and alleviate GI discomfort.
  - Meal structure: The timing and composition of meals vary widely across cultures. Some cultures prioritize large, communal meals with multiple courses, while others prefer smaller, more frequent meals. These differences can affect bowel regularity and transit time.
  - Food preparation methods: Cultural cooking techniques, such as fermenting, pickling, or slow cooking, can affect the nutritional content and digestibility of foods, thereby influencing bowel habits.
- The role of fluid intake:
  - Beverage preferences: Cultural preferences for beverages like tea, coffee, or herbal infusions can affect hydration levels and bowel function. For instance, caffeine-containing beverages may have a diuretic effect, while herbal teas like chamomile or mint can promote relaxation and aid digestion.
  - Hydration practices: Cultural norms regarding water consumption vary, affecting overall hydration levels. In some cultures, drinking water before or after meals is encouraged, while in others, it may be considered detrimental to digestion.
  - Traditional remedies: Many cultures have traditional remedies involving fluids like broths, soups, or herbal concoctions believed to promote GI health and relieve constipation.

Cultural factors significantly influence food and fluid intake, thereby shaping individual bowel habits. Healthcare providers should be culturally sensitive when discussing bowel habits, acknowledging the effect of cultural practices on dietary and fluid intake. Educating individuals about the importance of hydration, fiber intake, and balanced nutrition within the context of their cultural preferences can empower them to make informed choices for bowel health. Integrating evidence-based dietary recommendations with culturally relevant food choices and practices can optimize bowel function while respecting cultural diversity.

Activity and Muscle Tone

Regular physical activity promotes healthy bowel movements by stimulating the muscles of the digestive tract and promoting bowel motility. Exercise helps to increase blood flow to the intestines, which can enhance the efficiency of digestion and elimination. Additionally, physical activity can help reduce stress levels, which can have a positive effect on bowel function. Incorporating regular exercise (e.g., walking, jogging, swimming, yoga) into daily routines can support optimal bowel health and promote regular elimination.

Furthermore, muscle tone in the pelvic floor and abdominal muscles plays a key role in maintaining continence and facilitating effective bowel movements. Weakness or dysfunction in these muscles can lead to difficulties with bowel control and evacuation. Pelvic floor exercises (or Kegel exercises) can help strengthen the muscles of the pelvic floor, improving bowel control and reducing the risk of fecal incontinence (Sissons, 2023). Similarly, exercises that target the abdominal muscles (e.g., crunches, planks) can support overall muscle tone and contribute to more efficient bowel movements.

In addition to physical activity and muscle tone, daily bowel habits, such as consistency, timing, and frequency of bowel movements, can provide valuable insights into bowel health. Changes in bowel habits, such as sudden onset

of constipation or diarrhea, should be noted and may indicate underlying issues that require further evaluation by a healthcare professional.

Lifestyle

Individual daily bowel habits can significantly affect elimination, with lifestyle factors beyond food and fluid intake and activity and muscle tone also playing a crucial role in bowel function and regularity. Some of these lifestyle factors include toileting habits and routines, sleep patterns, and hygiene practices.

Establishing regular toilet habits and responding promptly to the urge to defecate can influence bowel health and elimination. Ignoring the urge to defecate or delaying bowel movements can disrupt normal bowel function and lead to constipation or fecal impaction. Conversely, having a consistent toilet routine can help train the body to evacuate stool efficiently. Sleep disturbances or irregular sleep patterns can affect bowel function and elimination. Adequate sleep is essential for maintaining overall health, including GI health. Disruptions in sleep can disrupt the body's natural rhythms and may adversely affect bowel habits, leading to changes in stool consistency or frequency. In addition, hygiene practices, particularly related to anal cleansing after bowel movements, can affect bowel health and comfort. Proper hygiene can help prevent irritation, infection, and discomfort in the anal area, promoting more comfortable and efficient elimination. Women and girls should always wipe from front to back to keep from spreading bacteria that can cause an infection. Wiping front to back can increase the risk of transferring bacteria to the urethra. Good handwashing after toileting is essential to help prevent the transmission of infectious organisms to yourself and others. Washing your hands every time you go to the bathroom decreases the risk of diarrheal illnesses and also foodborne illnesses.

Psychological Factors

Psychological well-being, stress levels, emotions, and mental health can all play a role in bowel health and elimination. Stress and anxiety are known to affect the functioning of the digestive system, leading to symptoms such as diarrhea, constipation, or abdominal discomfort. The gut-brain axis, a bidirectional communication system between the brain and the GI tract, plays a key role in this relationship (Appleton, 2018). Stress and emotional distress can trigger changes in gut motility, sensitivity, and secretion, altering bowel habits and leading to GI symptoms. Chronic stress or unresolved emotional issues may contribute to long-term disruptions in bowel function and may exacerbate conditions such as IBS.

Emotional factors (e.g., fear, embarrassment, trauma) can also adversely affect bowel habits and elimination. Individuals may experience difficulty with bowel movements or altered bowel habits in response to emotional triggers or stressful situations. Additionally, negative emotions associated with bowel movements (e.g., shame, disgust) can lead to avoidance behaviors or reluctance to seek help for bowel-related concerns.

Furthermore, mental health conditions, such as depression or anxiety disorders, can have a significant impact on bowel function. Changes in appetite, alterations in neurotransmitter levels, and disruptions in the gut-brain axis associated with these conditions may contribute to GI symptoms and irregular bowel habits (Appleton, 2018).

Coping strategies and self-care practices for managing psychological factors can positively influence bowel health and elimination. Stress reduction techniques (e.g., mindfulness meditation, relaxation exercises) can help mitigate the effects of stress on bowel function. Seeking support from mental health professionals or support groups can also be beneficial for individuals experiencing psychological distress related to bowel habits. By addressing stress, managing emotions, and seeking appropriate support for mental health concerns, individuals can promote optimal bowel function and contribute to overall GI health and well-being.

Medications Affecting Bowel Elimination

Medications can affect bowel elimination in various ways, depending on their mechanism of action and intended therapeutic effects. Some medications may directly affect bowel motility, stool consistency, or GI function, leading to alterations in bowel habits. Opioid analgesics (e.g., morphine, codeine, oxycodone, hydrocodone) are commonly prescribed for pain management. These medications bind to opioid receptors in the GI tract, slowing bowel motility and reducing intestinal secretions. As a result, opioid use can lead to constipation, a common side effect known as **opioid-induced constipation (OIC)**.

Certain antidepressant medications, particularly tricyclic antidepressants (TCAs) and selective serotonin reuptake inhibitors (SSRIs), may affect bowel function and contribute to GI side effects. The TCAs (e.g., amitriptyline [Elavil],

imipramine [Tofranil]) can cause constipation by slowing intestinal transit and reducing bowel motility. The SSRIs (e.g., fluoxetine [Prozac], sertraline [Zoloft]) may also lead to GI disturbances, including diarrhea or constipation, as well as changes in appetite and weight.

Antacids and proton pump inhibitors (PPIs) are commonly used to treat gastroesophageal reflux disease (GERD) and peptic ulcers by reducing stomach acid production. Although these are generally well-tolerated medications, they can sometimes cause GI side effects such as constipation or diarrhea. Antacids containing aluminum or calcium may cause constipation, while PPIs like omeprazole and esomeprazole may increase the risk of diarrhea caused by alterations in gut microbiome and nutrient absorption.

Diuretic medications (e.g., furosemide [Lasix], hydrochlorothiazide [HCTZ; Hydrodiuril]) are used to increase urine production and reduce fluid retention in conditions like hypertension and heart failure. However, diuretics can also lead to electrolyte imbalances, including potassium depletion, which may affect bowel function. Low potassium levels can lead to muscle weakness and intestinal dysmotility, potentially causing constipation or other bowel disturbances.

Iron supplements (e.g., ferrous sulfate [Feosol Iron], iron dextran [Infed]) are commonly prescribed for iron-deficiency anemia. Iron can cause stools to be black and can cause GI side effects (e.g., constipation, nausea, abdominal discomfort). Iron is known to be constipating, particularly in high doses or when taken on an empty stomach. Slow-release formulations of iron may be more likely to cause constipation compared to immediate-release formulations.

The examples in Table 27.1 illustrate how medications can influence bowel elimination through various mechanisms, highlighting the importance of considering the effects of medications when assessing bowel symptoms and implementing appropriate management strategies. It is essential for healthcare providers to educate patients about potential GI side effects associated with medications and monitor for any changes in bowel habits during treatment. Adjustments to medication regimens, dietary modifications, and lifestyle interventions may be necessary to address medication-related bowel disturbances and promote optimal bowel health.

Medication	Common Gastrointestinal (GI) Effects	Mitigation Strategies
Nonsteroidal anti-inflammatory drugs (e.g., ibuprofen [Motrin], naproxen [Aleve])	Gastric irritation, ulcers, GI bleeding	• Use lowest effective dose. • Take with food or milk. • Consider using a proton pump inhibitor (PPI) or H2 blocker (cimetidine, famotidine).
Iron supplements (e.g., ferrous sulfate [Feosol Iron], iron dextran [Infed])	Constipation, nausea, abdominal pain	• Use immediate-release formulations. • Take with vitamin C to enhance absorption. • Increase dietary fiber and fluid intake.

TABLE 27.1 Medications Problematic for the Gastrointestinal System and Mitigation Strategies

Medication	Common Gastrointestinal (GI) Effects	Mitigation Strategies
Tricyclic antidepressants (TCAs) (e.g., amitriptyline [Elavil], imipramine [Tofranil]) and selective serotonin reuptake inhibitors (SSRIs) (e.g., fluoxetine [Prozac], sertraline [Zoloft])	TCAs: Constipation by slowing intestinal transit SSRIs: Diarrhea, constipation, appetite changes, weight changes	• TCAs: ◦ Increase dietary fiber and fluid intake. • SSRIs: ◦ Monitor and adjust diet as needed. ◦ Consider stool softeners or laxatives.
Antacids and proton pump inhibitors (PPIs) (e.g., omeprazole [Prilosec], esomeprazole [Nexium])	Antacids: Constipation (aluminum, calcium) or diarrhea PPIs: Increased risk of diarrhea	• Antacids: ◦ Choose formulations carefully based on side effects. • PPIs: ◦ Monitor bowel habits and consider probiotics.
Diuretics (e.g., furosemide [Lasix], hydrochlorothiazide [HCTZ; Hydrodiuril])	Electrolyte imbalances, constipation caused by low potassium levels	• Monitor electrolyte levels regularly. • Increase dietary potassium intake. • Consider potassium supplements, if needed.
Antibiotics (e.g., amoxicillin [Amoxil], doxycycline [Acticlate])	Diarrhea, nausea, abdominal cramping	• Take with probiotics. • Ensure adequate hydration. • Take with food if not contraindicated.
Opioids (e.g., morphine [MS Contin], oxycodone [OxyContin])	Constipation, nausea, vomiting	• Use stool softeners or laxatives. • Increase dietary fiber and fluid intake. • Use the lowest effective dose.
Bisphosphonates (e.g., alendronate [Fosamax], risedronate [Actonel])	Esophageal irritation, nausea, abdominal pain	• Take with a full glass of water. • Remain upright for at least thirty minutes after taking. • Take on an empty stomach.
Antidiabetic agents (e.g., glucophage [Metformin])	Diarrhea, nausea, abdominal discomfort	• Start with a low dose and gradually increase. • Take with meals. • Consider extended-release formulations.

TABLE 27.1 Medications Problematic for the Gastrointestinal System and Mitigation Strategies

Medication	Common Gastrointestinal (GI) Effects	Mitigation Strategies
Calcium channel blockers (e.g., verapamil [Verelan], diltiazem [Cardizem])	Constipation, abdominal discomfort	• Increase dietary fiber and fluid intake. • Use stool softeners, if needed.
Anticholinergics (e.g., oxybutynin [Ditropan XL], scopolamine [Transderm-Scop])	Constipation, dry mouth, abdominal discomfort	• Increase dietary fiber and fluid intake. • Use saliva substitutes or sugar-free gum for dry mouth.
Minerals or electrolytes (e.g., potassium chloride [K-Tab])	Gastric irritation, nausea, abdominal pain	• Take with meals. • Use extended-release formulations. • Ensure adequate hydration.
Corticosteroids (e.g., prednisone [Sterapred], dexamethasone [Decadron])	Gastric irritation, peptic ulcers	• Use lowest effective dose for the shortest duration. • Take with food. • Consider using a PPI or H2 blocker.

TABLE 27.1 Medications Problematic for the Gastrointestinal System and Mitigation Strategies

CLINICAL SAFETY AND PROCEDURES (QSEN)

Medications Affecting Bowel Functioning

Medications play a crucial role in managing various health conditions; however, they can also adversely affect bowel function, leading to disturbances such as constipation or diarrhea. As healthcare professionals, it is essential to understand how medications affect bowel functioning and to provide patient-centered care to minimize adverse effects. This QSEN box explores the competencies required to address medication-related bowel disturbances.

- Patient-centered care:
  - Assess the patient's medication history to identify any medications that may affect bowel function.
  - Engage in open communication with the patient to discuss potential side effects of medications on bowel habits.
  - Collaborate with the healthcare team to develop individualized care plans that consider the patient's unique medication regimen and bowel health needs.
- Teamwork and collaboration:
  - Work collaboratively with pharmacists and other healthcare providers to review medication lists and identify medications that may affect bowel function.
  - Communicate effectively with interdisciplinary team members to ensure coordinated care and management of medication-related bowel disturbances.
  - Participate in team-based discussions to develop strategies for minimizing medication-related bowel side effects and optimizing patient outcomes.
- Evidence-based practice:
  - Stay updated on current evidence and research regarding medications that affect bowel functioning.
  - Use evidence-based guidelines and protocols when assessing and managing medication-related bowel disturbances.

    - Incorporate best practices into clinical decision-making to enhance patient safety and improve bowel health outcomes.
- Quality improvement:
    - Participate in quality improvement initiatives aimed at reducing medication errors related to bowel-affecting medications.
    - Implement strategies to monitor and evaluate the effectiveness of interventions for managing medication-related bowel disturbances.
    - Identify opportunities for enhancing medication safety and optimizing bowel health outcomes through continuous quality improvement efforts.
- Safety:
    - Prioritize patient safety by conducting thorough medication reconciliations and assessments to identify medications that may affect bowel function.
    - Educate patients and caregivers about the potential risks and benefits of medications affecting bowel habits, including proper administration and monitoring.
    - Implement safety measures, such as medication reconciliation processes and double-checking procedures, to prevent adverse drug events related to bowel-affecting medications.
- Informatics:
    - Use electronic health records and medication management systems to access comprehensive medication profiles and identify medications that may affect bowel function.
    - Document medication-related bowel disturbances and interventions in a timely and accurate manner using standardized documentation tools.
    - Use informatics resources to track and analyze medication-related outcomes and trends, facilitating data-driven decision-making and quality improvement initiatives.

By applying these competencies, healthcare professionals can effectively assess, prevent, and manage medication-related bowel disturbances, optimizing patient outcomes and enhancing overall bowel health. Continuous education, collaboration, and quality improvement efforts are essential to ensure safe and effective medication management in clinical practice.

27.3 Diagnostic Evaluation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Discuss diagnostic testing options for determining proper bowel functioning
- Identify the nurse's role in diagnostic testing for functional bowel elimination

Diagnostic testing serves as a cornerstone in the assessment of proper bowel functioning. From stool analyses to sophisticated imaging procedures, a range of diagnostic modalities empower healthcare professionals to delve into the intricacies of GI health. Nurses play an integral role in patient care, so understanding these diagnostic tests is essential for recognizing and addressing functional bowel disorders effectively. This section explores various diagnostic testing methodologies employed to evaluate bowel function, shedding light on their significance, procedures, and implications for patient care. Additionally, it underscores the crucial role that nurses play in the diagnostic process, emphasizing their contributions in supporting patients, collaborating with healthcare teams, and advocating for optimal outcomes in functional bowel assessment.

Diagnostic Testing for Bowel Functioning

Diagnostic testing plays a pivotal role in the comprehensive evaluation of bowel functioning, offering invaluable insights into the health and integrity of the GI tract. From noninvasive procedures (e.g., stool analysis) to more invasive/surgical techniques (e.g., endoscopic examinations, laparoscopy), a wide array of diagnostic modalities are employed to assess bowel function, identify abnormalities, and guide appropriate management strategies. These diagnostic tests encompass various approaches (e.g., imaging studies, laboratory analyses, direct visualization) to the GI tract, each providing unique advantages in identifying the underlying causes of bowel dysfunction. With a thorough understanding of these diagnostic tools, nurses can effectively assist in the diagnosis of GI disorders, collaborate in the development of comprehensive treatment plans, and play a crucial role in promoting optimal

patient outcomes.

Serum Laboratory Studies

Serum laboratory studies provide valuable insights into various aspects of bowel health by analyzing blood samples for specific markers and indicators. These tests can help healthcare providers identify underlying conditions, monitor disease progression, and guide treatment decisions. Table 27.2 summarizes common serum laboratory studies used to assess bowel functioning, including normal ranges, as well as associated bowel conditions.

Serum Laboratory Study	Normal Range	Associated Bowel Conditions

Complete blood count (CBC)	• Red blood cells (RBC):
	  ◦ Male: 4.5–6.1 million cells/mcL
	  ◦ Female: 4.0–5.4 million cells/mcL
	  ◦ Children: 4.0–5.5 cells/mcL
	• Hemoglobin (Hgb):
	  ◦ Male: 13–17 g/dL
	  ◦ Female: 11.5–15.5 g/dL
	  ◦ Children: 11.5–14.5 g/dL
	• Hematocrit (Hct):
	  ◦ Male: 40–55 percent
	  ◦ Female: 36–48 percent
	  ◦ Children: 33–43 percent
	• White blood cells (WBC):
	  ◦ Adults: 4,000–10,000 cells/mcL
	  ◦ Children: 4,000–15,500 cells/mcL
	• Platelets:
	  ◦ Adults: 150,000–400,000 cells/mcL
	  ◦ Children: 150,000–450,000 cells/mcL
		• Anemia (low RBC, Hgb, and Hct)
		• Infection (elevated WBC)
		• Bleeding (low platelet count)
		• Inflammatory bowel disease [IBD] (elevated WBC and platelet count, low Hgb and Hct)

Electrolyte panel	Adults: • Sodium (Na): 136–144 mEq/L • Potassium (K): 3.7–5.1 mEq/L • Chloride (Cl): 97–105 mEq/L • Bicarbonate (HCO^{3-}): 22–30 mmol/L Children ≥1 year of age: • Sodium (Na): 130–147 mEq/L • Potassium (K): 3.5–5.1 mEq/L • Chloride (Cl): 95–108 mEq/L • Bicarbonate (HCO_3): 19–25 mmol/L	• Dehydration (high Na, K, Cl) • Diarrhea (low Na, K, Cl) • Vomiting (low Na, K, Cl)

TABLE 27.2 **Lab Values** (Sources: American College of Clinical Pharmacy, n.d.; Cleveland Clinic, 2024, 2022a, 2022c, 2022d, 2022e, 2022f, 2022g; Jewell, 2020.)

Serum Laboratory Study	Normal Range	Associated Bowel Conditions
Liver function tests (LFTs)	Adults: • Alanine aminotransferase (ALT): 0–45 U/L • Aspartate aminotransferase (AST): 0–35 U/L • Alkaline phosphatase (ALP): 30–120 U/L • Total bilirubin: 0.2–1.7 mg/dL Children ≥1 year of age: • ALT: 5–55 U/L • AST: 20–60 U/L • ALP: 100–420 U/L • Total bilirubin: <1.5 mg/dL	• IBD (elevated ALT, AST, ALP, and bilirubin) • Biliary obstruction (elevated ALP and bilirubin) • Liver involvement in GI disorders (elevated ALT, AST, ALP, and bilirubin)
Inflammatory markers	• C-reactive protein (CRP): <0.9 mg/dL • Erythrocyte sedimentation rate (ESR): varies by age and gender	• IBD (elevated CRP and ESR) • Perforation (elevated CRP and ESR) • Infectious gastroenteritis (elevated CRP and ESR)
Serum albumin	Adults • 3.5–5.5 g/dL Children ≥1 year of age • 3.4–5.2 g/dL	• Malnutrition (low albumin) • Malabsorption disorders (low albumin) • IBD (low albumin) • Liver disease (low albumin)
Thyroid function tests	Adults: • Thyroid-stimulating hormone (TSH): 0.27–4.2 mIU/L Children ≥1 year of age • 0.55–5.31 g/dL	• IBD (low TSH)

TABLE 27.2 Lab Values (Sources: American College of Clinical Pharmacy, n.d.; Cleveland Clinic, 2024, 2022a, 2022c, 2022d, 2022e, 2022f, 2022g; Jewell, 2020.)

A complete blood count (CBC) provides information about the number and types of blood cells present in the bloodstream. Abnormalities in the CBC, such as anemia (low red blood cell count), may indicate GI bleeding, IBD, or malabsorption disorders affecting nutrient absorption. An elevated white blood cell (WBC) count may suggest an inflammatory response in the body, which can occur in conditions like IBD where there is chronic inflammation of the GI tract. Increased platelet count, known as thrombocytosis, may occur in response to inflammation, infection, or bleeding associated with IBD. Low hemoglobin and hematocrit levels may indicate anemia, which is common in IBD and is caused by chronic blood loss from intestinal inflammation and ulceration.

An electrolyte panel measures the levels of electrolytes (e.g., sodium, potassium, chloride, bicarbonate) in the blood. It helps assess electrolyte balance, hydration status, and kidney function. Dehydration can lead to electrolyte disturbances, particularly hypernatremia. When water loss exceeds sodium loss, sodium concentrations in the blood rise, leading to hypernatremia. Conversely, diarrhea can result in hyponatremia caused by excessive loss of sodium-rich fluids in the stool. Potassium levels may also be affected by dehydration, causing hyperkalemia and diarrhea and leading to hypokalemia due to potassium losses in stool.

Vomiting, a common symptom of various GI disorders (e.g., gastroenteritis, gastritis, GI obstruction) can disrupt electrolyte balance through loss of gastric fluid containing electrolytes. Chronic vomiting may lead to hypochloremic metabolic alkalosis, characterized by low chloride levels, and metabolic alkalosis, caused by loss of hydrochloric (HCl) acid in vomit. Potassium losses in vomit can exacerbate electrolyte imbalances, leading to hypokalemia, which can manifest as muscle weakness and cardiac arrhythmias.

Furthermore, electrolyte imbalances can arise secondary to underlying GI disorders, such as IBD, malabsorption syndromes, or GI bleeding. In IBD, chronic inflammation of the bowel can impair electrolyte absorption and secretion, resulting in abnormalities such as hypokalemia, hypomagnesemia, and hypocalcemia. Gastrointestinal bleeding, a complication of conditions like peptic ulcers or colorectal cancer, can lead to iron-deficiency anemia and subsequent electrolyte disturbances, including hypokalemia and hyponatremia, caused by blood loss and fluid shifts.

Liver function tests (LFTs) assess the liver's health and function by measuring levels of enzymes, proteins, and bilirubin in the blood. They help diagnose liver diseases, monitor treatment response, and evaluate liver function. Abnormal LFT results may indicate liver diseases (e.g., hepatitis, cirrhosis, bile duct obstruction), which can affect bowel functioning and digestion. Biliary obstruction caused by certain conditions (e.g., gallstones, tumors, strictures in the bile ducts) can lead to elevated levels of alkaline phosphatase (ALP). This obstruction impedes the free flow of bile, causing its accumulation and subsequent elevation of ALP levels. Concurrently, total bilirubin levels may rise, resulting in jaundice, dark urine, and pale stools. Inflammatory bowel disease, including conditions like Crohn disease and ulcerative colitis, can adversely affect liver function. This manifests as elevated alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels indicative of hepatocellular injury. Additionally, elevated ALP levels in IBD may reflect bile duct injury or obstruction, while elevated total bilirubin levels may signify severe disease, suggesting impaired bilirubin metabolism or excretion due to liver dysfunction or bile duct involvement. Liver involvement in GI disorders (e.g., primary sclerosing cholangitis [PSC], autoimmune hepatitis) can further elevate liver enzymes (ALT, AST, ALP), caused by hepatocellular injury, bile duct inflammation, or cholestasis. Elevated total bilirubin levels in advanced liver diseases associated with GI disorders may indicate impaired bilirubin metabolism or excretion caused by liver dysfunction or bile duct obstruction.

C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) are markers of inflammation that can change in response to bowel-related diseases. The CRP levels tend to rise in the presence of inflammation, making CRP a useful marker for assessing disease activity in bowel-related conditions such as IBD, Crohn disease, and ulcerative colitis. The CRP levels often correlate with the severity of inflammation and disease activity, making it a useful laboratory test result to monitor over time to assess response to treatment and guide therapeutic decisions in managing bowel-related diseases. Elevated CRP levels can also indicate complications of bowel-related diseases (e.g., abscesses, perforation, fistulas) that can trigger an acute inflammatory response. Like CRP, ESR tends to increase in the presence of inflammation, including bowel-related diseases such as IBD. An ESR elevation may be more pronounced in chronic inflammatory conditions like IBD compared to acute inflammatory processes. However, ESR changes are less specific than CRP and may be influenced by other factors such as anemia or infection, limiting its utility as a stand-alone marker for assessing disease activity in bowel-related diseases. Despite its limitations, ESR can still provide valuable information when interpreted in conjunction with other clinical findings and laboratory tests.

Albumin, a protein synthesized by the liver, serves as a crucial marker of nutritional status and liver function. In various GI conditions (e.g., malnutrition, malabsorption disorders, IBD, liver disease), albumin levels can undergo characteristic changes. In instances of malnutrition, insufficient intake of protein and calories leads to decreased albumin synthesis by the liver, resulting in hypoalbuminemia. Similarly, malabsorption disorders impair nutrient absorption, including protein, exacerbating hypoalbuminemia. Inflammatory bowel disease, marked by chronic GI inflammation, further contributes to decreased albumin synthesis and increased loss through the gut. Liver disease (e.g., cirrhosis hepatitis) significantly impairs albumin production because of chronic liver damage and inflammation, leading to hypoalbuminemia and associated complications. Monitoring albumin levels in these conditions offers valuable insights into nutritional status, disease severity, and liver function, guiding appropriate management strategies. However, interpretation of albumin levels should take into consideration other clinical findings to ensure comprehensive patient care.

Thyroid function tests assess thyroid-stimulating hormone (TSH) levels in the blood, which play a role in regulating

metabolism and bowel motility. Malabsorption disorders (e.g., celiac disease, IBD) can disrupt the absorption of essential nutrients, including iodine and selenium, which are crucial for thyroid hormone synthesis. Consequently, inadequate levels of these nutrients may lead to hypothyroidism, characterized by elevated TSH levels as the body attempts to stimulate thyroid hormone production. Additionally, medications commonly used to manage GI conditions, such as PPIs or certain antibiotics, may interfere with thyroid hormone absorption or metabolism, further altering thyroid hormone levels and subsequently affecting TSH levels.

By interpreting the results of these serum laboratory studies in conjunction with clinical findings and patient history, healthcare providers can gain valuable insights into proper bowel functioning, diagnose underlying conditions affecting bowel health, and develop targeted treatment plans to optimize GI function and overall well-being. Additionally, serial monitoring of these laboratory parameters allows for ongoing assessment of bowel health and treatment response over time.

Stool Tests

Stool tests, also known as fecal tests or stool analyses, are diagnostic tools used to assess various aspects of bowel functioning by analyzing the composition, characteristics, and contents of stool samples. Examples of stool tests include **Cologuard**, **fecal occult blood test (FOBT)**, **fecal immunochemical test (FIT)**, **stool culture**, and **ova and parasite examination**. These tests are valuable diagnostic tools in assessing bowel function by detecting occult blood, identifying pathogens, and diagnosing intestinal infections. Stool tests play a crucial role in the evaluation and management of various GI conditions, aiding in early detection, diagnosis, and treatment decisions. Table 27.3 provides an overview of the purpose, procedure, and interpretation of each stool test commonly used to evaluate bowel functioning.

Stool Test	Purpose	Procedure	Interpretation
Cologuard	• Screen for colorectal cancer and precancerous polyps.	• A Cologuard kit is mailed to the patient's home. The patient collects a stool sample using the provided materials and mails the sample back to the laboratory in a prepaid, prelabeled box.	• Positive results indicate abnormal DNA and/or blood in the stool, warranting follow-up with a colonoscopy to further investigate and confirm findings.
Fecal occult blood test (FOBT)	• Detect occult blood in stool samples, indicating gastrointestinal (GI) bleeding.	• Collect stool sample and test for the presence of blood using chemical reagents.	• Positive results may indicate GI bleeding, warranting further investigation (e.g., colonoscopy).
Fecal immunochemical test (FIT)	• Detect occult blood in stool samples with improved sensitivity and specificity compared to FOBT.	• Collect stool sample and test for human hemoglobin using immunochemical methods.	• Positive results indicate the presence of blood in the stool, necessitating further evaluation to identify potential sources of bleeding.

TABLE 27.3 Stool Tests (Sources: Nemours Kids Health, 2023; Cologuard, 2024.)

Stool Test	Purpose	Procedure	Interpretation
Stool culture	• Identify pathogenic bacteria, viruses, or parasites responsible for GI infections.	• Collect stool sample and culture on specific media to facilitate the growth of microorganisms. Perform biochemical tests to characterize isolates.	• Positive cultures reveal the presence of pathogens (e.g., *Salmonella*, *Shigella*, parasites), which guides appropriate antimicrobial therapy.
Ova and parasite examination	• Detect parasite eggs, larvae, or cysts in stool samples, indicating intestinal parasitic infections.	• Examine stool sample microscopically for the presence of parasite ova, larvae, or cysts using staining techniques.	• Positive findings of parasites or their eggs confirm the diagnosis of intestinal parasitic infections, prompting initiation of appropriate treatment.

TABLE 27.3 **Stool Tests** (Sources: Nemours Kids Health, 2023; Cologuard, 2024.)

Breath Tests

A **breath test** is a noninvasive diagnostic tool used to assess various aspects of bowel functioning, particularly related to carbohydrate metabolism and bacterial overgrowth in the GI tract. Breath tests involve measuring the levels of specific gases exhaled in breath samples following the ingestion of a substrate, typically a sugar or other fermentable carbohydrate.

The **hydrogen breath test** is primarily used to detect bacterial overgrowth in the small intestine and assess carbohydrate malabsorption, particularly lactose intolerance. For this procedure, the patient ingests a **substrate** (a substance or compound that undergoes a chemical reaction or is acted on by an enzyme to produce a specific product) containing a fermentable carbohydrate, such as lactose or glucose. If bacterial overgrowth or malabsorption is present, bacteria in the small intestine ferment the carbohydrate, producing hydrogen gas, which is absorbed into the bloodstream and eventually exhaled through the lungs. Breath samples are collected at regular intervals over several hours, and the levels of hydrogen in the breath are measured. A significant increase in hydrogen levels compared to baseline suggests bacterial overgrowth or malabsorption, indicating improper bowel functioning.

The **methane breath test**, similar to the hydrogen breath test, evaluates bacterial overgrowth and carbohydrate malabsorption, focusing on methane-producing bacteria. After ingesting a fermentable carbohydrate substrate, breath samples are collected and analyzed for methane levels. Methane is produced by certain bacteria during carbohydrate fermentation in the gut. Elevated methane levels indicate the presence of methane-producing bacteria and can suggest bacterial overgrowth or carbohydrate malabsorption.

The **lactulose breath test** is specifically designed to diagnose small intestinal bacterial overgrowth by assessing the transit time and bacterial fermentation in the small intestine. The patient ingests a solution containing lactulose, a nonabsorbable sugar. As lactulose passes through the small intestine, it is fermented by bacteria, producing hydrogen and/or methane gas. Breath samples are collected at regular intervals to measure gas levels. Elevated levels of hydrogen and/or methane indicate bacterial overgrowth in the small intestine, suggesting improper bowel functioning.

Genetic Testing

By identifying genetic mutations associated with specific GI disorders, **genetic testing** serves as a valuable diagnostic tool in evaluating proper bowel functioning. Primarily used in hereditary GI conditions like familial adenomatous polyposis and Lynch syndrome, genetic testing targets specific genes linked to these disorders. By detecting mutations in these genes, healthcare providers can assess an individual's risk of developing colorectal

cancer or other GI malignancies, facilitating early intervention and surveillance measures.

Additionally, genetic testing plays a role in clarifying the genetic basis of IBD, including Crohn disease and ulcerative colitis. While the genetic landscape of IBD remains complex, specific susceptibility genes can be identified through genetic testing, aiding in risk assessment and treatment decision-making. Moreover, in conditions like celiac disease, genetic testing helps identify individuals predisposed to gluten intolerance and autoimmune damage to the small intestine. Advancements in genomic technology offer promise in assessing an individual's overall genetic risk for GI disorders by aggregating information from multiple genetic variants across the genome.

Imaging Studies

Imaging studies are essential diagnostic tools used to assess proper bowel functioning by providing detailed visualization of the GI tract and surrounding structures. They play a crucial role in diagnosing various GI disorders and assessing bowel functioning by providing detailed anatomical information and identifying structural abnormalities or pathological changes. Interpretation of imaging results requires collaboration between radiologists and gastroenterologists to guide appropriate management and treatment decisions for patients. Table 27.4 provides an overview of the purpose, procedure, and interpretation of each imaging study commonly used to evaluate bowel functioning.

Imaging Study	Purpose	Procedure	Interpretation
X-ray	Evaluate bowel obstruction, perforation, or other structural abnormalities.	Patient may ingest contrast material before and/or during x-rays or undergo abdominal x-rays without contrast.	Abnormal findings (e.g., air-fluid levels, dilated loops of bowel, free air under the diaphragm) may indicate pathology.
Computed tomography (CT) scan	Assess bowel wall thickness, inflammation, tumors, or other abnormalities.	Patient may receive oral or intravenous contrast to enhance visualization of the gastrointestinal (GI) tract.	Abnormal findings may reveal signs of inflammatory bowel disease, tumors, strictures, or other pathologies affecting bowel functioning.
Magnetic resonance imaging (MRI)	Provide detailed imaging of the GI tract without ionizing radiation.	Patient may receive oral contrast or undergo MRI without contrast.	MRI scans can identify bowel wall thickening, inflammation, fistulas, or abscesses, aiding in the diagnosis of various GI disorders.
Barium swallow/ upper GI series	Evaluate the upper GI tract, including the esophagus, stomach, and duodenum.	Patient ingests barium contrast, followed by x-rays to observe the passage of contrast through the upper G tract.	Abnormalities (e.g., ulcers, strictures, tumors, motility disorders) may be detected in the upper GI tract.
Barium enema/ lower GI series	Examine the lower GI tract, including the colon and rectum.	Barium contrast is introduced into the colon via an enema, followed by x-rays to visualize the colon and rectum.	Findings (e.g., polyps, diverticula, strictures, tumors) may be identified in the colon and rectum, aiding in the diagnosis of colorectal conditions.

TABLE 27.4 Imaging Studies (Source: Sun et al., 2023.)

A special dye, called **contrast**, is administered to patients before some tests so that certain areas show up better on the x-rays, MRIs, and CT scans (Figure 27.5). If contrast is used, the patient may be required to remain NPO (nothing passed orally/by mouth) for four to six hours before the test. Contrast can be administered orally or intravenously

(IV). Oral contrast has a chalky taste and will pass out of the body through the stools. Patients receiving IV contrast may feel a slight burning sensation, metallic taste in the mouth, or warm flushing of the body that resolves in a few seconds.

FIGURE 27.5 During a barium enema, the barium coats the lining of the colon, making it visible on the x-ray images. This allows the radiologist to evaluate the size, shape, and contour of the colon, as well as the presence of any abnormalities, such as polyps, tumors, or areas of inflammation. (credit: "Human intestinal tract, as imaged via double-contrast barium enema" by "Glitzy queen00"/Wikimedia Commons, Public Domain)

Before sending the patient for a procedure using contrast, check for previous allergies to iodine or other contrast dyes. Some patients may be prescribed diphenhydramine or corticosteroids before receiving the contrast if they have had a previous allergic reaction. Verify the patient's kidney status because IV contrast can worsen kidney function. If the patient is currently taking the antidiabetic medication metformin, there may be restrictions placed on the administration of metformin before or after the procedure. This is because the contrast dye used in these imaging tests can affect kidney function, and metformin can accumulate in the body if the kidneys are not working properly, potentially leading to a serious condition called lactic acidosis. For example, patients may be advised to stop taking metformin forty-eight hours before the procedure and to refrain from resuming it until forty-eight hours after the procedure, pending the confirmation of normal kidney function. Jewelry should be removed before the procedure. After the procedure, encourage patients who have received contrast to increase their fluid intake to help eliminate it from their body, as appropriate (Medline Plus, 2022).

After undergoing a barium enema study, patients may experience a sense of relief after the enema is complete, and they can typically resume their normal activities shortly afterward. In the hours following the procedure, patients will likely pass the barium contrast material during bowel movements, resulting in stools that are white or light-colored because of the presence of the contrast material. This is a normal part of the process, and it is essential for the patient to stay hydrated to help flush the barium out of the system. Some patients may experience mild abdominal discomfort or cramping after the procedure, which should resolve within a few hours. Changes in stool consistency, such as firmer stools, may occur temporarily because of the presence of the contrast material; however, increasing fiber intake and staying hydrated can help normalize stool consistency. While rare, severe side effects such as allergic reactions to the contrast material or bowel complications may occur, requiring immediate medical attention if experienced.

REAL RN STORIES

Using Imaging Studies to Diagnose Bowel Conditions

Nurse: Marco, BSN
Clinical setting: Emergency department
Years in practice: 3
Facility location: The inner city of a large metropolitan area in Florida

A few year ago, I had a patient named Mr. Garcia who come into the emergency room with severe abdominal pain. You could tell by the look on his face that he was suffering greatly, and I knew immediate action was needed. The provider ordered an abdominal x-ray to get a clearer picture of what was going on inside his abdomen.

As Mr. Garcia underwent the imaging study, I couldn't help but feel a sense of urgency. The results were crucial; they could shed light on the severity of his condition and what action I needed to take next. The x-ray showed severe fecal impaction and significant colon distension, and we needed to act fast to relieve his suffering and prevent further complications.

With a sense of urgency, I assisted the medical team in implementing treatment strategies, including hydration, laxatives, and gentle disimpaction under the provider's guidance. Throughout the process, I stayed by Mr. Garcia's side, offering comfort and support as he endured the discomfort. Witnessing the relief on his face as the treatments took effect was incredibly rewarding, knowing we were making a positive difference in his recovery.

A while later, Mr. Garcia finally found relief, passing a substantial stool. It was a small victory, but it meant the world to him and to us. As he expressed his gratitude for our efforts, I felt a deep sense of satisfaction, knowing we had helped him through a difficult time.

This experience reinforced the importance of swift action, collaboration, and empathy in nursing. It's moments like these that remind me why I became a nurse—to make a difference in the lives of patients like Mr. Garcia, providing compassionate care when they need it most.

Endoscopic Procedures

Endoscopic procedures are instrumental in assessing proper bowel functioning by allowing direct observation of the GI tract and obtaining tissue samples for analysis. Some examples of endoscopic procedures include **esophagogastroduodenoscopy (EGD)**, **colonoscopy**, **flexible sigmoidoscopy**, **endoscopic retrograde cholangiopancreatography (ERCP)**, and **capsule endoscopy**. Interpretation of endoscopic findings requires expertise and collaboration between endoscopists and pathologists to guide appropriate management and treatment decisions for patients. Table 27.5 provides an overview of the purpose, procedure, and interpretation of each endoscopic procedure commonly used to evaluate bowel functioning.

Endoscopic Procedure	Purpose	Procedure	Interpretation
Esophagogastroduodenoscopy (EGD)	Evaluate the esophagus, stomach, and duodenum for abnormalities such as ulcers, inflammation, or tumors.	A flexible endoscope is passed through the mouth into the esophagus, stomach, and duodenum. Biopsies may be obtained for further analysis.	Findings such as esophageal ulcers, gastritis, peptic ulcers, or duodenal tumors may indicate pathology affecting the upper GI tract.
Colonoscopy	Examine the colon and rectum for abnormalities such as polyps, inflammation, or tumors.	A flexible colonoscope is inserted through the rectum into the colon. Polyps may be removed, and biopsies can be obtained for analysis.	Identification of polyps, inflammation, diverticula, or colorectal tumors can aid in the diagnosis of conditions such as colorectal cancer, inflammatory bowel disease, or diverticulitis.
Flexible sigmoidoscopy	Evaluate the rectum and sigmoid colon for abnormalities such as polyps, inflammation, or tumors.	A flexible sigmoidoscope is inserted through the rectum into the sigmoid colon. Biopsies may be obtained if necessary.	Findings such as sigmoid polyps, proctitis, or rectal tumors may indicate pathology affecting the lower GI tract.
Endoscopic retrograde cholangiopancreatography (ERCP)	Assess the bile ducts and pancreatic duct for abnormalities such as stones, strictures, or tumors.	A flexible endoscope is advanced through the mouth into the duodenum. Contrast dye is injected into the bile and pancreatic ducts for imaging.	Identification of bile duct stones, strictures, or pancreatic tumors can aid in the diagnosis and management of conditions such as choledocholithiasis or pancreatic cancer.
Capsule endoscopy	Evaluate the small intestine for abnormalities such as bleeding, inflammation, or tumors.	Patient swallows a capsule containing a camera, which captures images of the small intestine as it passes through the digestive tract.	Visualizing small intestinal abnormalities (e.g., bleeding sources, Crohn disease, small bowel tumors) can aid in the diagnosis of conditions affecting the small intestine.

TABLE 27.5 **Endoscopic Procedures** (Sources: Cleveland Clinic, 2022b, 2023a, 2023b.)

Laparoscopy

A minimally invasive surgical procedure, **laparoscopy** serves as a valuable diagnostic and therapeutic tool in assessing and addressing various GI conditions that may adversely affect bowel functioning. In a diagnostic laparoscopy, the abdominal cavity and its organs are meticulously examined for abnormalities (e.g., adhesions, tumors, inflammation) that could affect bowel function. This is achieved by inserting a laparoscope, a thin tube equipped with a camera, through small incisions in the abdomen, allowing direct observation of the abdominal

organs. Identification of such abnormalities during diagnostic laparoscopy provides crucial insights into the underlying causes of bowel dysfunction, such as adhesion-related bowel obstruction or IBD, guiding subsequent treatment decisions.

Therapeutic laparoscopy extends beyond diagnosis to address the underlying causes of bowel dysfunction identified during the diagnostic procedure. Through additional incisions, surgical instruments are introduced to perform therapeutic interventions such as **adhesiolysis** (removal of adhesions), tumor resection, or bowel resection. These interventions aim to alleviate obstructions, remove tumors, or address inflammatory processes, ultimately improving bowel functioning and alleviating symptoms associated with GI conditions. Laparoscopy offers several advantages over traditional open surgery, including smaller incisions, reduced postoperative pain, and shorter hospital stays, making it an effective and preferred approach in the evaluation and management of bowel-related issues.

The Nurse's Role in Diagnostic Testing for Functional Bowel Elimination

Diagnostic testing for functional bowel elimination plays a crucial role in assessing and managing various GI conditions. Nurses, as frontline caregivers, play an integral role in facilitating this process, ensuring effective patient care and treatment outcomes. The nurse's involvement in diagnostic testing for functional bowel elimination spans a range of duties, including performing assessments, implementing nursing interventions, educating patients, preparing them for procedures, assisting during the procedures, and providing postprocedural care. By fulfilling these responsibilities with compassion, competence, and professionalism, nurses contribute significantly to the delivery of high-quality care and positive patient outcomes in the field of GI health.

Nursing Assessment

In the realm of diagnostic testing for functional bowel elimination, nurses play a pivotal role through their expertise in conducting thorough nursing assessments. Nurses are uniquely positioned to gather comprehensive data regarding a patient's bowel habits, GI symptoms, dietary patterns, and overall health history. Through skilled assessment techniques, nurses can identify potential risk factors, symptoms of bowel dysfunction, and contributing factors such as dietary habits, stress levels, and medication use. For example, a nurse conducting a nursing assessment may ask a patient about their typical daily intake of fiber-rich foods, hydration status, and any recent changes in diet or lifestyle that could adversely affect bowel function.

Nursing assessment of stool characteristics includes carefully observing and documenting various aspects of the stool to gather valuable information about a patient's GI health. This comprehensive assessment involves evaluating the consistency, color, and odor of the stool. The texture of the stool is referred to as **consistency** and ranges from hard and formed to soft and loose, which can provide insights into bowel function and hydration status. Nurses also note the color of the stool, which can indicate different conditions or dietary factors. For instance, black, sticky, tarry stools (**melena**) may suggest upper GI bleeding, while pale or clay-colored stools may indicate issues with bile production or flow. On the other hand, **hematochezia** (also known as **rectal bleeding**), bright red blood in the stools, is a sign of bleeding from the lower GI tract. Any sign of blood should always be reported to the healthcare provider. Additionally, nurses assess the odor of the stool, which can offer clues about digestive processes or bacterial activity in the gut.

By establishing open communication and fostering a trusting relationship with patients, nurses create an environment in which individuals feel comfortable sharing sensitive information related to their bowel habits and GI concerns. By actively listening to patient concerns, validating their experiences, and providing education on healthy bowel habits and lifestyle modifications, nurses empower patients to actively participate in their own care and advocate for their needs. Additionally, nurses employ their clinical judgment and critical-thinking skills to interpret assessment findings, recognize patterns of bowel dysfunction, and determine the need for further diagnostic testing or interventions. For instance, if a patient reports symptoms suggestive of bowel obstruction (e.g., severe abdominal pain, distension, vomiting), the nurse promptly recognizes the need for urgent medical evaluation and intervention. Similarly, if a patient presents with chronic constipation or diarrhea, the nurse collaborates with the healthcare team to implement evidence-based interventions, such as dietary modifications, pharmacological therapies, or referral to a gastroenterologist for further evaluation. Through their holistic approach to nursing assessment, nurses not only contribute valuable insights to the diagnostic process but also serve as advocates for patients, ensuring their needs are addressed and promoting optimal bowel health outcomes.

Nursing Interventions to Promote Bowel Elimination

Nurses play a crucial role not only in facilitating the diagnostic process but also in implementing nursing interventions to promote optimal bowel elimination. Through their expertise in GI health and patient-centered care, nurses employ a variety of interventions aimed at improving bowel function, alleviating symptoms, and enhancing overall bowel health. Some nursing interventions commonly used to promote bowel elimination include the following:

- Education and lifestyle modifications: Nurses provide patient education on healthy bowel habits, emphasizing the importance of adequate hydration, dietary fiber intake, regular exercise, optimal positioning to promote bowel elimination, and stress management techniques. By empowering patients with knowledge about factors that influence bowel function, nurses help individuals make informed lifestyle choices to support optimal bowel elimination.
- Nutritional counseling: Nurses collaborate with dietitians to develop individualized dietary plans tailored to each patient's needs and preferences. For instance, patients with constipation may benefit from increasing fiber-rich foods in their diet, while those with diarrhea may require dietary modifications to reduce irritants such as caffeine or spicy foods. Nurses monitor dietary intake, provide dietary counseling, and reinforce the importance of balanced nutrition for bowel health.
- Medication management: Nurses administer prescribed medications to manage symptoms of bowel dysfunction, such as laxatives for constipation or antidiarrheal agents for diarrhea. They also monitor medication effectiveness, assess for adverse effects, and educate patients on proper medication use and potential side effects. Additionally, nurses collaborate with healthcare providers to adjust medication regimens based on patient response and treatment goals.
- Bowel training programs: For patients with impaired bowel function (e.g., fecal incontinence, constipation), nurses implement bowel training programs to establish regular bowel habits and improve bowel control. These programs may include scheduled toileting routines, biofeedback therapy, pelvic floor exercises, and relaxation techniques to enhance sphincter control and promote efficient bowel evacuation.
- Promotion of physical activity: Nurses encourage patients to engage in regular physical activity because exercise can stimulate bowel motility and promote regular bowel movements. Nurses assess patients' mobility levels, provide recommendations for safe exercise routines, and collaborate with physical therapists to develop individualized exercise plans tailored to each patient's abilities and limitations.
- Hygiene and skin care: Nurses provide meticulous perineal care for patients with bowel incontinence to prevent skin breakdown, irritation, and infection. They assist patients with proper hygiene practices, including gentle cleansing, application of protective barrier creams, and frequent changes of incontinence products (disposable briefs, diapers), as needed.

Through these nursing interventions, nurses play a vital role in promoting bowel elimination, enhancing patient comfort, and improving overall quality of life for individuals with functional bowel disorders. By delivering compassionate, patient-centered care and collaborating with interdisciplinary healthcare teams, nurses contribute to positive outcomes and empower patients to achieve optimal bowel health.

PATIENT CONVERSATIONS

How to Educate a Patient on Strategies for Promoting Bowel Elimination

Scenario: Mrs. Perkins, a 65-year-old female, arrives at the clinic for her routine checkup. During her check-in process, she mentions that she has been experiencing discomfort caused by constipation lately and has tried various home remedies without much success. The office assistant has the patient complete a questionnaire to describe her diet, fluid consumption, activity levels, and medications taken.

Nurse: Hi Mrs. Perkins. My name is Macey and I'm the nurse who will be working with you today.

Patient: Hi Macey, I've been having some trouble with constipation lately, and it's really been bothering me. Do you have any suggestions to help relieve my constipation?

Nurse: Thank you for completing this questionnaire. It will really help you and I find some ways to relieve your

constipation. First, let's talk about your diet. According to the information you provided, it looks like you should consider increasing your fiber intake by incorporating more fruits, vegetables, and whole grains. This can help add bulk to your stool and promote regular bowel movements. Another thing that I noticed considering your response to the questionnaire, is that you probably ought to be drinking more fluids. It's important to stay hydrated by drinking plenty of water throughout the day because dehydration can contribute to constipation.

Patient: I'll definitely try to drink more water but I have trouble finding recipes that I like for cooking vegetables.

Nurse: Do you like raw vegetables like carrots, celery, radishes, cauliflower, and broccoli?

Patient: Actually, I do, especially if I dip them in salad dressing.

Nurse: That sounds great. Vegetables are even healthier if you eat them raw. You can also cut them up into a salad. By the way, the darker green lettuces are the best for your gut, like romaine and spinach. Do you like fruits?

Patient: I do but they seem to go bad too fast.

Nurse: Maybe try buying only two fruits each week like a container of strawberries and another of blackberries then switch to two different fruits next week like a few bananas and a container of raspberries. That way you should finish them before its time to buy two more.

Patient: You're right. I get excited about how good they look and buy too many at once. Do you recommend anything else?

Nurse: Physical activity can also help stimulate bowel movements. Regular exercise, such as walking, jogging, or yoga, can help promote bowel motility and alleviate constipation. Additionally, establishing a regular toileting routine can train your body to respond to the urge to defecate. Try to set aside time each day for bowel movements, and don't ignore the urge when it comes.

Patient: I'll make sure to incorporate some exercise into my daily routine and try to stick to a regular toileting schedule. Are there any other things I should consider?

Nurse: Yes, for some individuals, over-the-counter laxatives or stool softeners may be helpful in relieving constipation. However, it's important to use these medications under the guidance of a healthcare professional because they can have side effects and may not be suitable for everyone. Finally, managing stress and anxiety through relaxation techniques, such as deep breathing or meditation, can also help improve bowel function.

Patient: Thank you so much, Macey. I feel better knowing there are steps I can take to deal with my constipation. I'll definitely give these suggestions a try and let you know how it goes.

Nurse: You're welcome. Remember, everyone's body is different, so it may take some time to find the right combination of interventions that work for you. I've been taking notes on my computer while we've been talking so I'll print out a condensed description of all the things we talked about. That way you'll have something to review; but, don't hesitate to reach out if you have any questions or concerns along the way.

Education for a Gastrointestinal Procedure

Nurses assume a critical role in educating patients about the procedures involved in diagnostic testing and therapeutic treatment for functional bowel elimination. As frontline healthcare providers, nurses serve as primary sources of information, guiding patients through the diagnostic and therapeutic processes and addressing their concerns and apprehensions. Before undergoing a GI procedure, nurses may reiterate explanations of the procedure, including its purpose, expected outcomes, potential risks, and any preparatory steps required. Through clear and concise communication, nurses ensure that patients understand what to expect before, during, and after the procedure, helping to alleviate anxiety and promote informed decision-making.

For example, when preparing a patient for a colonoscopy, nurses explain the necessity of bowel preparation to cleanse the colon and facilitate optimal visualization during the procedure. They provide detailed instructions on dietary restrictions, laxative use, and fluid intake, ensuring that patients adhere to the prescribed regimen for effective bowel cleansing. Nurses also discuss the sedation process, potential side effects, and postprocedure care instructions, empowering patients to actively participate in their own care and minimize procedural complications.

PATIENT CONVERSATIONS

Educating a Patient on Bowel Preparation

Nurse: Good morning, Mr. Johnson. My name is Jen. I'm a nurse here and ready to go over the details of your colonoscopy preparation with you. How are you feeling today?

Patient: Good morning, Jen. I'm a bit nervous about the whole process, to be honest.

Nurse: That's completely understandable. Let's take it step by step, and I'll make sure you have all the information you need. First, the purpose of the colonoscopy is to examine your colon for any abnormalities, such as polyps or signs of disease.

Patient: Okay, I understand. But what do I need to do to prepare for it?

Nurse: The preparation involves thoroughly cleansing your colon so that the provider can get a clear view during the procedure. You will need to follow a special diet for a few days before the colonoscopy, which typically involves avoiding solid foods and consuming only clear liquids. Then, the day before the procedure, you'll need to take a laxative solution to empty your bowels completely.

Patient: That sounds like a lot to manage. Will I be able to eat or drink anything before the colonoscopy?

Nurse: Unfortunately, no solid foods will be allowed the day before the procedure. You'll only be able to consume clear liquids like broth, water, and juice without pulp. You may also have sports drinks (Gatorade), popsicles, and gelatin dessert (Jell-O), but nothing you eat or drink can be red or purple. It is essential to stay hydrated, so please consume plenty of these fluids. But remember, you must avoid milk, smoothies, and soup even though they are liquids.

Patient: Got it. Is there anything else I should know or do to prepare?

Nurse: Yes, it's crucial to follow the instructions provided by your healthcare provider precisely. This includes when to start and stop eating and drinking as well as when to take the laxative solution. It's also important to arrange for someone to drive you home after the procedure because you'll be under the effects of sedation.

Patient: Thank you for explaining everything, Jen. I think I understand now and I'm not so nervous.

Nurse: You're welcome, Mr. Johnson. Here's description of all the things we talked about for you to take with you. Remember, we're here to support you every step of the way. If you have any more questions or concerns, don't hesitate to call.

In addition to procedural education, nurses play a key role in addressing patients' emotional and psychological needs throughout the process. They offer empathetic support, answer questions, and provide reassurance to alleviate anxiety and enhance patient comfort. By fostering a supportive and compassionate environment, nurses help patients feel more confident and empowered as they undergo GI procedures for functional bowel elimination.

Administration of Bowel Prep

Nurses play a vital role in administering bowel prep to ensure optimal conditions for accurate examination of the GI tract. Often abbreviated as "bowel prep," **bowel preparation (bowel prep)** is a medical procedure that involves cleansing the GI tract, particularly the colon, in preparation for certain medical procedures or surgeries (e.g., colonoscopy, sigmoidoscopy, barium enema). The purpose of a bowel prep is to ensure that the colon is empty and free of stool, allowing for better visualization and examination of the intestinal lining during these procedures (Cleveland Clinic, 2022c; Patel et al., 2023). Bowel prep typically involves consuming a special liquid diet or taking laxatives to induce bowel movements and clear the colon of any remaining feces (Patel et al., 2023).

Nurses are responsible for guiding patients through the bowel preparation process, ensuring compliance with prescribed protocols, and providing support and education to facilitate successful bowel cleansing. Nurses begin by assessing patients' understanding of the bowel prep regimen and addressing any concerns or questions they may have. They provide detailed instructions on the type of bowel prep solution to be used, dosage, timing of administration, dietary restrictions, and fluid intake requirements. Additionally, nurses discuss potential side effects

of the bowel prep (e.g., nausea, bloating, diarrhea) and offer strategies to manage these symptoms effectively.

During administration of the bowel prep, nurses closely monitor patients' adherence to the prescribed regimen and provide ongoing support and encouragement. They offer reminders and guidance to ensure patients follow the recommended schedule for consuming bowel prep solutions and adhere to dietary restrictions. For example, patients may be instructed to eat a low-fiber diet for several days before beginning their bowel prep, followed by a clear liquid diet the day before the scheduled procedure. Nurses also assess patients' tolerance to the bowel prep and promptly address any concerns or complications that may arise, such as dehydration or electrolyte imbalances.

Moreover, nurses play a crucial role in assessing patients' readiness for the procedure following completion of the bowel prep. They monitor patients' hydration status, vital signs, and overall well-being, and communicate any pertinent information to the healthcare team. Nurses provide reassurance and emotional support to alleviate anxiety and discomfort associated with the bowel preparation process, helping patients feel more at ease as they undergo diagnostic testing for functional bowel elimination.

A key component of preprocedural education for a GI test or procedure under moderate sedation is to ensure that the patient will have a responsible adult available to take them home and stay with them for twenty-four hours. It is important to make sure that the patient understands that using a taxi or rideshare option (e.g., Lyft, Uber) is not an allowed method of going home after the procedure unless a responsible adult accompanies the patient on the ride home. Many patients ask why this is not allowed. The nurse must explain that the driver cannot be held accountable for providing care on the ride home; therefore, a responsible adult must accompany the patient.

LINK TO LEARNING

Resources for learning about the types of bowel prep kits and their instructions for use (https://openstax.org/r/77BowelPrep) are provided by the Cleveland Clinic. This information can also be shared with patients who are undergoing bowel preparation.

Through their expertise in patient education, assessment, and support, nurses contribute significantly to the successful administration of bowel preparation and facilitate optimal conditions for GI procedures. Their compassionate care and attention to detail help ensure patient safety, comfort, and adherence to treatment protocols, ultimately enhancing the accuracy and effectiveness of diagnostic testing or therapeutic procedure for functional bowel elimination.

Monitoring After Moderate Sedation

Also known as **conscious sedation**, **moderate sedation** is a medical technique used to induce a state of reduced consciousness and relaxation in patients undergoing certain medical procedures or interventions. Unlike general anesthesia, in which the patient is completely unconscious, moderate sedation aims to keep patients in a state where they can respond to verbal commands and physical stimulation. During moderate sedation, patients may experience drowsiness, reduced anxiety, and a decreased awareness of their surroundings. This sedation level is commonly used for procedures such as minor surgeries, endoscopies, and colonoscopies.

Before the procedure, nurses assess patients' medical history, current medications, allergies, and fasting status to determine their suitability for moderate sedation. They educate patients about the sedation process, including its purpose, potential side effects, and instructions to follow before and after the procedure. Nurses participate in the informed consent process by ensuring that all necessary preparations (e.g., placing IV access, initiating monitoring) are in place before sedation administration. The proceduralist is responsible for obtaining the patient's consent and signature.

During the procedure, nurses continuously monitor the patient's vital signs (e.g., heart rate, blood pressure, respiratory rate, oxygen saturation), observe their response to sedation, and watch for any signs of adverse reactions or complications. They maintain open communication with the procedural team, providing updates on the patient's condition and intervening promptly if necessary to ensure patient safety.

After the procedure, nurses monitor patients closely during the recovery period, assessing their level of consciousness, airway patency, and response to stimuli. They provide supportive care, such as positioning patients

to maintain airway patency and administering supplemental oxygen as needed. Nurses assess for signs of respiratory depression, hypotension, or allergic reactions to sedative medications and intervene promptly to address any complications that may arise.

Moreover, nurses provide thorough education and discharge instructions to patients and their caregivers before discharge from the recovery area. They review potential side effects of sedation, instructions for postprocedure care, and signs of complications to watch for at home. Nurses ensure that patients are stable, alert, and able to tolerate oral fluids before discharge, and ensure that the patient has safe transportation home with a responsible adult.

27.4 Common Conditions Affecting Bowel Elimination

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Discuss how constipation affects bowel elimination
- Identify how diarrhea affects bowel elimination
- Recognize how fecal incontinence affects bowel elimination

Understanding how various conditions affect bowel elimination is crucial for nurses in providing comprehensive and effective patient care. Constipation, diarrhea, and fecal incontinence are common GI issues that can significantly affect bowel function and overall well-being. In this section, we analyze how constipation affects bowel elimination, followed by discussions on the effects of diarrhea and fecal incontinence. Nurses need to be well-versed in these topics to assess, manage, and educate patients about their bowel health. By recognizing the signs, symptoms, and implications of these conditions, nurses can develop tailored interventions to promote optimal bowel function, alleviate discomfort, and improve quality of life for their patients.

Constipation

A common GI condition, **constipation** is characterized by infrequent or difficult passage of stool. It can be caused by slowed peristalsis caused by decreased activity, dehydration, lack of fiber, medications (e.g., opioids, diuretics), depression, or abdominal surgical procedures. As the stool moves slowly through the large intestine, additional water is reabsorbed, resulting in the stool becoming hard, dry, and difficult to move through the lower intestines.

Clinical Manifestations

Constipation disrupts the normal process of bowel elimination, leading to various physiological and psychological effects. Physiologically, constipation manifests as infrequent and difficult bowel movements, often defined as fewer than three bowel movements per week (Cleveland Clinic, 2023a). Bowel movements become challenging to pass, requiring increased straining and exertion. This condition is accompanied by abdominal discomfort and pain, characterized by cramping sensations and bloating. The accumulation of gas and stool in the intestines exacerbates this discomfort.

The **Bristol Stool Chart** is a diagnostic medical tool designed to classify the form of human feces into seven categories (Figure 27.6). These categories range from type 1, which indicates constipation, to type 7, which indicates diarrhea. The chart provides a visual reference for healthcare professionals to assess and discuss bowel movements with patients, helping to diagnose and manage various GI conditions. Each type of stool is described based on its appearance and consistency, allowing for better communication and understanding between patients and healthcare providers regarding bowel health. Types 1 and 2 are associated with constipation. Type 1 consists of separate hard lumps, while type 2 is characterized by lumpy, sausage-like stools with a hard consistency.

The Bristol Stool Scale			
Type 1	Severe constipation	Separate hard lumps, like nuts (hard to pass)	
Type 2	Mild constipation	Sausage-shaped but lumpy	
Type 3	Normal	Like a sausage but with cracks on the surface	
Type 4	Normal	Like a sausage or snake, smooth and soft	
Type 5	Lacking fiber	Soft blobs with clear-cut edges	
Type 6	Mild diarrhea	Fluffy pieces with ragged edges, a mushy stool	
Type 7	Severe diarrhea	Watery, no solid pieces; entirely liquid	

FIGURE 27.6 The Bristol Stool Chart is used to assess the characteristics of stools according to seven types, ranging from constipation to diarrhea. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Other symptoms of constipation include changes in bowel pattern, such as alternating between hard, formed stool and liquid stool, as well as hypoactive bowel sounds. The straining with defecation can lead to complications such as a **hemorrhoids** (swollen and inflamed vein in the rectum and anus that can cause discomfort, itching, and bleeding) or an **anal fissure** (a small tear or cut in the lining of the anus, which can cause pain, bleeding, and discomfort during bowel movements). The accumulation of stool in the colon can also lead to distension, gas, and **bloating** (sensation of fullness or swelling in the abdomen), contributing to abdominal discomfort. Chronic constipation may result in **fecal impaction**, where a large mass of hardened stool becomes lodged in the rectum, resulting in a palpable abdominal mass and rectal pressure due to the buildup of stool, making it difficult or impossible to pass stool normally (Cleveland Clinic, 2023a). In severe cases, constipation may result in vomiting due to the backup of stool in the digestive tract.

Psychologically, constipation can lead to feelings of frustration, embarrassment, and anxiety. Individuals may become preoccupied with their bowel habits, leading to decreased quality of life and social isolation. Fear of experiencing pain or discomfort during bowel movements may also result in avoidance behaviors, exacerbating the problem.

Nursing Management

Nursing management of constipation requires a comprehensive approach to address the varied aspects of the condition. Nurses begin by conducting thorough assessments to identify the underlying causes and contributing factors specific to each patient. This involves exploring dietary habits, fluid intake, medication regimens, mobility levels, and any existing medical conditions that may exacerbate constipation.

After performing an assessment, nurses play a crucial role in patient education, sharing knowledge about the significance of fiber-rich diets, adequate hydration, and regular physical activity in promoting bowel regularity. Nurses provide personalized guidance on dietary modifications, emphasizing the importance of incorporating fruits, vegetables, whole grains, and other high-fiber foods into daily meals. Some food sources (e.g., prune juice, prunes, apricots) are helpful in preventing constipation. Certain medications (e.g., opioids, antacids, antidepressants, diuretics) can cause constipation as a side effect. Nurses inform patients about these potential side effects and advise them on strategies to manage or mitigate constipation risk factors while taking these medications.

Nurses facilitate open communication with other healthcare providers to address medication-related concerns or explore alternative treatment options when necessary. In addition to lifestyle modifications, constipation management may involve the use of medications and interventions such as stool softeners, laxatives, suppositories,

enemas, and digital disimpaction.

A medication used to alleviate constipation by adding moisture to the stool, making it softer and easier to pass, is called a **stool softener** (e.g., docusate sodium [Colace]). Stool softeners work by drawing water into the stool, which helps to soften it and increase its bulk. This moisture retention in the stool makes it less dry and hard, reducing the need for straining during bowel movements and decreasing the likelihood of constipation. Stool softeners are particularly useful for individuals who need to avoid straining caused by medical conditions (e.g., hemorrhoids, anal fissures) or after certain surgeries. Unlike laxatives, stool softeners are generally gentler and do not stimulate bowel contractions or increase bowel movements. They are often recommended for long-term use in individuals prone to constipation or those who need to prevent the recurrence of hard stools. However, other methods (e.g., increasing fiber consumption, increasing activity) are typically more effective. Stool softeners are available over the counter or by prescription and come in various forms, including oral capsules, tablets, and liquid formulations.

A commonly used medication to manage constipation by promoting bowel movements is called a **laxative**. They come in various forms and work through different mechanisms to alleviate symptoms. Bulk-forming laxatives containing fiber (e.g., psyllium powder [Metamucil], methylcellulose [Citrucel]) increase the bulk and water content of stool, facilitating its passage. Stimulant laxatives (e.g., Dulcolax, Senokot) stimulate the muscles of the intestines, encouraging bowel contractions and movements. Osmotic laxatives (e.g., polyethylene glycol [MiraLAX], magnesium hydroxide [Milk of Magnesia]) draw water into the intestines, softening stool and increasing bowel movements. Stool softeners help soften stool by enhancing water absorption. While laxatives can provide relief from constipation, they should be used cautiously and under the guidance of a healthcare provider to avoid dependence and potential complications, and they are typically recommended for short-term use rather than as long-term solutions.

A **suppository** is a solid medication inserted into the rectum, where it dissolves to release medication locally. Suppositories may contain laxatives or stool softeners and work by softening stool and stimulating bowel movements. Suppositories offer a targeted approach to managing constipation, bypassing the digestive system and delivering medication directly to the site of action. Like other interventions for constipation, suppositories should be used cautiously and under medical guidance to ensure safe and effective relief. They are typically recommended for short-term use to address acute constipation, with attention to individual needs and potential adverse effects.

An **enema** is another intervention used to manage constipation, involving the introduction of a liquid solution into the rectum to stimulate bowel movements and evacuate stool. Enemas may contain saline solution, mineral oil, or medications, working by softening stool, lubricating the rectum, and prompting bowel contractions. While enemas can provide rapid relief from severe constipation, they should be used judiciously and under medical supervision because of the risk of electrolyte imbalances, rectal irritation, and dependence. Enemas are typically considered for short-term use to address acute constipation, with careful consideration of individual circumstances and potential contraindications.

A medical procedure performed to manually remove impacted stool from the rectum and lower colon using a lubricated, gloved finger is called **digital disimpaction** (Cleveland, 2023c). It is typically used as a last resort when other methods of relieving constipation, such as laxatives, enemas, or stool softeners, have been ineffective. Indications for digital disimpaction include severe fecal impaction that is causing symptoms such as severe abdominal pain, bloating, inability to pass stool, or rectal discomfort. It may also be necessary if there is a risk of bowel obstruction or if the patient is unable to evacuate stool on their own due to physical or neurological impairment.

To perform digital disimpaction, the patient is usually positioned in a side-lying or knee-chest position for easier access to the rectum. The healthcare provider then gently inserts a lubricated, gloved finger into the rectum and manually breaks up the impacted stool, gradually dislodging it and allowing it to be expelled. It is essential to use gentle and slow movements to avoid causing injury or discomfort to the patient. After the procedure, the patient may be instructed to take a warm sitz bath to soothe any discomfort or irritation and to promote relaxation of the pelvic muscles. Depending on the severity of the impaction and the patient's condition, additional treatments or interventions may be necessary to prevent recurrence and manage underlying causes of constipation.

Digital disimpaction should only be performed by trained healthcare professionals in a clinical setting because it carries risks of injury, bleeding, and infection if not performed correctly. It is crucial to follow proper hygiene protocols and use appropriate techniques to ensure patient safety and comfort throughout the procedure. Through

continuous monitoring and evaluation, nurses track the effectiveness of interventions, make adjustments as needed, and offer ongoing support to patients as they work toward optimal bowel health and comfort.

Diarrhea

More than three unformed stools in twenty-four hours is known as **diarrhea**. It occurs when the intestines fail to properly absorb water or when excess fluid is secreted into the intestines, resulting in rapid transit of stool through the digestive tract. Diarrhea can be acute, lasting for a few days to a week, and often is caused by infections, food poisoning, food intolerances, anxiety, or certain medications (e.g., antibiotics, laxatives). Antibiotic therapy also places patients at risk of developing *Clostridium difficile* (*C. diff*) because some antibiotics eliminate the normal GI tract flora. Patients with *C. diff* have very watery, foul-smelling stools. Transmission-based precautions are implemented to prevent the spread of infection. It is essential to use soap and water for hand hygiene, because alcohol-based hand gels are not effective against *C. diff* spores. Chronic diarrhea, lasting for several weeks or longer, may be indicative of underlying health conditions such as IBD, IBS, or malabsorption disorders (Cleveland, 2023b).

Clinical Manifestations

Diarrhea affects bowel elimination by altering the normal pattern and consistency of stool. Clinical manifestations of diarrhea include frequent, loose, and watery stools, often accompanied by urgency and a sense of incomplete evacuation. Individuals may experience abdominal cramping, bloating, and discomfort caused by increased intestinal motility. Hyperactive bowel sounds may be audible as the intestines work to expel stool rapidly. In some cases, individuals may experience bowel urgency, leading to a greater than usual number of stools in a twenty-four-hour period. Dehydration is a common complication of diarrhea, characterized by symptoms such as thirst, dry mouth, dark urine, fatigue, and dizziness. In severe cases, diarrhea can lead to electrolyte imbalances, malnutrition, and weight loss.

Nursing Management

The focus of nursing management and treatment of diarrhea is on addressing the symptoms, restoring fluid and electrolyte balance, and identifying and treating the underlying cause. Nurses closely monitor patients for signs of dehydration and electrolyte imbalances, providing oral rehydration solutions (e.g., sports drinks) or intravenous (IV) fluids as needed to replenish lost fluids and electrolytes. Nurses offer supportive care to alleviate symptoms such as abdominal cramping and discomfort, often through the administration of antispasmodic medications and dietary modifications. Nutrition therapy may involve recommending a bland diet to ease digestive discomfort and avoid exacerbating symptoms. Foods such as bananas, plain rice, applesauce, and toast (BRAT diet) are commonly recommended. Avoiding spicy, greasy, and high-fiber foods may also help.

If diarrhea is caused by a bacterial or parasitic infection, antibiotics or antiparasitic medications may be prescribed to treat the underlying infection. Antidiarrheal medications like loperamide (Imodium) can help reduce stool frequency and improve stool consistency. However, these should be used cautiously and avoided in certain cases, such as when diarrhea is caused by bacterial or parasitic infections. Probiotics and prebiotics, which contain beneficial bacteria, may help restore the balance of gut flora and reduce the duration and severity of diarrhea, especially if it is caused by antibiotics or certain GI conditions. Medications such as antispasmodics or antiemetics may be prescribed to alleviate symptoms such as abdominal cramping or nausea.

In healthcare settings, infection control measures are paramount to prevent the spread of infectious diarrhea, with nurses enforcing strict hand hygiene protocols and isolation precautions as necessary. If diarrhea persists or is recurrent, further evaluation may be needed to determine the underlying cause. This may involve diagnostic tests (e.g., stool cultures. imaging studies) to identify infectious agents, inflammatory conditions, or other GI disorders. In some cases, rectal tubes may be prescribed to collect watery stool. However, strict monitoring is required because of possible damage to the rectal mucosa.

Fecal Incontinence

Also known as bowel incontinence, **fecal incontinence** refers to the inability to control bowel movements, leading to involuntary leakage or passage of feces, gas, or mucus from the rectum. It can vary in severity from occasional leakage to complete loss of bowel control. Fecal incontinence can be caused by a variety of factors, including the following:

- ongoing (chronic) constipation, causing the anus muscles and intestines to stretch and weaken, leading to diarrhea and stool leakage
- fecal impaction with a lump of hard stool that partly blocks the large intestine
- long-term laxative use
- colectomy or bowel surgery
- lack of sensation of the need to have a bowel movement
- gynecological, prostate, or rectal surgery
- injury to the anal muscles in women during childbirth
- nerve or muscle damage from injury, a tumor, or radiation
- severe diarrhea that causes leakage
- severe hemorrhoids or rectal prolapse
- stress of being in an unfamiliar environment
- emotional or mental health issues (MedlinePlus, 2022)

Fecal incontinence can significantly affect an individual's quality of life, causing embarrassment, social isolation, and psychological distress.

Clinical Manifestations

Fecal incontinence manifests through a variety of clinical indications that disrupt normal bowel control and function. Individuals grappling with fecal incontinence often endure episodes of involuntary stool leakage, gas, or mucus discharge from the rectum, causing distress and social discomfort. Accompanying this is a pervasive sense of urgency, where the sudden and uncontrollable need to defecate leads to difficulties reaching a restroom in time, resulting in accidents. These incidents of accidental bowel movements can occur during routine activities, disrupting daily life and eroding confidence. Moreover, prolonged exposure to fecal matter can precipitate skin irritation, inflammation, and susceptibility to infections in the perianal area, exacerbating physical discomfort and complicating care. Beyond the physical toll, fecal incontinence exacts a heavy psychological toll, often fostering feelings of shame, embarrassment, anxiety, and social withdrawal.

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize Hypotheses: Distinguishing Fecal Incontinence from Diarrhea

Mrs. Jenkins, a 72-year-old female, presents to the clinic with complaints of fecal incontinence. Upon assessment, the nurse identifies several cues indicating the presence of this condition. Mrs. Jenkins describes experiencing episodes of involuntary stool leakage, gas, and occasional mucus discharge from the rectum. She expresses significant distress and social discomfort because of these incidents, especially when they occur during routine activities. Additionally, Mrs. Jenkins reports a pervasive sense of urgency, often unable to reach the restroom in time, resulting in accidents.

Analyzing these cues, the nurse prioritizes a hypothesis of fecal incontinence. The presence of involuntary stool leakage, gas, and mucus discharge, along with the urgency and difficulty reaching the restroom in time, align with the clinical indications of fecal incontinence. Furthermore, Mrs. Jenkins's distress and social discomfort, coupled with the potential for skin irritation, inflammation, and susceptibility to infections in the perianal area, underscore the adverse effects of fecal incontinence on her physical well-being.

Moreover, the nurse recognizes the psychological toll of fecal incontinence on Mrs. Jenkins, noting her reported feelings of shame, embarrassment, anxiety, and social withdrawal. These emotional responses further support the hypothesis of fecal incontinence, highlighting the holistic nature of patient care required to address both the physical and psychological aspects of this condition.

Nursing Management

Nursing management of fecal incontinence encompasses a multifaceted approach aimed at addressing both the physical and emotional aspects of the condition. Nurses play a pivotal role in providing supportive care, education, and interventions to help individuals manage fecal incontinence and optimize bowel elimination. This includes conducting thorough assessments to identify underlying causes and contributing factors, such as neurological disorders, pelvic floor dysfunction, or medication side effects.

Based on these assessments, nurses develop individualized care plans that may incorporate dietary modifications, bowel management strategies, pelvic floor exercises, and medications to improve bowel control and stool consistency. Dietary modifications may involve adjustments such as increasing fiber intake to regulate bowel movements and avoiding foods and beverages that can irritate the digestive system (e.g., alcohol, caffeine, dairy products, greasy foods, spicy foods, gluten, artificial sweeteners).

Bowel training strategies help establish a regular bowel routine, enhancing predictability and reducing the risk of accidents. A **bowel retraining** involves teaching the body to have a bowel movement at a certain time of the day. This also includes encouraging the patient to go to the bathroom when feeling the urge to do so and not ignoring it. For some people, it is helpful to schedule this consistent time in the morning when the natural urge occurs after drinking warm fluids or eating breakfast. For other people, especially those with a neurological cause, a laxative may be scheduled every three days to stimulate the urge to have a bowel movement (Medline Plus, 2022).

Pelvic floor exercises (e.g., Kegel exercises) are used to strengthen the muscles of the pelvic floor, improving muscle tone and coordination. Additionally, medications may be prescribed to address underlying causes or manage symptoms, such as antidiarrheal medications to reduce stool frequency or bulking agents to improve stool consistency. In cases where conservative measures are ineffective, advanced treatments such as biofeedback therapy, sacral nerve stimulation, or surgical interventions may be considered to address specific underlying causes or improve bowel control (Medline Plus, 2022).

Additionally, nurses offer guidance on skin care and hygiene practices to prevent skin breakdown and infection in the perianal area. Education is a cornerstone of nursing management, as nurses provide information and support to help individuals understand their condition, manage symptoms, and access appropriate resources. They also play a vital role in addressing the psychosocial effect of fecal incontinence, offering empathy, reassurance, and counseling to alleviate feelings of embarrassment, shame, and isolation.

Summary

27.1 Gastrointestinal Tract Structures and Functions

The GI tract encompasses a series of organs. The mouth is where food is initially broken down through chewing and mixing with saliva. The stomach further digests food using gastric juices and muscular contractions. The small intestine is where nutrients are absorbed into the bloodstream. The large intestine is responsible for water absorption and feces formation. The anus is the external opening through which waste is expelled during defecation. The nervous system, comprising the sympathetic and parasympathetic divisions, regulates bowel function by modulating activities such as peristalsis and sphincter control. The sympathetic division, activated during stress, can inhibit bowel motility and sphincter relaxation, while the parasympathetic division promotes peristalsis and sphincter relaxation, facilitating bowel movements. The GI tract performs vital functions encompassing digestion, absorption of nutrients, and elimination of waste, ensuring optimal health and well-being through coordinated physiological processes.

27.2 Factors Affecting Bowel Elimination

Developmental considerations affecting bowel elimination involve understanding how factors such as aging affect muscle tone, nerve function, and mobility, which can influence bowel movements. For example, infants and older adults may have less control over bowel movements because of underdeveloped or weakened muscles. Individual daily bowel habits affect elimination patterns based on factors such as diet, fluid intake, physical activity, and stress levels. Changes in these habits can affect bowel regularity and consistency, potentially leading to constipation or diarrhea. Medications can affect bowel elimination by altering bowel motility, stool consistency, or fluid balance in the colon. For instance, opioids can slow bowel movements, while some antibiotics may cause diarrhea by disrupting the balance of gut bacteria. Understanding medication effects is crucial for managing bowel function and preventing complications.

27.3 Diagnostic Evaluation

Diagnostic testing for proper bowel functioning encompasses a range of procedures, including the following:

- serum laboratory value analysis to assess electrolyte imbalances
- stool tests to analyze the composition of stool
- breath tests to detect bacterial overgrowth
- genetic testing to identify hereditary conditions
- imaging studies to visualize the structure and function of the bowel and surrounding organs
- endoscopic procedures such as colonoscopy and sigmoidoscopy to visualize the bowel
- laparoscopy for a more direct examination of the abdomen and bowel

Nurses are pivotal in the diagnostic and therapeutic process for functional bowel elimination by conducting thorough nursing assessments, implementing interventions like promoting adequate hydration and fiber intake, providing patient education about procedures and their implications, administering bowel preparation to cleanse the bowel, and closely monitoring patients for complications such as sedation-related adverse effects during and after endoscopic procedures.

27.4 Common Conditions Affecting Bowel Elimination

Constipation disrupts bowel elimination, leading to infrequent, difficult bowel movements, abdominal discomfort, and potential complications such as fecal impaction, which can significantly affect an individual's quality of life. It is managed through lifestyle modifications (e.g., increased fiber intake, improved hydration, increased activity), along with medications (e.g., laxatives, stool softeners) aiming to promote regular bowel movements and alleviate discomfort. Diarrhea accelerates bowel transit time, resulting in frequent, loose stools, urgency, and dehydration, posing risks such as electrolyte imbalances and malnutrition. Treatment for diarrhea involves rehydration to replace lost fluids and electrolytes, dietary adjustments to include bland foods, and if necessary, medications like antidiarrheal medications to reduce stool frequency and improve consistency. Fecal incontinence impairs bowel control, causing involuntary leakage of stool, gas, or mucus, often accompanied by embarrassment, skin irritation, and psychological distress, necessitating comprehensive management strategies for improved quality of life. Treatment includes dietary modifications, pelvic floor exercises, and medications to address underlying causes or

manage symptoms, with advanced interventions such as biofeedback therapy or surgery aiming to improve bowel control and enhance quality of life.

Key Terms

active transport the movement of solutes through a transmembrane protein using energy expenditure
adhesiolysis removal of adhesions
anal fissure a small tear or cut in the lining of the anus, which can cause pain, bleeding, and discomfort during bowel movements
anus opening at the end of the digestive tract through which feces (solid waste) are expelled from the body
ascending colon portion of the colon that travels upward from the cecum on the right side of the abdomen
bile digestive fluid produced by the liver and stored in the gallbladder
bloating sensation of fullness or swelling in the abdomen, often accompanied by gas and discomfort
bowel preparation (bowel prep) a medical procedure that involves the cleansing of the gastrointestinal tract, particularly the colon, in preparation for certain medical procedures or surgeries
bowel retraining teaching the body to have a bowel movement at a certain time of the day
breath test noninvasive diagnostic tool used to assess various aspects of bowel functioning, particularly related to carbohydrate metabolism and bacterial overgrowth in the gastrointestinal tract
Bristol Stool Chart a diagnostic medical tool designed to classify the form of human feces into seven categories
capsule endoscopy imaging study used to evaluate the small intestine for abnormalities such as bleeding, inflammation, or tumors
cardia uppermost part of the stomach closest to the esophagus, where food enters
cecum initial connection point between the small intestine and the colon
chyme semifluid mixture produced in the stomach during digestion, which consists of partially digested food, water, and digestive juices
Cologuard a noninvasive screening test for colorectal cancer
colon consists of several segments: ascending colon, transverse colon, descending colon, and sigmoid colon
colonoscopy imaging study used to examine the colon and rectum for abnormalities such as polyps, inflammation, or tumors
colostomy involves forming a stoma using a section of the colon (large intestine), where a portion of the intestine is brought out through the abdominal wall and connected to the skin
consistency texture of the stool, ranging from hard and formed to soft and loose
constipation a common gastrointestinal condition characterized by infrequent or difficult passage of stool; often defined as less than three bowel movements per week
contrast special dye used for imaging tests
defecation the process of eliminating solid waste, known as feces or stool, from the body through the anus
descending colon portion of the colon that descends along the left side of the abdomen
diarrhea a common gastrointestinal condition characterized by frequent, loose, and watery stools; often defined as more than three unformed stools in twenty-four hours
digital disimpaction a medical procedure performed to remove impacted stool from the rectum and lower colon using a gloved, lubricated finger
duodenum shortest segment of the small intestine; resides just below the stomach, forming a C-shaped curve
endoscopic retrograde cholangiopancreatography (ERCP) imaging study used to assess the bile ducts and pancreatic duct for abnormalities such as stones, strictures, or tumors
enema an intervention used to manage constipation, involving the introduction of a liquid solution into the rectum to stimulate bowel movements and evacuate stool
enterocyte specialized cell that lines the wall of the small intestine and is equipped with microvilli, tiny projections that greatly increase the surface area available for absorption
esophagogastroduodenoscopy (EGD) imaging study used to evaluate the esophagus, stomach, and duodenum for abnormalities such as ulcers, inflammation, or tumors
esophagus a muscular tube behind the trachea and in front of the spine between the pharynx and stomach; peristalsis moves the food down the esophagus, while esophageal sphincters open for food to pass through and then close to prevent regurgitation
facilitated diffusion relies on carrier proteins but does not require energy expenditure and moves nutrients down

their concentration gradient

fecal immunochemical test (FIT) detects occult blood in stool samples with improved sensitivity and specificity compared to FOBT

fecal impaction a large, hardened mass of stool becomes lodged in the rectum or lower colon, making it difficult or impossible to pass stool normally

fecal incontinence (also, bowel incontinence) the inability to control bowel movements, leading to involuntary leakage or passage of feces, gas, or mucus from the rectum

fecal occult blood test (FOBT) detects occult blood in stool samples, indicating gastrointestinal bleeding

feces (also, stools or bowel movements) solid waste products of digestion that are expelled from the body through bowel elimination

flexible sigmoidoscopy imaging study used to evaluate the rectum and sigmoid colon for abnormalities such as polyps, inflammation, or tumors

fundus rounded portion of the stomach that expands as the stomach fills with food

gastrointestinal (GI) system a complex network of organs within the human body responsible for digestion and absorption of nutrients as well as the elimination of waste; encompasses the mouth, pharynx, esophagus, stomach, small intestine, large intestine, anus, and accessory organs

genetic testing evaluates proper bowel functioning by identifying genetic mutations associated with specific gastrointestinal disorders

hematochezia (also, rectal bleeding) bright red blood in the stools; may suggest lower GI tract bleeding

hemorrhoids swollen and inflamed vein in the rectum or anus that can cause discomfort, itching, and bleeding

hydrogen breath test primarily used to detect bacterial overgrowth in the small intestine and assess carbohydrate malabsorption, particularly lactose intolerance

ileostomy involves forming a stoma using a section of the ileum (small intestine), where a portion of the intestine is brought out through the abdominal wall and connected to the skin

ileum the longest part of the small intestine; connects the small intestine to the large intestine

jejunum middle portion of the small intestine that is primarily responsible for the absorption of nutrients, including carbohydrates, proteins, fats, vitamins, and minerals

lactulose breath test specifically designed to diagnose small intestinal bacterial overgrowth by assessing the transit time and bacterial fermentation in the small intestine

laparoscopy a minimally invasive surgical procedure to assess and address various GI conditions that may adversely affect bowel functioning

large intestine is approximately 5 ft (1.5 m) long and consists of the cecum and colon; this vital component of the gastrointestinal tract is responsible for bowel elimination

laxative medication commonly used to manage constipation by promoting bowel movements

meconium the first bowel movement of a newborn that appears sticky and dark green to black in color

melena black, sticky, tarry stools that may suggest upper GI bleeding

methane breath test evaluates bacterial overgrowth and carbohydrate malabsorption, focusing on methane-producing bacteria

moderate sedation (also, conscious sedation) a medical technique used to induce a state of reduced consciousness and relaxation in patients undergoing certain medical procedures or interventions

mouth the orifice at the beginning of the gastrointestinal tract into which food is introduced into the gastrointestinal system; the mouth consists of the lips, tongue, hard and soft palates, gums, teeth, tongue, and salivary glands

opioid-induced constipation (OIC) constipation caused by opioid use

ova and parasite examination detects parasite eggs, larvae, or cysts in stool samples, indicating intestinal parasitic infections

passive diffusion occurs when nutrients move across the intestinal lining from an area of higher concentration to an area of lower concentration without the need for carrier proteins or energy

peristalsis rhythmic, wavelike contraction and relaxation of the intestinal muscles that serves to mix food with gastric juices and propel food, water, and digestive juices forward through the digestive tract

pharynx a funnel-shaped, muscular organ, the walls of which constrict to help push food to the esophagus, lift the walls of the pharynx during swallowing, and prevent air from being swallowed

pyloric sphincter muscular valve located at the lower end of the stomach, near its junction with the small intestine

(specifically, the duodenum); responsible for the release of chyme into the small intestine
pylorus lower portion of the stomach that connects to the small intestine
rectum final straight portion of the large intestine where feces are stored before elimination through the anus
sigmoid colon final S-shaped segment of the colon that leads to the rectum
small intestine a convoluted tube approximately 22 ft (6.7 m) long that stretches from the stomach to the large intestine
stoma an opening surgically created in the body to allow the passage of bodily waste from the body
stomach muscular organ located in the upper abdomen that plays a pivotal role in the digestive process
stomach body central region of the stomach where most of the digestion occurs
stool culture detects pathogenic bacteria, viruses, or parasites responsible for gastrointestinal infections
stool softener medication used to alleviate constipation by adding moisture to the stool, making it softer and easier to pass
substrate a substance or compound that undergoes a chemical reaction or is acted on by an enzyme to produce a specific product
suppository solid medication inserted into the rectum, where it dissolves to release medication locally
transverse colon portion of the colon that runs horizontally across the abdomen, connecting the ascending and descending segments of the large intestine

Assessments

Review Questions

1. What organ is responsible for the initial breakdown of food through mechanical digestion?
    a. stomach
    b. small intestine
    c. mouth
    d. large intestine

2. What type of digestion involves the action of enzymes and acids?
    a. mechanical digestion
    b. chemical digestion
    c. absorptive digestion
    d. peristaltic digestion

3. Where does absorption of nutrients primarily occur in the gastrointestinal tract?
    a. stomach
    b. large intestine
    c. small intestine
    d. colon

4. What division of the nervous system is responsible for the rest-and-digest response?
    a. sympathetic nervous system
    b. parasympathetic nervous system
    c. central nervous system
    d. enteric nervous system

5. What part of the gastrointestinal tract is responsible for releasing chyme into the small intestine?
    a. cardia
    b. fundus
    c. body
    d. pylorus

6. What segment of the small intestine is primarily responsible for absorbing nutrients?
    a. duodenum

b. jejunum
c. ileum
d. cecum

7. When discussing toilet training readiness signs with parents of a 20-month-old infant, the nurse emphasizes that many infants begin to demonstrate awareness of bowel sensations at what age?
a. 6 to 8 months
b. 12 to 18 months
c. 18 to 24 months
d. 24 to 30 months

8. What dietary component adds bulk to stool and promotes regular bowel movements?
a. protein
b. fat
c. fiber
d. sugar

9. What beverage can act as a mild stimulant to the digestive system, promoting bowel movements in some individuals?
a. water
b. coffee
c. fruit juice
d. milk

10. What GI side effect is commonly associated with proton pump inhibitors?
a. constipation
b. diarrhea
c. nausea
d. abdominal discomfort

11. How do tricyclic antidepressants primarily affect bowel function?
a. increasing intestinal transit
b. reducing stomach acid production
c. increasing bowel motility
d. slowing intestinal transit

12. What diagnostic tests will be ordered to assess bacterial overgrowth in the small intestine and carbohydrate malabsorption?
a. liver function tests
b. genetic testing
c. breath tests
d. stool culture

13. What endoscopic procedure is used to evaluate the esophagus, stomach, and duodenum for abnormalities such as ulcers, inflammation, or tumors?
a. colonoscopy
b. esophagogastroduodenoscopy (EGD)
c. flexible sigmoidoscopy
d. capsule endoscopy

14. A newly graduated nurse is reviewing laboratory values with their preceptor. What statement made by the newly graduated nurse would demonstrate a correct interpretation of the laboratory values?
a. “Patients with diarrhea will experience low sodium and high potassium.”

b. "Patients with inflammatory bowel disease will experience high albumin and platelets."
c. "Patients with perforated bowels will experience a high CRP."
d. "Patients with dehydration will experience a high sodium and chloride."

15. A nursing student is reviewing medications used to treat constipation with the nurse. What statement made by the nursing student would warrant further education?
a. "Stool softeners are medications used to alleviate constipation by adding moisture to the stool, making it softer and easier to pass."
b. "Enemas are another intervention used to manage constipation, involving the introduction of a liquid solution into the rectum to stimulate bowel movements and evacuate stool."
c. "Laxatives are medications commonly used to manage constipation by promoting bowel movements."
d. "Suppositories are liquid medications inserted into the rectum, where they dissolve and release medication locally."

16. You are caring for a patient with diarrhea. What food would you recommend the patient eat?
a. broccoli
b. fried rice
c. applesauce
d. beans

17. A 65-year-old patient presents to the clinic with complaints of fecal incontinence. The nurse conducts a comprehensive assessment and identifies muscle weakness in the pelvic floor as a contributing factor. What intervention should the nurse include in the plan of care to address this underlying cause?
a. Encourage the patient to increase fluid intake to prevent dehydration.
b. Teach the patient pelvic floor exercises, such as Kegel exercises, to strengthen muscle tone.
c. Instruct the patient to avoid spicy foods and caffeine to minimize bowel irritation.
d. Administer antidiarrheal medications to reduce stool frequency and urgency.

Check Your Understanding Questions

1. What is chyme?

2. What triggers the urge to have a bowel movement?

3. What effects do stress and emotional well-being have on bowel habits?

4. Describe the purposes of fecal occult blood tests, stool cultures, and ova and parasite examinations in detecting specific conditions or pathogens through stool analysis.

5. Explain the role of nurses in educating patients about the procedures involved in diagnostic and therapeutic testing for functional bowel elimination.

6. Explain how constipation, diarrhea, and fecal incontinence affect bowel elimination.

7. Explain the rationale behind dietary modifications in the management of fecal incontinence.

Reflection Questions

1. Describe the implications of impaired peristalsis on bowel function and patient outcomes.

2. Reflect on the challenges caregivers might face when promoting healthy bowel habits in school-age children.

3. What actions should the nurse take if a patient exhibits signs of respiratory depression or hypotension after undergoing moderate sedation?

4. Consider the importance of individualized care in managing constipation. How can nurses tailor interventions to meet the specific needs and preferences of each patient?

5. Why would antidiarrheals not be recommended for someone with a suspected bacterial infection?

What Should the Nurse Do?

1. During a routine checkup, a 35-year-old patient expresses concerns to the nurse about experiencing frequent bowel symptoms such as diarrhea and abdominal discomfort, particularly during periods of high stress at work. The patient reports feeling overwhelmed and anxious about these symptoms, which are adversely affecting their daily life and productivity. What should the nurse do to support the adult patient experiencing stress-related bowel symptoms?
2. The nurse is preparing a patient for a colonoscopy. The patient expresses anxiety about the procedure. What should the nurse do?
3. The nurse is performing a digital disimpaction when the patient begins to complain of severe abdominal pain. What should the nurse do?

Competency-Based Assessments

1. Develop a ten-minute presentation that outlines the stages of the bowel elimination process.

Sarah, a 32-year-old parent, is concerned about her infant's bowel habits. Her daughter, Emma, is 8 months old and has been experiencing occasional constipation since she started transitioning to solid foods a few months ago, which causes Emma to become upset when she has difficulty passing stool. Sarah questions if she needs to increase Emma's fiber intake. Although Emma is not on any prescription medications, Sarah remembers the iron-fortified formula she switched Emma to recently might be contributing to the constipation.

2. Identify the developmental, individual, and medication factors presented in the scenario.
3. Outline a comprehensive plan for addressing Emma's constipation.
4. Consider potential challenges or barriers to implementing the plan.
5. Discuss the importance of monitoring Emma's progress and scheduling follow-up appointments with her pediatrician to assess the effectiveness of the interventions.

Mr. Smith, a 68-year-old patient, was admitted to the hospital with complaints of severe diarrhea for the past two days. He has a history of irritable bowel syndrome (IBS) and is currently taking medications for hypertension and diabetes. On assessment, the nurse notes that Mr. Smith appears lethargic, with dry mucous membranes and decreased skin turgor. His vital signs reveal a heart rate of 110 bpm, blood pressure of 100/60 mm Hg, respiratory rate of 22 breaths per minute, and temperature of 99.2°F (37.3°C). Laboratory results are as follows: serum sodium (Na+): 130 mEq/L (normal range: 135–145 mEq/L); serum potassium (K+): 3.2 mEq/L (normal range: 3.5–5.0 mEq/L).

6. What are the potential causes of Mr. Smith's electrolyte imbalances based on his clinical presentation and laboratory results?
7. How does diarrhea contribute to the development of electrolyte imbalances such as hyponatremia and hypokalemia?
8. Discuss the relationship between dehydration and altered vital signs, including tachycardia, hypotension, and tachypnea, in patients with gastrointestinal issues like severe diarrhea.
9. What nursing interventions would you prioritize to address Mr. Smith's dehydration and electrolyte imbalances?
10. How might Mr. Smith's underlying conditions, such as irritable bowel syndrome, hypertension, and diabetes, influence his response to treatment for dehydration and diarrhea?

Mrs. Suarez, a 70-year-old female, is admitted to the hospital with complaints of fecal incontinence. During the admission assessment, the nurse listens carefully to the patient's report of symptoms and then observes the following clinical manifestations:

- Mrs. Suarez reports experiencing frequent episodes of involuntary stool leakage, particularly during routine activities such as walking or standing up from a seated position.
- Upon inspection, the nurse notes evidence of stool staining on Mrs. Suarez's undergarments and bedding.
- Mrs. Suarez expresses embarrassment and frustration over her inability to control bowel movements, stating that it has significantly affected her quality of life and social interactions.
- During toileting assistance, the nurse observes urgency and difficulty in controlling bowel movements, with Mrs. Suarez expressing a sense of urgency and discomfort just before accidents occur.

- Physical examination reveals skin irritation and redness in the perianal area, indicating potential skin breakdown caused by prolonged exposure to fecal matter.

Based on this scenario, answer the following questions:

11. Identify the clinical manifestations of fecal incontinence observed in Mrs. Suarez.
12. Discuss potential nursing actions or interventions to address Mrs. Suarez's clinical manifestations.
13. Explore the effect of fecal incontinence on Mrs. Suarez's physical and emotional well-being and discuss strategies for providing holistic care and support.
14. Reflect on the importance of maintaining Mrs. Suarez's dignity and autonomy while providing care and support for her fecal incontinence.

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CHAPTER 28
Sleep and Rest

FIGURE 28.1 There are numerous health benefits for getting adequate rest and sleep. (credit: modification of "How to Fall Asleep in 2 Minutes" by Rick Morris/Flickr, CC BY 2.0)

CHAPTER OUTLINE

28.1 Concepts of Sleep and Rest
28.2 Factors Affecting Sleep and Rest
28.3 Effects of Insufficient Sleep
28.4 Nursing Care to Promote Sleep and Rest

INTRODUCTION Sleep and rest are requirements for life. Both of them can refresh and restore. Although the terms are sometimes used synonymously, they do not reflect exactly the same concepts. Rest tends to be a more temporary construct, associated with a break from stress and exertion. Relaxation is commonly correlated to rest; indeed, the phrase "rest and relaxation," or R & R, is a frequently used colloquialism. Although sleep incorporates rest, rest does not necessarily involve sleep. Sleep involves complicated neurophysiological processes that influence growth and development of the entire body, including the brain. The sleep state reduces consciousness and related neurological activity, with accompanying decline in body functions, including cardiopulmonary responses and metabolism. During nonsleeping rest, a person reduces metabolic demands, but remains alert, with muscle tone and potential for immediate responses intact.

Significant physiologic changes occur at different stages of the sleep cycle. Such changes include fluctuations of heart and respiratory rates, temperature, brain activity, and oxygen demands. Even muscular movement varies by sleep stages, notably during the rapid eye movement (REM) stage. Effects of sleep, and of sleep deprivation, can be apparent in resultant physiological changes, behaviors, and actions. Medical conditions, including kidney disease, cardiovascular problems, and a decline in immune function, are all possible repercussions of insufficient sleep. Inadequate sleep can also result in various psychological disorders and behavioral changes.

28.1 Concepts of Sleep and Rest

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the physiology of sleep
- Identify the stages of sleep
- Describe the sleep patterns and needs throughout the life span

Sleep is a necessary part of life with potentially significant, and even dangerous, repercussions when individuals do not receive adequate amounts and quality. The physiological processes involved in and during sleep are not simple. To an observer, however, sleep appears to be a simple enough set of actions:

- fatigue and sleepiness
- falling asleep
- maintaining sleep
- cycling through stages of sleep
- waking rejuvenated and ready for the waking, active hours

This section explores the physiology involved in sleep, starting with the contributions of the **reticular activating system (RAS)—**a group of neurons that control sleep and wakefulness, arousal, and consciousness—and the **circadian rhythms**, or the biological rhythm associated with metabolism, temperature, sleep, and wakefulness. As nurses, it is important to understand the important role sleep plays in people's lives, including contributions to health, illness, and daily function. This section will examine the physiology and stages of sleep and then delve into sleep patterns and the changing sleep needs throughout the life span.

Physiology of Sleep

Sleep, like respiration, is a basic physiological function, under neurological control and originating in the brain stem. There are a variety of processes that occur while sleeping, including storing and cataloguing new information, and changing short-term memories into long-term memories (Nunez & Lamoreux, 2023). The **glymphatic system** is involved in regulation of interstitial fluid movement and subsequent removal of waste from the brain and cerebrospinal fluid (CSF) and is directed by sleep and circadian cycles (Hablitz & Nedergaard, 2021; Nunez & Lamoreux, 2023). Potassium and lactic acid are two of the waste products removed by processes of the glymphatic system. A peptide implicated in development of Alzheimer disease called **beta amyloid**, and **tau**, a protein also associated with Alzheimer disease development, are other wastes eliminated by the glymphatic system (Hablitz & Nedergaard, 2021). Certain areas of the brain, such as the amygdala and hippocampus related to emotional regulation, are more active during sleep (Nunez & Lamoreux, 2023).

The body requires an adequate amount of sleep. Adequacy of sleep changes over the human life span, ranging from sixteen to eighteen hours per day for newborns, to seven to nine hours of the day for adults (see more about developmental stages and sleep later in a later section of the chapter). Achieving enough sleep for one's stage of development and age allows people to grow, function, and thrive throughout life. Cognitive actions, such as learning, problem-solving, concentration, and creativity, are performed best when the body and brain have had adequate sleep. Sleep deprivation inhibits positive adaptations by the brain to stress, resulting in less effective coping responses and negative reactions while awake. Examples of such maladaptive responses include eating disorders, and use of caffeine, alcohol, and other substances. Proper organ function relies on adequate sleep as do healthy immune systems, use of insulin, effective cognition, and cardiac function.

Sleep involves coordination of the properties of homeostasis and circadian rhythm. A person tends to associate feelings of fatigue and drowsiness with a need for sleep, which is the homeostatic mechanisms at work. The circadian rhythm includes the body's natural responses to light and dark, which normally involve being awake and alert during hours of light, and feeling tired, sleepy, and subsequently sleeping, during periods of darkness. Melatonin is a modulator involved in circadian rhythm changes, with increasing levels during darkness, and decreasing levels during hours of light.

During hours of sleep, consciousness remains active, but is generally reduced, with a change in responsiveness. When a person is awake, they are acutely aware of external stimuli; while asleep, consciousness is predominantly responsive to internal rather than external stimuli (Brinkman et al., 2023). As a person experiences sleepiness, if

there is a safe environment for sleep, the hypothalamus initiates actions to inhibit areas of the brain involved in arousal. As the person reaches the sleep state, the regions of the brain stem, thalamus, and cortex operationally disengage (Brinkman et al., 2023). An **electroencephalogram (EEG)**, a linear tracing of the electricity of brain waves, is able to identify the different periods or stages of sleep. In brief, the first period is **non-rapid eye movement (NREM)** sleep, and is comprised of three stages of sleep itself (Figure 28.2). The EEG waveforms change during the different stages. As one falls asleep (stage I sleep), a fast **alpha wave** is typical while awake and resting, but is followed by a **theta wave**, which is also fast, with variable frequencies (Patel et al., 2024). In stage II, two characteristic EEG changes are apparent: a short, intermittent burst of neurological activity called **sleep spindle** and **K-complex**, each of which lasts about one second and is associated with the **delta wave**, which is slower but have more amplitude. In stage III of NREM sleep, the EEG displays slow delta waves; this stage is also referred to as **slow-wave sleep (SWS)** (Patel et al., 2024).

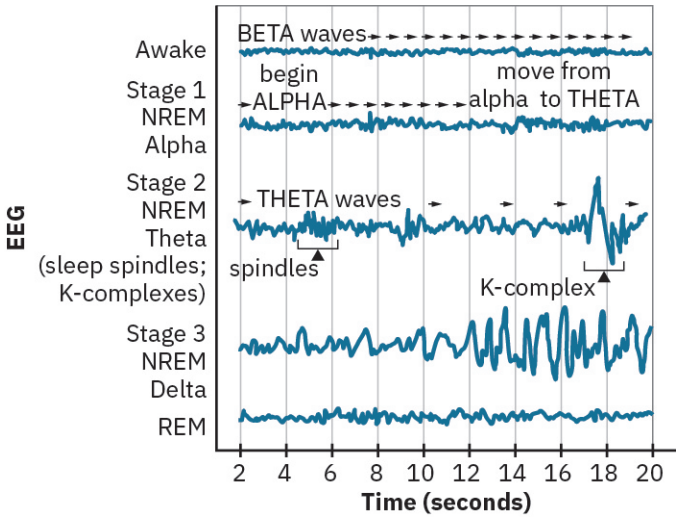

FIGURE 28.2 During different stages of sleep, brain waves change, as seen on an EEG. (modification of work from Psychology 2e. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The other sleep stage is **rapid eye movement (REM)** sleep, which is associated with fast movements of both eyes. REM is generated by activation of "REM-on neurons" that stimulate responses from both the parasympathetic and sympathetic nervous systems (Brinkman et al., 2023). This increased brain activity is apparent on the EEG, as the waveform during REM sleep appears much like that of someone who is awake (Patel et al., 2024).

Reticular Activating System

Located in the anterior of the brain stem, the reticular activating system (RAS) is integral in some of the most basic functions, including consciousness, sensory perceptions and responses, ability to focus, and the sleep-wake cycle. Specifically, the RAS adjusts fast and slow sleep rhythms, which assist with coordination of wakefulness and sleep (Arguinchona & Tadi, 2023). Additionally, the RAS moderates muscle tone during different stages of sleep, most particularly contributing to the lack of muscle tone apparent during REM sleep, which prevents movement of the extremities during dreams.

The RAS is also involved in responses to pain and some mental health and neurological disorders, such as schizophrenia, Parkinson disease, post-traumatic stress disorder (PTSD), and **narcolepsy**, a sleep disorder involving sleep and wakefulness with abnormal episodes of daytime sleep (see Central Disorders of Hypersomnolence).

LINK TO LEARNING

Watch this RAS video (https://openstax.org/r/77RAS) for more information about the RAS.

Circadian Rhythms

Wakefulness, metabolism, temperature, and the timing of sleepiness and subsequent sleep, are part of circadian rhythms. Such rhythms likely originated historically from humans as hunters and gatherers (Casiraghi et al., 2021).

These early peoples, by necessity, would use the improved visibility during daylight hours for most hunting, searching for other food sources, and other activities. Their own safety was also of paramount importance, and therefore it was also valuable to be able to see potential dangers.

The control of circadian rhythms initiate within the hypothalamus, where there are centers for sleep and wakefulness. These are set to respond to light and darkness through messages from the retinas. The results include feeling sleepy, physiologically welcoming the onset of sleep two or three hours after dark, and naturally awakening shortly before, or at sunrise (Figure 28.3).

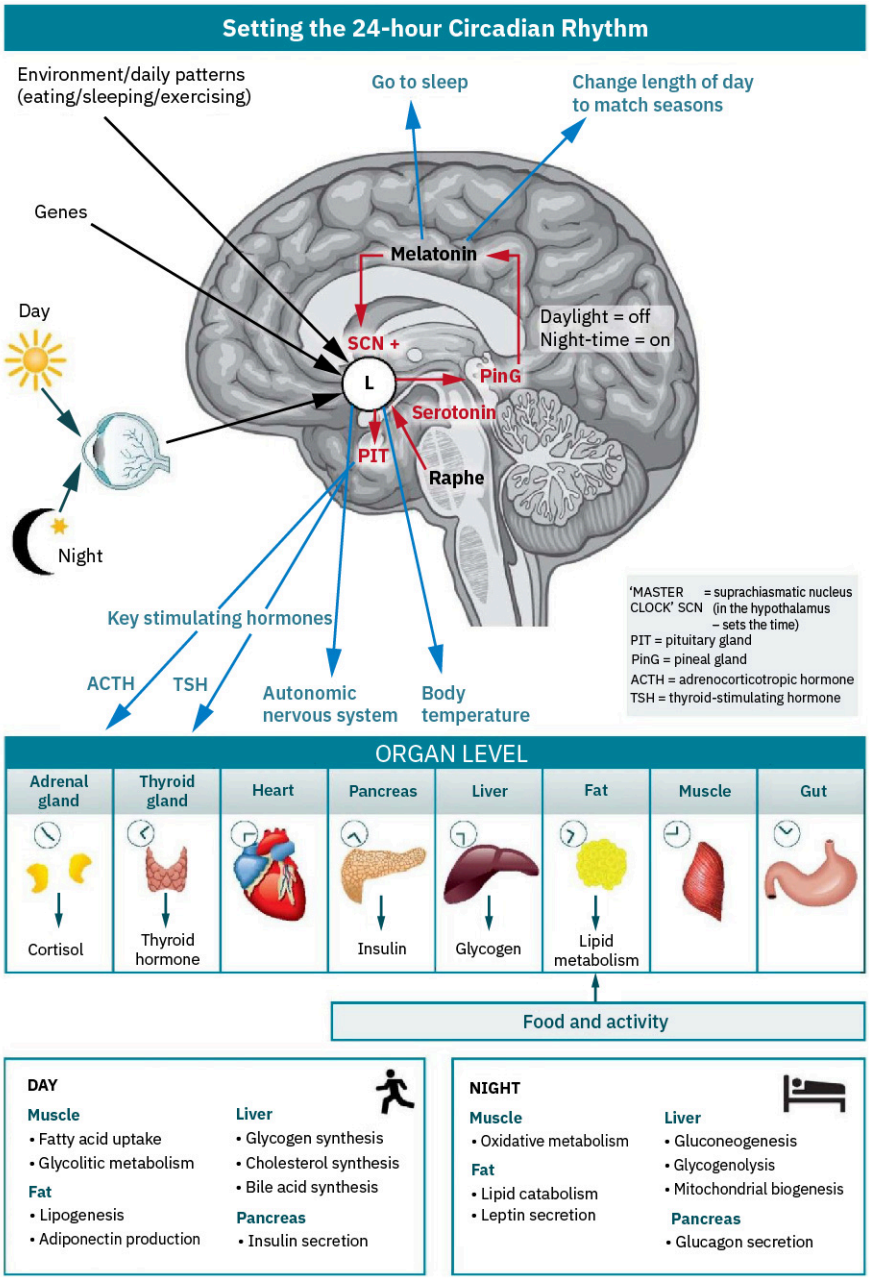

FIGURE 28.3 The circadian rhythm includes the influences of light and dark on organ systems during related periods of day and night. (modification of "The master circadian clock in the human brain" by Ian B Hickie, Sharon L Naismith, Rébecca Robillard, Elizabeth M Scott, and Daniel F Hermens/Wikimedia Commons, CC BY 3.0)

Chemical contributions to sleep are regulated by the circadian rhythm and include the nighttime secretion of melatonin, which assists in promoting sleep by opening the "sleep gate" (Viganò et al., 2023), promoting NREM sleep and improving the continuity of REM sleep. The release of prolactin, adrenocorticotropic hormone (ACTH), and norepinephrine are also under circadian influence (Patel et al., 2024). The neurotransmitter adenosine is associated

with a person's feeling the need for sleep (Bryan, 2023). Additionally, adenosine is thought to promote deep slow-wave sleep and its restorative properties (Bryan, 2023). This chemical is metabolized during sleep, so low levels are apparent in the morning. Cortisol is another chemical involved in circadian rhythm, as its early-morning release prepares the body to awaken.

REAL RN STORIES

Shift Work and Circadian Rhythm

Nurse: Peggy, RN
Clinical setting: ICU
Years in practice: 10
Facility location: Suburban community hospital in Colorado

I worked steady night shift for ten years. It's kind of odd: I tend to naturally be more of a morning person, but I never had trouble staying awake at work, probably because it was always so busy! I also had no problem sleeping during the day when I worked nights, although I never figured out how to sleep well on my days off. I tried all different options, and finally just decided to go to sleep whatever felt right each day and not to try to create a particular habit. So most times, I would sleep about four hours, then get up and do a few things, take a nap about 2:00 p.m. for an hour or so. When I woke up, I'd run errands or do stuff around the house, fix supper, and go to bed at about 9:00 p.m. (Sometimes when I was very tired, I'd sleep through the day, and I'd still go to bed about 9:00 p.m.) Even now, I still wake up between 1:00 and 3:00 a.m. for two or three hours. In the ICU, that time was usually pretty busy, even if our patients were stable. That's when we'd do their baths, change central line dressings and other "housekeeping" tasks. Being busy during that time kept me awake, and brought me to the time for lab draws, x-ray coming for morning images, and prepping for shift change. Now though, some years later, I suppose ten years of shiftwork has had an impact on my circadian rhythm.

Stages of Sleep

Sleep occurs in a series of four stages, briefly introduced earlier, which accord with associated EEG waves. These sleep stages happen throughout the sleep session (typically overnight) in a cyclical pattern, with a person spending about 75 percent of sleep time in NREM stages I through III, and 25 percent in stage IV REM sleep (Suni, 2023). Each cycle encompasses approximately 90 to 110 minutes, and it is normal to experience four or five cycles during a night's sleep.

Stage I

Stage I (N1) is the first stage of sleep onset; this stage normally happens quickly—on average taking no more than seven minutes of body and brain relaxation to fall asleep (Patel et al., 2024; Suni, 2023). Only about five percent of total sleep time is spent in stage I (Patel et al., 2024). As the individual relaxes, physiological activities, including those in the brain, become slower. This is often noted by a reduced heart rate, slow and regular respirations, and slow, rolling eye movements (Lockett, 2023). There may be occasional muscular movements seen, because skeletal muscle tone remains present during this phase (Suni, 2023). It is during this stage that EEG waves change from the beta waves associated with being awake to alpha waves of a relaxed but awake state, to theta waves of light sleep (Patel et al., 2024). If not disturbed during stage I, a person usually proceeds promptly to stage II and may not return to this stage for any significant amount of time. It is easy to awaken someone from stage I sleep.

Stage II

Stage II (N2) sleep involves more changes, as sleep becomes deeper, with heart rate, respiratory rate and temperature all continuing to decrease. Eye movement that slowed during stage I stops and people may grind teeth, with brief episodes of brain activity that offer resistance to wakening (Suni, 2023). Such bursts of activity within the brain are presumed to be involved in the solidification of memories (Patel et al., 2024). It is during this cycle that delta waves begin, with sleep spindles and K-complexes, on the EEG. The first stage II cycle lasts between ten and twenty-five minutes, and each following cycle becomes longer, until a total of about 45 percent of sleep time is spent in this stage (Patel et al., 2024; Suni, 2023).

Stage III

Brain waves slow considerably during stage III (N3), so this stage is referred to as slow-wave sleep (SWS) (Patel et al., 2024; Suni, 2023). While brain waves slow, metabolic, immune, and restorative actions occur. These include production of growth hormones, regulation of immune function, and repair of muscle tissue (Patel et al., 2024; Lockett, 2023; Suni, 2023). In addition, the depth of sleep during stage III is implicated as contributing to creativity, memory, and higher-level thinking (Suni, 2023). Stage III involves further decrease of temperature, heart and respiratory rates, and relaxation to the point of loss of skeletal muscle tone. This stage of sleep is when the deepest sleep occurs, and it is hard to be awakened, even by loud noise. If awakened during this stage, it is typical for the person to experience **sleep inertia**, or slowed processing of thoughts (Patel et al., 2024). Urinating while asleep (**enuresis)** and sleepwalking (**somnambulism**) happen during stage III sleep (Patel et al., 2024). Individuals can dream in this phase, with dreams typically being realistic in nature. Stage III predominantly occurs within the first half of a night's sleep, with these early cycles lasting twenty to forty minutes each and getting shorter throughout the night as more REM sleep begins (Suni, 2023). Approximately 25 percent of sleep is spent in stage III.

Stage IV Rapid Eye Movement (REM) Sleep

REM sleep is considered stage IV of the sleep cycle. REM sleep, as the name indicates, is characterized by rapid movements of the eyes. Additionally, during this stage, metabolism increases, as noted by increases and changes in respiratory patterns and cardiac rhythms (Nunez & Lamoreux, 2023). Brain activity also increases during REM. Memory storage, integration of learned concepts, and creativity are associated with REM sleep (Nunez & Lamoreux, 2023; Suni, 2023). A lack of REM sleep can lead to psychophysiological symptoms and diagnoses related to sleep deprivation in general, which will be explored later in the chapter. Because REM sleep is associated with actions such as memory consolidation, particularly those memories related to skill acquisition, and problem-solving (Peters, 2023), a lack of REM sleep can have negative impacts on processing thoughts and emotions, and in making connections. These effects can manifest in a variety of ways, including depression, anxiety, a lack of clarity in thinking, or decreased higher-level cognition (Peters, 2023).

People lose skeletal muscle tone (except the diaphragm and muscles of the eyes), eliminating movement during REM sleep (Brinkman et al., 2023; Lockett, 2023; Patel et al., 2024). Dreams are common and tend to be very clear, emotional, and unbelievable. Nightmares also may occur during this phase, as well as sexual stimulation in the form of penile erections and clitoral dilation (Patel et al., 2024).

LINK TO LEARNING

This video shows the rapid movement of the eyes (https://openstax.org/r/77RapidEyeMvmt) and a summary of typical events associated with REM sleep.

REM sleep increases during the second half of the night, as stage III sleep decreases, increasing from a ten-minute first cycle, to a final REM stage of sixty minutes (Suni, 2023). Approximately 25 percent of sleep is spent in REM, and it is common to awaken in the morning in the midst of REM sleep (Table 28.1).

Sleep Stage	Type of Sleep	Length of Stage (minutes)	Sleep Time (percent)
Stage I/N1	NREM	1–7	5
Stage II/N2	NREM	10–25	45
Stage III/N3	NREM	20–40	25
Stage IV/REM	REM	10–60	25

TABLE 28.1 **Sleep Stages** (Source: Patel et al., 2024)

LINK TO LEARNING

For a summary of what is happening during a night's sleep (https://openstax.org/r/77SleepEvents) watch this video. You will need to scroll down about halfway.

Sleep Patterns and Needs

A period of sleep is typically overnight, and sleep occurs in the stages described in cyclical fashion. Such sleep cycles repeat until natural awakening, which frequently correlates with morning light, or until wakened by an alarm or other interruption. In many societies, this **monophasic sleep pattern** is most common, with one major block of time allocated for sleep.

In some regions of the world, a **biphasic sleep pattern** may be the norm, with two sleep sessions per day, including a sleep period of several hours overnight, and another, shorter sleep in the later morning or afternoon. Another is the **polyphasic sleep pattern**, which is normal for infants and young children, who sleep several times in a twenty-four-hour period. Until a neonate's sleep pattern normalizes to days and nights, even the overnight sleep cycles are not particularly long. Sleep patterns continue to change throughout the life span, with developmental influences influencing amounts and times of sleep from infancy through older adulthood.

Sleep Cycle

A full sleep cycle is comprised of three NREM stages and one REM stage. For most adults, the first cycle encompasses approximately 70 to 100 minutes, and subsequent cycles involve 90 to 100 minutes (Brinkman et al., 2023; Suni, 2023). Adults typically experience four to six cycles of sleep nightly, or during the major session of sleep. The most restorative sleep occurs during the N3 stage, and most of this sleep stage occurs in the first few hours of sleep, with REM increasing in the latter cycles of sleep.

PATIENT CONVERSATIONS

What's Going on While I Sleep?

Scenario: A patient is being interviewed prior to seeing the primary care physician for problems sleeping. The patient has dark circles under the eyes and is yawning frequently.

Nurse: Mr. Richardson, I'm Christy, and I understand you're having trouble sleeping. Can you tell me more about this?

Patient: Of course. Gosh, it's been about a month now. It seems every night it takes longer for me to fall asleep. Then, I wake up at the lightest noises. But then, it's almost funny—my wife says sometimes I'm so hard to wake up!

Nurse: I'm sorry this is happening—it can be so frustrating to not sleep well. Let me tell you a little about what happens when you're asleep.

Patient: How much can happen? I'm asleep, after all!

Nurse: That's just it, Mr. Richardson. You'd be surprised how much happens while you're asleep. So, sleep includes four stages, and they work in a pretty predictable cycle. Normally, it only takes a few minutes to fall asleep—no more than seven to ten minutes.

Patient: It's taking me a half hour most nights now.

Nurse: We'll talk about some possible reasons for that shortly, and maybe I can help with some ideas. So, that first stage is N1 sleep, and the next is N2, and during this time your body slows things down. Your eyes stop moving, your body cools down, your heart and breathing slow down. Your brain is working on things that happened during the day, and starts to build memories. This is when you're waking up easily, though, which can be very bothersome.

Patient: Very! And then I have to fall asleep again.

Nurse: The other thing happening at that time, before you woke up, is your body was getting ready for N3, the next stage, when you sleep really soundly. But it has to start over to get you there, because first you have to fall asleep. N3 is when your wife struggles to wake you up.

Patient: She says I sleep like a rock!

Nurse: During N3 sleep, you're sleeping very deeply, and your body slows down even more, but your mind is still busy removing toxins and fixing things.

Patient: That's fascinating. Who knew so much was going on?

Nurse: Your brain is a busy place while you're sleeping. And in the next stage, your body gets busy again. REM stands for "rapid eye movement." When you're in REM sleep, as you can imagine from the name, your eyes are moving quickly, and your brain is busy again, like it is during the day. You breathe faster again, and your heart speeds back up. And this is when your dreams often include actions that don't make sense, like flying or breathing underwater.

Patient: Sometimes when I wake up, those are the wild dreams I wake up from!

Nurse: It's quite possible. The dreams you might have during N3, you often don't remember, and you rarely wake up during them, and you sleep in N3 a lot in the first part of the night. Then you go into REM more for the rest of the night. And, it's easier to wake up in REM, and since it occurs more as you get close to waking up, that's often the stage you're sleeping in when you wake up.

Patient: I had no idea so much was going on overnight, especially in my mind!

Scenario follow-up: The nurse proceeds with further inquiry as to the patient's sleep history, and offers sleep hygiene ideas that may help with falling asleep. Christy also explains she will see the patient after the physician visit to provide further education and assistance.

Sleep patterns are also referred to as **sleep architecture**. A sleep study, or **polysomnography**, involves results of assorted physiologic monitors, including EEG, electrocardiogram (ECG), electrooculogram (EOG), electromyogram (EMG), and oxygen saturation (SaO_2). The individual's sleep architecture is displayed as a graph, called a **hypnogram** (Figure 28.4).

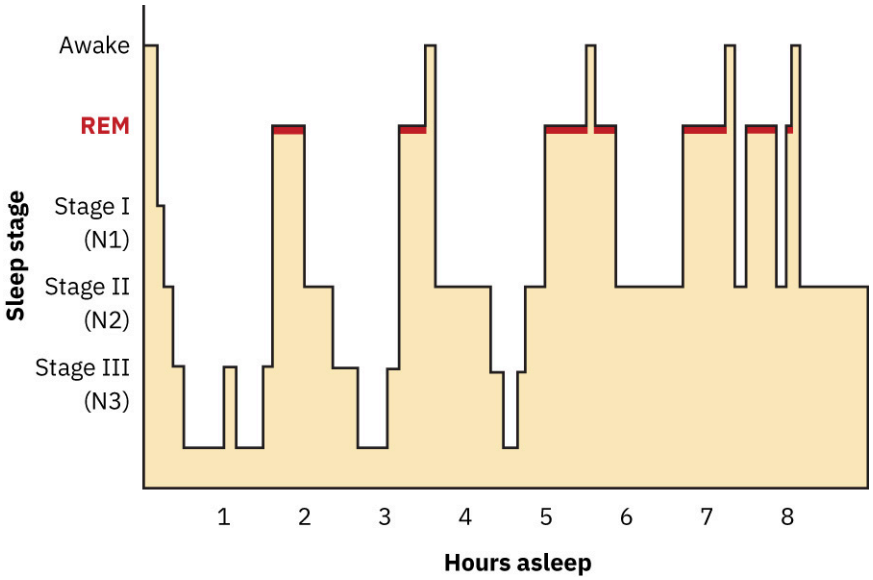

FIGURE 28.4 A hypnogram is a diagram of the stages of sleep as they occur during a period of sleep. This hypnogram illustrates how an individual moves through the currently recognized stages of sleep. (modification of work from *Psychology 2e*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The first sleep cycle of the night, if undisturbed, includes all three NREM stages, including a repeat of N2, followed by REM, with continued cycles through the stages in this manner: N1—N2—N3—N2—REM (Cherry, 2023). Unless wakened, N1 is not repeated. Healthy transitions between the stages of sleep happen more often if an individual has

good **sleep hygiene**, or healthy sleep habits. Factors affecting sleep hygiene include

- maintaining regular sleep and wake times,
- providing an environment conducive to sleep (e.g., dark, quiet, cool room),
- allowing enough time for adequate sleep,
- reducing substance use (e.g., alcohol, caffeine, and nicotine), and
- addressing sleep-related disorders (e.g., sleep apnea, restless leg syndrome (Suni, 2023).

Developmental Patterns

During growth and development phases, sleep patterns change (Table 28.2). This includes quality of sleep, time preference, sleep stages, and sleep patterns, with resulting adjustments to sleep architecture. With advancing age, from infancy to older adults, the need for sleep tends to lessen to some extent, from the majority of a twenty-four-hour period to about eight hours.

Gender also has some general differences, with men in stage I sleep and waking more times overnight than women. Women tend to take longer entering sleep, and spend longer in SWS. Pregnancy and the postpartum period bring their own challenges, with more sleepiness during the day and struggles to find comfortable positions in advanced stages of pregnancy.

Infancy (0–12 months)	Neonate	• Circadian rhythms not developed • Irregular sleep patterns, especially in first weeks • Sleep sixteen to eighteen hours/day in divided (2.5- to 4-hour) episodes • Three sleep types: ◦ active sleep—similar to NREM ◦ quiet sleep—similar to REM ◦ indeterminate sleep • Onset of sleep through quiet sleep/REM • Only one to two sleep cycles per episode
	Infant	• By approximately 2–3 months: ◦ circadian rhythms develop ◦ duration of sleep at night increases • At approximately 3 months: ◦ melatonin and cortisol release starts ◦ onset of sleep through NREM • At approximately 6 months: ◦ sleep duration approximately six hours per episode; fourteen to fifteen hours per day • At approximately 12 months: ◦ sleep twelve to fifteen hours per day with only two stages during daytime
Childhood (1–9 years)	Toddler (1–3 years)	• At approximately 2–5 years: ◦ sleep need decreases by approximately two hours, from thirteen to eleven hours • At approximately 6 years: ◦ development of sleep phase preferences and tendencies: “night owl” or “early bird” ◦ begin shorter REM with more time in N3
	Child (3–9 years)	

TABLE 28.2 Developmental Stages and Sleep Patterns (Sources: Johnson, 2024; Nunez & Lamoreux, 2023; Patel et al., 2024.)

Adolescence	10–18 years	• Require nine to ten hours of sleep • Hormone changes lead to less N3/SWS and more N2 • Increased sleepiness during day • Typical preference for staying up later and sleeping later in morning
Adulthood (18+)	Young/middle age adult (18–65)	• Require seven to nine hours of sleep • Earlier sleep time (bedtime) • Less consolidated sleep (more frequent awakenings)
	Older adult (65+)	• Require seven to eight hours of sleep • Pattern changes to waken approximately 1.5 hours earlier (than young adult) and bedtime approximately one hour earlier than when in 20s and 30s

TABLE 28.2 Developmental Stages and Sleep Patterns (Sources: Johnson, 2024; Nunez & Lamoreux, 2023; Patel et al., 2024.)

28.2 Factors Affecting Sleep and Rest

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze physiological considerations that affect sleep and rest
- Understand lifestyles and habits that affect sleep and rest
- Recognize common sleep disorders

The quantity and quality of sleep varies according to different factors. Physiological considerations include developmental patterns and changes as well as the impacts on sleep that can be attributed to illness or medications. Medications, whether to prevent illness and maintain health, or to treat a particular disorder or disease, are often accompanied by side effects and can affect sleep. Culture and lifestyle choices or habits also influence sleep quality and quantity. Stress can be a major contributor to changes in sleep hygiene, amount and quality of sleep, illness, and use of substances to assist with coping.

Sleep disorders also affect sleep quality and quantity. Aside from insomnia, disorders that affect breathing and those involving excessive movements lead to a lack of sleep. Additionally, this section will consider issues that result in more sleep than normal.

Physiological Considerations Affecting Sleep

There are various physiological considerations when it comes to sleep. This section explores influences on sleep, including developmental sources, illness, medications, and culture.

Development Stage

Sleep patterns change at different times in a life span. Neonates for example, fall directly into REM sleep, and sleep in rather short episodes for up to eighteen hours a day (Figure 28.5) (Johnson, 2024). As growth and developmental stages continue through childhood, adolescence, and adulthood, more outside influences such as the demands of school, hormonal changes and growth spurts, and employment expectations affect sleep. Quality may be influenced by stress, worry, or poor health; quantity may be affected by the addition of a baby to the family, personal or family obligations, or the need to get up early or stay up late for work.

FIGURE 28.5 A baby falls directly into REM sleep, and may sleep up to eighteen hours a day. (credit: "Safe Infant Sleep for SIDS Awareness Month" by NIH Image Gallery/Flickr, Public Domain)

Another developmental consideration is pregnancy, during which physical changes may include gastrointestinal discomfort (e.g., heartburn or reflux), causing wakefulness and the need for position changes. Fetal growth can lead to more frequent urination, difficulty finding a comfortable sleep position, and shortness of breath for the childbearing person.

Some of these developmental effects on sleep, such as hormonal changes with adolescence, excessive fatigue during a growth spurt, or poor sleep while pregnant are temporary. Other effects may become longstanding, as natural aging processes affect sleep over time, or when poor sleep perpetuates further sleep problems and chronic issues develop (Nunez and Lamoreux, 2023).

Illness

Chronic illness or episodes of acute illness are frequent contributors to disruptions of normal sleep patterns. They can also create new sleep patterns as an adaptive mechanism (Table 28.3). Some of these circumstances increase sleep, such as when the immune system is combatting an infection or recovering from a surgery or trauma. Other circumstances involve less sleep, or poor-quality sleep, which does not achieve the rejuvenation and restful state normally associated with sleep. If a person is unable to spend adequate time in stage III's SWS, and/or does not reach REM, the sleep is not as restorative.

Disorder	More Sleep	Less Sleep	Notes
Bipolar disorder	X	X	Changes in sleep pattern often occurs prior to cycling of manic or depressive episode (especially mania). Depression is associated with an increase or decrease of sleep; mania is associated with decreased sleep.
Chronic obstructive pulmonary disease (COPD)		X	Especially in advanced stages, COPD affects sleep position; it may cause air hunger and frequent awakenings.

TABLE 28.3 Disorders and Sleep Patterns

Disorder	More Sleep	Less Sleep	Notes
Depression	X	X	Depression is commonly accompanied by sleep disorder, with either more or less sleep.
Diabetes mellitus (DM)		X	Episodes of poor control (hyperglycemia) are characterized by polyuria, polydipsia, and polyphagia, which can all disrupt sleep patterns.
Heart failure (HF)		X	Similar to COPD, in advanced stages, HF affects sleep position, and it may cause air hunger and frequent awakenings. Treatment may cause frequent urination.
Infection	X	X	Infection and related symptoms (e.g., fever, pain, mental status change) may increase or decrease sleep. Sleep may be disrupted and of poor quality.
Narcolepsy	X		Narcolepsy is associated with unexpected and sudden sleep episodes during the day. Sleep quality is not necessarily restful or restorative.
Pain		X	Pain often causes sleep disruptions and an inability to sleep deeply. Treatment may cause drowsiness, but sleep quality may still be hindered.
Restless leg syndrome (RLS)		X	RLS tends to hinder falling asleep, but can also waken a person from sleep.
Sleep apnea		X	Episodes of apnea cause frequent awakenings, and inhibit achieving deep levels of sleep (N3 or REM); restorative rest is reduced.

TABLE 28.3 Disorders and Sleep Patterns

Medications

There are some medications designed to assist with sleep and others designed to maintain alertness and stay awake. Medications for sleep work with the central nervous system (CNS) in some capacity, to improve entry to sleep, to help maintain sleep, or both. There are some over-the-counter (OTC) natural remedies available as well, and for some people they work as well as medications approved by the Federal Drug Administration (FDA). Nurses should engage patients in a discussion about use of such easily available choices, as combination of natural supplements or OTC medications with other sleep aids, or other medications of any sort, should be approved by the healthcare prescriber (physician, nurse practitioner, or physician's assistant). An introduction to some of the sleep-related medications follows.

Examples of natural sleep aids include melatonin, valerian, and kava kava. Although easily available, they have many of the same potential side and adverse effects as OTC and prescription sleep medications. An example of a commonly used OTC is diphenhydramine (e.g., Benadryl), which is a first-generation antihistamine, but is used for its sedating side effect. It is generally considered safe for patients over 12 years old, and tends to work well as a sleep aid, particularly for inducing sleep. If enough time for sleep is not provided, some people find themselves drowsy when they need to wake and start the day. Major CNS side effects are not common. Some of the common side or adverse effects of diphenhydramine include the following:

- Drug hangover: This includes difficulty waking the morning after taking the medication; may include slower reactions and residual sleepiness.
- Respiratory depression: This is typically dose-related, with higher doses, or if combined with certain other drugs (e.g., opioids), potentially affecting the respiratory center.
- REM rebound: This may manifest as nightmares or other brain activities associated with REM sleep.

LIFE-STAGE CONTEXT

Babies, Children, and Diphenhydramine

The risk for CNS effects with diphenhydramine is particularly apparent in infants and young children, as well as older adults. Hallucinations, seizures, and death are possible, especially with excessive dosing. It is not advised to use diphenhydramine as a sleep aid for children, and although it commonly causes drowsiness in adults, it may paradoxically cause excitation in children. It is not recommended to use diphenhydramine for children under 2 years old for any reason, and only on the advice of a healthcare prescriber for children between 2 and 5 years old for use to treat allergic reactions (Drugs.com, 2022).

Benzodiazepines, also known as **anxiolytic** drugs, are drugs commonly prescribed to reduce anxiety; some are prescribed as sleep aids. Insomnia is sometimes associated with anxiety, which can make the choice of this class of drug ideal in certain circumstances. Because of the possibility for more significant side effects, especially if they have been used for a long period and are suddenly discontinued, most benzodiazepines (e.g., diazepam, lorazepam, midazolam) are not used as often as in years past for treatment of insomnia. When they are prescribed, they tend to be for a limited duration. An exception, though still not recommended for long-term use, is temazepam, which is perhaps the benzodiazepine most used as a sleep aid and marketed with an associated brand name, Restoril.

Benzodiazepines have the potential to affect the CNS more than some other drugs, and may result in effects such as tolerance (taking a higher dose in order to achieve the anticipated effect) and dependence (caused by chronic use and development of an addiction to the drug; a withdrawal syndrome results from discontinuation).

There are several nonbenzodiazepines that have become commonly used as sleep aids over the past few years. These fall into the class of sedative-hypnotics. Following is a list of these drugs, with their brand names:

- eszopiclone (Lunesta)
- ramelteon (Rozerem)
- suvorexant (Belsomra)
- zaleplon (Sonata)
- zolpidem (Ambien, or Ambien CR [controlled-release])

Although these are more specifically designed for sleep (induction, maintenance, or both), they do have CNS effects and are therefore associated with a variety of side effects. Specific effects depend on the **mechanism of action (MoA)**; for example, ramelteon initiates results similar to those of melatonin; the MoA of eszopiclone and zaleplon involves gamma-aminobutyric acid (GABA).

Whether a medication is being used for its primary effect or a desired side effect, nurses should be aware of the properties, including the MoA. This medication knowledge allows nurses to review individual patients' use of medications; anticipate drug-to-drug interactions and side or adverse effects; and assess whether or not the desired effects are achieved. See Table 28.7 located later in the chapter.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Disclaimer: Always follow the agency's policies regarding medication safety and administration.

Definition: The nurse recognizes the patient and/or designee as in control of their own care and specific needs.

Knowledge: The nurse understands that patient safety can be enhanced by actively involving the patient and significant other in administration of a nonbenzodiazepine sleep aid.

Skill: Involve the patient and significant other in active participation of safety and self-care management. The nurse will educate the patient and significant other about the prescribed nonbenzodiazepine, zolpidem. This will include the following information:

- mechanism of action
- amount of time before bedtime it should be taken
- potential side/adverse effects, including the following (Drugs.com, 2024a, PDR, 2024):
  - dizziness
  - hypersomnia
  - hallucinations
  - amnesia
  - gastrointestinal disturbances (nausea, vomiting, diarrhea)
  - parasomnias (sleepwalking, sleep driving, sleep shopping)
  - hypersensitivity reactions (anaphylaxis)
  - cognitive or behavioral changes
- what to do if concerning side/adverse effects occur

Attitude: The nurse values the active relationship with the patient and significant other in the care plan by assisting with education and evaluating understanding prior to starting medication regimen.

Treatment for difficulty sleeping, including sleep aids, is often adequate to improve patients' sleep and resolve problems with feeling sleepy while awake or falling asleep during the day. There are circumstances, however, when **hypersomnolence** (excessive feelings of fatigue and sleepiness, or episodes of sleep during normal times to be awake) is severe enough that medications are indicated to promote wakefulness. Medications range from caffeine to prescription drugs. Caffeine is available in tea and coffee beverages, energy drinks, and chocolate (Peters, 2023). There are also specific caffeine preparations available. There are several prescription medications that also promote wakefulness. Stimulants assist the brain's ability to focus and be attentive (Peters, 2023). Examples of prescription stimulants include the following (Drugs.com, 2024b; Peters, 2023):

- methylphenidate (Ritalin, Concerta)
- amphetamine and dextroamphetamine (Adderral)
- armodafinil (Nuvigil)
- modafinil (Provigil)

Central hypersomnolence disorders, such as narcolepsy, are discussed later in the section and frequently require prescription therapy. Drug treatment tends to start with stimulants. Some patients may not respond well to first-line treatment so may be prescribed selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), or tricyclic antidepressants (TCAs). See Table 28.8 later in the chapter.

Lifestyle, Habit, and Cultural Considerations

Habits, lifestyle, and culture influence sleep. Whether one participates in regular physical activity or lives a sedentary life can impact the quality and quantity of sleep. Caffeine and nicotine habits have potential to diminish the ability to sleep or to sleep well. Alcohol, although a depressant, can also lead to poor sleep. Additionally, life's stressful circumstances, and the body's response, are common contributors to issues with sleep. The importance of sleep, according to Lockett (2023), is as critical in health and wellness as the roles of exercise and nutrition.

Electronics have become a ubiquitous part of most lives. For many, electronic connectivity has become such a central part of life, they are viewing their screens right before bed, and perhaps responding to message alerts when they would previously have been entering deep sleep cycles. The additional light exposure of electronics also impacts sleep onset; it potentially also impacts quality, particularly by its reduction of melatonin production (AlShareef, 2022; Casiraghi et al., 2021).

Children and adolescents are frequently the first to come to mind as the primary users of electronics, through social media and other points of access. Indeed, some of the recent studies have focused on this population. In children ages 6 to 12, a delayed bedtime was noted due to the use of electronics (Lund et al., 2021). Additionally, these children identified experiencing poor quality sleep. In a slightly older group of students, ages 13 to 15, there was an association between difficulty falling asleep and time spent using electronics, as well as poor sleep with the use of social media (Lund et al., 2021).

An Iranian study of 290 participants with an age median of 17 years, smart electronic device use was at least 7.5

hours per day (Pirdehghan et al., 2021). Boys were associated with more use than girls in this group, and more than 60 percent of participants indicated having their cell phones in the bedroom while sleeping. Participants identified poor sleep related to their use of phones (Pirdehghan et al., 2021). Also linked to frequent use of electronic media were an increase in upper back and neck pain, body mass index (BMI), and vision disturbances associated with strained eyes, as well as noted decrease in function during the day and problems with relationships between parents and children (Pirdehghan et al., 2021).

University students between the ages of 17 and 29 years old were identified with high use of social media (97 percent of 300 participants) (Kolhar et al., 2021). Results included spending significant time using social media for chatting and shopping, with only one percent of time spent on academics. Impacts identified included delayed bedtimes, reduced social interactions, and distraction from academics (Kolhar et al., 2021). Additionally, a decrease in physical activity was noted, and an increase in risk for mental health concerns such as anxiety and depression (Kolhar, 2021).

A large sample (10,106) of adults were surveyed regarding electronics use and sleep quality, with consideration for daytime hypersomnia (AlShareef, 2022). More than 95 percent of participants slept with smart phone(s) in the bedroom, and more than 80 percent used the phones regularly during the night. Advances in technology and improvements in living standards are associated with expectations of around-the-clock availability, which was exacerbated by changes involving increased electronic/internet use during COVID-19 (AlShareef, 2022). Such frequent use was identified as contributing to poor quality of sleep and excessive sleepiness during the day (AlShareef, 2022).

LIFE-STAGE CONTEXT

Addicted to Social Media

Many adolescents and young adults identify themselves as addicted to social media. Of 300 women studying at a Saudi Arabian university, 57 percent considered themselves addicted to social media (Kolhar et al., 2021). Inquiries as to use of electronics and social media by nurses can contribute valuable information to other members of the multidisciplinary healthcare team and assist with individualized care planning.

Physical Activity

Physical activity supports sleep and prevents insomnia. Exercise tends to have general health benefits and promote psychophysiological homeostasis. Physical activity contributes to a body's normal functioning by maintaining flexibility, improving oxygenation and perfusion, and fostering other metabolic actions and reactions. The revitalizing effects of sleep involve toxin clearance from the body and the restorative capabilities that are especially associated with SWS (Shafiq et al., 2024). Additionally, physical activities lead to physical fatigue and therefore a desire and need for the recuperation and rejuvenation that occurs during sleep.

Although an appropriate amount of physical activity is usually associated with positive results, excessive activity may lead to strained muscles or injuries that may cause pain, which can disrupt sleep patterns. Recommended exercise includes 150 minutes weekly. Many people incorporate that into three fifty-minute sessions, but for sleep promotion it may be better to work out five times weekly for thirty minutes each session (Nunez, 2020). Timing of activity can be important, as too much physical activity close to bedtime can actually inhibit falling asleep or interfere with quality sleep. It is typically recommended to avoid exercise within approximately five hours of anticipated sleep, but some recent evidence indicates only one hour from bedtime is enough of a buffer for moderate physical activity (Nunez, 2020).

Caffeine, Nicotine, and Alcohol Intake

Stimulants, such as caffeine and nicotine, are common contributors to insomnia. Although there are some people who drink coffee or other caffeinated beverages with or after the evening meal, many avoid them as a way to promote good quality sleep. In addition to the potential for caffeine to directly inhibit sleep through stimulation, its diuretic effects may cause frequent urination, which can also prevent sleep. For those who partake of just a cup of post-dinner coffee, recent research indicates only a minimal impact on insomnia (Krans, 2019; Spadola et al., 2019).

Nicotine has been implicated as having more of a negative impact on sleep than caffeine (Krans, 2019; Spadola et al., 2019). No matter the form (e.g., cigarettes, smokeless tobacco, or vapes), nicotine can impede sleep by minimizing the feelings of sleepiness and readiness for bedtime. Patients should avoid nicotine within two hours of planned sleep. Nicotine is also associated with waking earlier in the morning. The early awakening is a result of the addictive nature of nicotine and the effect on the brain as it withdraws from the chemical overnight (Krans, 2019).

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize Hypotheses: Coffee and Cigarettes

A nurse has been talking with a patient about their inability to fall asleep promptly at bedtime. The patient is interested in behavior modification that will improve the nightly routine. During their discussion, the patient has provided the following cues about caffeine and nicotine: the patient consumes four cups of coffee every morning. Throughout the day, and up to bedtime, the patients smokes cigarettes. The patient has been a pack-per-day smoker for fifteen years. The nurse is aware that both caffeine and nicotine are stimulants and can contribute to the delay in falling asleep. Considering the time of day for use of each substance, the nurse suggests nicotine is the primary habit of concern.

Another chemical associated with insomnia is alcohol. Although alcohol is typically identified as a depressant, there is a stimulant effect involved with its metabolism (Krans, 2019; Spadola et al., 2019). This is why drinking an alcoholic beverage may assist someone in falling asleep, but within a relatively short time, the person is likely to awaken from the stimulant effects of alcohol metabolism (Krans, 2019). It can be difficult to fall asleep again. Recommendations are to limit alcohol to one or two drinks around the evening meal, then to avoid alcohol for three or four hours prior to bedtime (Krans, 2019; Spadola et al. 2019).

LINK TO LEARNING

This video discusses the effects of nicotine, alcohol, caffeine, and stress (https://openstax.org/r/77SleepProbs) on sleep.

Life Stressors

The stress response involves activation of the sympathetic nervous system and hormones associated with the fight-or-flight response (see Stress, Adaptation, and Homeostasis for more information). Hormones such as cortisol, epinephrine, and norepinephrine cause physical responses of stimulation. These physical responses may include tachycardia, tachypnea, hypertension, an increase in release of glucose, and even anxiety. When stressors affect patients' lives, it can be difficult to slow down the mind as well as the physical reactions. This can make falling asleep difficult, and even for those who are able to fall asleep, they may wake prematurely and find it hard to return to sleep. Control of stress, and learning techniques for appropriately coping with stressful situations, can help with insomnia caused by such life events.

Culture

Cultural influences and practices may impact the quality and quantity of sleep. Culture may influence how people think about sleep throughout the life span. For instance, some cultures frown upon naps in adulthood. Yet other cultures embrace naps throughout life's stages and even build such afternoon breaks into the workday. Some cultures are more or less likely to include and encourage health and wellness activities, such as exercise, immunizations, and preventive visits to healthcare providers. Such preventive measures tend to contribute to health promotion and disease prevention. This can contribute to improved health or to peace of mind. Those whose cultural mores and practices encourage participation in such actions may be more likely to experience adequate, restorative sleep.

Dietary choices are also frequently culturally based, not only as to specific foods and drinks, but also in terms of timing and withholding. For instance, some cultures and religions include periods of fasting or a single daily meal later in the evening. Others may discourage drinking alcohol. By way of example, fasting may affect sleep quality or quantity because an individual may be hungry, have gastrointestinal discomfort, or altered bladder or bowel

patterns.

Grief, also influenced by culture, can affect sleep. Cultural norms and practices often dictate the availability and amount of support a grieving person has from family and community. Sadness can be overwhelming, and may affect sleep patterns; depression can lead to a lack or excess of sleep.

Common Sleep Disorders

Some common sleep disorders include an inability to sleep or stay asleep (insomnia), or abnormal behaviors while asleep (**parasomnia**). Additionally, there are breathing and movement disorders that can affect both quality and quantity of sleep. There are also disorders of the central nervous system that can result in hypersomnolence.

Insomnia

Insomnia is an inability to fall asleep, to stay asleep, or to achieve good quality sleep. Lack of sleep results in feeling fatigued and sleepy, often throughout the day, and can hinder the ability to complete activities and obligations. Insomnia may also be a consequence of a physical or psychological disorder or condition. Insomnia often affects concentration, moods, and energy levels (Roddick & Cherney, 2024). Sleep disruptions are also associated with some cognitive disorders, including Alzheimer disease. Keep in mind that sleep is necessary to maintain clear thinking, to prompt reactions, and to process complex thoughts and circumstances.

Insomnia can be acute or chronic. Acute, or short-term, insomnia is temporary and may occur in response to a stressful situation, or a change to a person's sleep schedule, such as a later night than usual or having to get up earlier than expected. Jet lag is commonly associated with acute insomnia because it changes normal sleep cycles and patterns. Chronic insomnia, on the other hand, lasts longer than three months and/or occurs more than three nights per week. The risk for developing certain disorders, such as hypertension, coronary artery disease, diabetes mellitus, cancer, depression, and anxiety, is higher for those who experience chronic insomnia.

LINK TO LEARNING

Watch this video regarding insomnia (https://openstax.org/r/77Insomnia) that includes a description, possible causes, and treatment.

Parasomnias are abnormal behaviors while a person is asleep (Table 28.4). These manifest in dreams, movements, and vocalizations that occur as a person is falling asleep, while asleep, or as they wake up (Schwab, 2022). With many of the parasomnia behaviors, the person does not remember the activities. Associated dreams may be recalled immediately upon waking, but most are not remembered long term. There is an almost cyclical relationship between insomnia and parasomnias, as lack of sleep can contribute to the occurrence of parasomnias, and parasomnias may result in a lack of sleep.

Parasomnia	Activity/Behavior
Confusional arousal	• Confused/disoriented to space and time • Appear awake, eyes may be open, may sit upright, may speak or cry
Enuresis	• Occurs in adults or children at least 5 years old • At least twice weekly, for at least three months
Head banging	• Bangs head into mattress, pillow, wall, or floor • Occurs while falling asleep or during REM • More common in children than adults

TABLE 28.4 Parasomnias and Associated Activities or Behaviors (Sources: Cleveland Clinic, 2021; Schwab, 2022.)

Parasomnia	Activity/Behavior
Jaw clenching/ teeth grinding	• Grinding teeth or clenching jaw muscles while asleep
Nightmares	• Scary dreams and sudden awakening • Often happen with stress, excessive fatigue, alcohol consumption, or fever • May contribute to insomnia
Night terrors	• Sudden, terrified awakening: tachycardia, tachypnea, dilated pupils, diaphoresis • May scream or cry • Typically happen during SWS or partial arousal • More common in children than adults
Recurrent isolated sleep paralysis	• Possible extension of REM into another sleep stage • Inability to move extremities or body while asleep • Happens while falling asleep (stage I) or awakening (any sleep stage, including normal waking from REM and restoration of skeletal muscle movement) • Can be halted by being touched or spoken to
REM sleep disorder	• Speaking profanity, with aggressive movements during dreaming • Common in older adults; often occurs with degenerative brain disorder (e.g., Parkinson disease, Lewy body dementia, multiple system atrophy, stroke) • Dreams may be recalled
Sexsomnia	• Enact sexual behavior(s) while asleep: vocalizations, masturbation, intercourse, sexual assault, fondling bedmate
Sleep talking	• Talking while asleep • May be a sound or a conversation • More common in children than adults
Somnambulism	• Arise from bed and walk around • Eyes open • May be combined with sleep talking • May include driving, urinating in an abnormal location, arranging a space or furniture • Unaware of actions and surroundings; can be dangerous • More common in children than adults

TABLE 28.4 Parasomnias and Associated Activities or Behaviors (Sources: Cleveland Clinic, 2021; Schwab, 2022.)

LINK TO LEARNING

This video describes different parasomnias (https://openstax.org/r/77Parasomnias) and their symptoms, causes, diagnosis, and treatment.

Sleep-Related Breathing Disorders

Breathing disorders associated with sleep include obstructive, central, and mixed sleep apneas; sleep-related

hypoventilation; and sleep-related hypoxemia. Obstructive sleep apnea (OSA) is common and involves relaxation of the muscles of the posterior pharynx (back of the throat) (Figure 28.6). If these muscles relax excessively, they do not support structures within the mouth and throat, including the soft palate, tongue, and sides of the throat, resulting in the airway being blocked or narrowed (Mayo Clinic, 1998–2024; Newsom, 2023a).

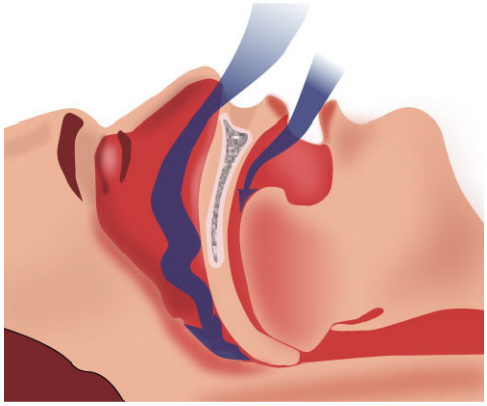

FIGURE 28.6 Airflow through the normal airway is free and unobstructed through the nasal and oral airways; with OSA (shown here), the flow of air is impeded by structures within the mouth and throat, such as the tongue, soft palate, and sides of the throat. (credit: "Obstruction ventilation apnée sommeil" by Habib M'henni /Wikipedia, Public Domain)

The impaired breathing causes an accumulation of carbon dioxide (CO_2), which, upon reaching a certain level, causes the brain to waken the individual, open the airway, and take a deep breath. Depending on the level of CO_2 and oxygen (O_2), it may take a few deep breaths to normalize the blood gases. Many people have no recollection of the frequent awakenings, as they return to sleep quickly. Nonetheless, if their sleep is disrupted several times each hour, it fragments their sleep, and they may be very drowsy during the day, have mood swings, and find it difficult to concentrate on tasks and thoughts.

Central sleep apnea (CSA) is less common than OSA. It involves a lack of communication between the brain stem and the muscles involved in breathing (Mayo Clinic, 1998–2024; Newsom, 2023a). The airway remains open, but the impaired messaging causes frequent apneic episodes throughout a sleep cycle. Patients with CSA tend to experience the same fragmented sleep as those with OSA, but they also may notice nighttime discomfort in the chest, headaches in the morning, and insomnia (Mayo Clinic, 1998–2024; Newsom, 2023a). Mixed sleep apnea, as the title indicates, is simply a combination of obstructive and central sleep apnea. Therefore, both disorders occur in the same person throughout sleep.

REAL RN STORIES

Central Sleep Apnea

Nurse: Ellen, BSN
Clinical Setting: ICU
Years in practice: 6
Facility location: Community hospital in the metropolitan Denver area

I was taking care of a young man named Walter, in his early 20s. He had had a benign brain tumor removed and had been in the ICU for about a month, because he was not recovering well neurologically. I had taken care of him for several nights during that month, and I guess I had come to know him pretty well. Because he was minimally responsive, nurses had to use various other cues for many aspects of his assessment. He would open his eyes, sometimes spontaneously, and he could move all extremities, but not to command at that point. Neuro assessments can change, often for the worst, so fast; I was always a bit on edge about his neuro status. One night, as I was catching up on charting, I heard Walter begin snoring loudly, followed by a respiratory pause. I jumped up and started for his room! As I ran, I heard him gasp for a deep breath. By the time I got to his room, he was snoring again. "What's wrong?" one of my colleagues asked from the nurses' station, startled by my fast departure. "Walter doesn't SNORE!!!" I yelled, flipping on the light so I could do a more complete neuro assessment. He continued to have significant pauses in his breathing, and there were other changes that made me think pressure was rising in his

skull, causing central sleep apnea. I called Dr. Monroe, the neurosurgeon, to let him know. He was there within a half hour, putting in a bolt. When the drill punctured through the skull and dura, CSF spurted across the room, but as the pressure was normalized, Walter's neuro status returned to his baseline. No more snoring.

There are several other breathing disorders associated with sleep as well. Sleep-related hypoventilation means shallow and unusually slow respirations while asleep. Such inadequate breathing allows for the patient to develop hypercapnia, or elevated blood CO_2. Sleep-related hypoxemia (low level of O_2 in the blood) is typically not a primary disorder but the result of another condition, usually respiratory, such as chronic obstructive pulmonary disease (COPD).

LINK TO LEARNING

This video discusses obstructive, central, and mixed sleep apnea (https://openstax.org/r/77Apnea) and risk factors, causes, diagnosis, and treatments.

Sleep-Related Movement Disorders

Although some of the parasomnias discussed earlier do involve repetitive motions while asleep, such as jaw clenching, teeth grinding, and head banging, this section focuses on three sleep-related movement disorders: restless legs syndrome (RLS), periodic limb movement disorder (PLMD), and sleep-related leg cramps.

RLS, as the name indicates, involves leg movements that tend to begin in the evening and become acute when a person lies down to sleep. The sensation of the need to move the legs can become uncontrollable, and may even be painful, with the person moving not only the legs, but frequently repositioning in an attempt to calm the urge for movement. For some, arms and neck may become involved in the restless feelings (Newsom, 2023b).

Nutrition and medications may contribute to episodes of RLS. Alcohol, nicotine, and caffeine are sometimes involved in RLS symptoms, and deficiencies in iron, zinc, vitamin D, and magnesium may also be apparent in those who experience RLS (National Institute of Neurological Disorders and Stroke [NINDS], 2023; Pacheco, 2024). Antihistamine use may cause RLS symptoms and there is a genetic component for some patients; for many it is idiopathic. Some conditions that may lead to RLS include neuropathy, pregnancy, renal disease/failure and hemodialysis (NINDS, 2023).

RLS is not curable, but there are symptomatic treatments, which may include lifestyle adjustments and medications. If particular foods or drinks are identified as contributing to the symptoms, reducing or eliminating these is helpful (NINDS, 2023). Sleep hygiene and improved sleep patterns can prove helpful, as can regular moderate exercise; massage of the legs may also reduce symptoms (NINDS, 2023; Pacheco, 2024). Depending on the patient, medication therapy for RLS may include iron, dopamine agonists (e.g., pramipexole, rotigotine, ropinirole), opioids, and benzodiazepines (NINDS, 2023).

PLMD is associated with movements of the arms, legs, or feet while asleep. PLMD occurs with RLS for more than 80 percent of those who experience it (Newsom, 2023b; NINDS, 2023). Movements are involuntary and are typically repetitive; twitching is common, though patients may also kick. These episodes of movement can be very short term (five seconds) or may last more than a minute, and they may occur more than fifteen times hourly, which leads to awakening and a very fragmented sleep (Newsom, 2023b). Unlike with RLS, people experiencing PLMD do not notice pain, nor do they feel the deliberate need to move their extremities. As with RLS, nutritional imbalances and medications may contribute to episodes of PLMD, and some of the same treatments for RLS may help patients; no medications are recommended specifically for PLMD (Newsom, 2023b).

Cramps and muscle spasms can be quite painful; for some people, they occur while asleep and are therefore identified as sleep-related leg cramps (Newsom, 2023b). Such cramping can last from seconds to minutes, and they can wake a person up or prohibit falling asleep. Sleep-related leg cramps are associated with tired muscles and certain diagnoses, such as electrolyte abnormalities, dehydration, and nerve problems (Newsom, 2023b; Sumner, 2024). Application of heat and massage of cramping muscles may relieve the cramps, and medication therapy is typically focused on identifying and treating underlying conditions (Newsom, 2023b; Sumner, 2024).

Central Disorders of Hypersomnolence

Hypersomnolence is characterized by an inability to stay awake during waking hours. The sleepiness related to hypersomnolence is out of proportion to an individual's need for sleep. In other words, getting what should be enough sleep overnight does not change the daytime hypersomnolence (Cleveland Clinic, 2024). Hypersomnolence disorders often negatively affect work and relationships, and patients are at risk for accidents, such as falling or motor vehicle accidents (MVAs). Central nervous system hypersomnias include narcolepsy, Kleine-Levin syndrome, and idiopathic hypersomnia (Cleveland Clinic, 2024; Moawad, 2024). These are considered primary hypersomnia, as the hypersomnia is not caused by something else; these are quite rare. Levels of neurotransmitters (e.g., orexin, histamine, dopamine, serotonin, and GABA) may be implicated in narcolepsy (Cleveland Clinic, 2024). Low orexin levels have been noted with type 1 narcolepsy (Cleveland Clinic, 2024). Individuals with type 1 narcolepsy are liable to experience **cataplexy** (muscle weakness) after exposure to an emotional situation involving stress, fear, excitement, and even laughter. Type 2 narcolepsy involves the same sort of sudden episodes of sleep but without cataplexy or low orexin levels (Cleveland Clinic, 2024). Treatment for narcolepsy includes stimulant drugs, SNRIs and SSRIs, and TCAs.

Kleine-Levin syndrome (KLS) involves occurrences of hypersomnia, behavioral or cognitive disorders, hypersexuality, and compulsive eating (Shah & Gupta, 2023). The cause of KLS has not been identified, though possible contributors include

- abnormal levels of neurotransmitters (e.g., dopamine, serotonin),
- infection,
- mental health disorder(s),
- toxins, and
- trauma (Shah & Gupta, 2023).

Treatment for KLS is multifaceted and may include psychiatric and pharmaceutical approaches (Shah & Gupta, 2023). As with treatment of narcolepsy, stimulants are used to directly address the hypersomnia, but they do not improve the cognitive and behavioral aspects of the syndrome (Shah & Gupta, 2023). Although there has not been one particular drug or class of drugs identified as particularly effective in treating the behavioral and mental health aspects of KLS, drug classes used include anticonvulsants, antidepressants, and mood stabilizers (Shah & Gupta, 2023).

Idiopathy indicates there is not a particular cause identified for a disorder.

Idiopathic hypersomnia therefore involves daytime sleepiness, in spite of adequate sleep, without a specific cause. Identification may take time and involve trial and error. Various treatment options may similarly be tried over time, in an effort to find the right drug or drug combination for individual patients.

Secondary hypersomnia occurs as a result of something else, such as a disease process or use of substance(s). Hypersomnolence disorders are not common and typically affect women more than men (Table 28.5) (Cleveland Clinic, 2024). Some of the medical conditions associated with secondary hypersomnia include

- depression
- multiple sclerosis (MS),
- neurological damage or trauma, and
- sleep apnea (Stubblefield, 2023).

Treatment of secondary hypersomnia may involve at least temporary treatment with medications such as stimulants used to treat narcolepsy. Treating the source of the problem, however, is more definitive, so the primary cause of the daytime drowsiness (medical diagnosis, drugs, or alcohol) becomes the focus of treatment.

Type of Hypersomnia	Subtype/ Cause of Hypersomnia	Notes
Primary	Narcolepsy type 1	• Sudden episode of falling asleep with muscle weakness (cataplexy) • Initiated by emotions • Low orexin (neurotransmitter) level • May be accompanied by sleep paralysis and hallucinations • Common onset between 10 and 25 years old
	Narcolepsy type 2	• Sudden episodes of sleepiness and sleeping • Normal orexin level • Common onset in adolescence
	Kleine-Levin syndrome	• Recurrent hypersomnia associated with behavioral or psychiatric problems • Hypersomnia, obsessive overeating, hypersexuality • Each occurrence lasts up to ten days (may last months and recur through the year) • Level of alertness is normal between episodes • Young men are primarily affected • Episodes decrease over time (reduced episodes and resolution over approximately eight to ten years)
	Idiopathic hypersomnia	• Unknown reason for extreme somnolence • Not improved by ample sleep
Secondary	Hypersomnia from a medical condition	• Diagnoses associated with hypersomnolence include bipolar disorder, depression, encephalitis, epilepsy, multiple sclerosis, multiple systems atrophy, obesity, OSA, and Parkinson disease
	Hypersomnia from drugs or alcohol	• Sedatives—benzodiazepines, barbiturates, melatonin • Antihypertensives • Antiepileptics • Anti-Parkinson's drugs • Muscle relaxants • Antipsychotics • Opiates • Cannabis • Alcohol • Note: Withdrawal from use of some drugs can also cause hypersomnia.
	Insufficient sleep syndrome	• Not achieving seven to nine hours of sleep • Not following good sleep habits

TABLE 28.5 **Types and Examples of Hypersomnia** (Source: Cleveland Clinic, 2024.)

PATIENT CONVERSATIONS

Narcolepsy in a Learning Environment

Scenario: A nursing student failed a medical-surgical nursing exam. When the student met with the faculty nurse to review the exam and plan for improvement, the following conversation took place:

Nurse: I'm concerned about your exam result, Nicole.

Student: So am I. I studied.

Nurse: Well, that's a good start. Do you have test anxiety?

Student: Not that I've noticed before. Well, maybe some, but it's never been a big deal.

Nurse: Do you have any ideas?

Student: Not really.

Nurse: I've noticed you sleeping during classes. Not just a little bit, but several times. You're missing a lot of content.

Student [looking down, blushing]: I'm so sorry. I don't know what's happening. I think this stuff is interesting, but I can't stay awake sometimes.

Nurse: Has this happened before? In other classes? At other times or places?

Student: Yes. More over the past year or year-and-a-half. I can fall asleep about anywhere. I fall asleep in all my classes.

Nurse: Do you feel more tired, or does it just happen?

Student: Sometimes I do, but sometimes, like in class, it just comes on me suddenly. I can't hold it back, like I used to be able to. I just get weak, and then I'm asleep. Sometimes I can still sort of hear you talking in class. But I guess it's not like normal. I don't remember things like when I'm really awake.

Scenario follow-up: The faculty and student reviewed the exam results, and discussed techniques for improved studying. The concern remained though, that if the student continued to fall asleep in class, exam scores would not improve.

Nurse: I wonder if you have a sleep disorder. Has your doctor ever mentioned such a thing? Maybe narcolepsy?

Student: No. Nothing like that.

Nurse: I'm not a nurse practitioner, but that just comes to mind. I think it would be worth getting checked out, because I worry about your success in all your classes. And if it's not narcolepsy, at least there might be something—maybe a medication—you can take to normalize your sleeping so you're not so drowsy during the day.

Student: I'll make an appointment right away.

Nurse: Excellent. Let me know if there's anything I can help with.

Scenario follow-up: The student notified faculty about a narcolepsy type 1 diagnosis later in the semester.

28.3 Effects of Insufficient Sleep

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine the effects of insufficient sleep in children
- Recognize the effects of insufficient sleep in adults
- Analyze behavioral effects of insufficient sleep

Sleep has so many functions throughout the life span. In early development, much neurological growth and

development occurs during sleep. At any stage, recuperative, healing, and rejuvenating events happen primarily while a person sleeps. Sleep is also necessary simply for feeling adequately energized and ready for the expectations and activities of a normal day.

Insufficient sleep caused by either a total lack of sleep or a lack of quality sleep can affect people in many ways. For children, sleep insufficiency may influence growth and development, and, for both children and adults, sleep inadequacy can have behavioral, psychological, and physiological implications.

Insufficient Sleep in Children

Problems sleeping affect 25 to 50 percent of young children, and approximately 40 percent of adolescents (Pacheco, 2023). Results of insufficient sleep may be apparent in growth and development, mental health, behavior, and performance issues. It also places these children at higher risk for obesity and related health concerns.

Growth and Development

Insufficient sleep can affect a child's normal growth and development. Inadequate sleep has direct effects on cognitive operations, alertness, the ability to focus and pay attention, the acquisition of vocabulary, and memory (Liu et al., 2024; Pacheco, 2023). Growth hormone has a relationship to circadian rhythms, with typical release during sleep. Not enough sleep during infancy can result in secretion of insufficient amounts of growth hormone, therefore potentially impacting normal growth at such a critical time (Pacheco, 2023). Chronic lack of growth hormone results in reduced growth, impaired focus and alertness, and inability to regulate moods or positively adapt and develop resiliency. For toddlers, napping is needed to consolidate memories and to develop motor skills and high-level attention.

The impact of insufficient sleep on adolescents is seen physically through development of risk factors for, or diagnosis of, cardiovascular, metabolic, and inflammatory disorders. Hypertension, cardiovascular disease, and diabetes mellitus (especially type 2) are becoming more commonplace in adolescence and even childhood, and insufficient sleep is one major factor (Liu et al., 2024; Pacheco, 2023). Behavioral, mental health, and performance issues in this age group are also associated with sleep insufficiency.

LINK TO LEARNING

Watch this video about typical development (https://openstax.org/r/77LackOfSleep) and consider what effects are likely without adequate sleep.

Behavioral and Mental Health Concerns

Insufficient sleep can impact the behavior and mental health of children in many ways. It has the potential to influence the ability to

- pay attention,
- focus,
- plan,
- tolerate frustrating circumstances,
- regulate moods,
- adapt,
- develop resilience, and
- learn (Liu et al., 2024; Pacheco, 2023).

Children and adolescents who have no history of mental health concerns may experience such issues as depression or anxiety when sleep deprived; those who have an existing mental health diagnosis are at greater risk for such challenges to worsen (Columbia Psychiatry, 2022).

PATIENT CONVERSATIONS

An Angry, Irritable First Grader

Scenario: A young mother has brought her 6-year-old child to the pediatrician's office because the child is becoming increasingly difficult to control.

Nurse: Good morning, Ms. Solange, I'm Susan, Dr. Jackson's nurse. And this must be Lorene? Hi, Lorene.

Patient: Hi, Susan.

Nurse: Lorene, I'm going to ask your mom some questions, okay? If you have something to add, you can. Is that okay?

Patient: Sure.

Nurse: Ms. Solange, tell me more about what's going on with Lorene.

Patient's mother: She started first grade in August. She loved school. She would even help me in the mornings. Then, about a month ago, she brought home a note from the principal. She'd been in a scuffle at school.

Patient: She slapped me first, Mom.

Patient's mother: I know, Lorene. But I have to tell the nurse what happened.

Nurse: Any other events?

Patient's mother: Yes. She's been bringing home notes from the teacher that she's not reading up to grade level, and her spelling is getting worse, not better.

Nurse: How is her behavior at home?

Patient's mother: She's been grumpier. Sometimes she acts . . .

Patient: I'm not grumpy!

Patient's mother: I'm sorry, honey, but sometimes you seem unhappy and get a little angry about things. Don't you?

Nurse: It's okay, Lorene, sometimes we all get a little grumpy. Do you feel like you're getting enough sleep at night?

Scenario follow-up: Lorene and her mother were a little startled by the question, but it opened a flood of emotions.

Patient: Mom, you know about Emeline, at school?

Patient's mother: Yes. She's the one who slapped you, and you slapped back, right?

Patient: Yeah. That's her. Well, she didn't stop after that day.

Nurse: Is this girl still bothering you at school, Lorene?

Patient: Yes. She hasn't hit me again, but she's so mean.

Patient's mother: Oh Lorene, baby. You didn't tell me.

Scenario follow-up: Susan and the Solanges discuss that Ms. Solange will contact the teacher and principal and determine what can be done to resolve the situation. Lorene is seen by the pediatrician who confirms stress-related insomnia.

Nurse: Now, as for Lorene's being grumpy at home and not doing well at school, it's complicated but likely because she's not sleeping well and has significant stress going on at school. The stress has affected her sleep, which affects her ability to handle Emeline and whatever else was difficult. Then she'd worry at home, and not sleep even more. Did I miss anything, Lorene?

Patient: I think you got it. Am I in trouble?

Patient's mother: No, you're not. I'm sorry it went on so long, Lorene. But now we know some things to do.

Nurse: So, you've got some work to do with the school, and I'll give you some ways to improve Lorene's ability to reduce stress and improve sleep. In one week, let me know how it goes with the school and how Lorene is doing.

LINK TO LEARNING

Behavioral and mental health consequences of insufficient sleep (https://openstax.org/r/77InsuffSleep) are described in this video. Some of the recommendations for improving sleep quantity and quality may be helpful for nursing care and patient education.

Performance Deficits

Neurophysiological development requires sleep to provide the circumstances that foster certain healing and restorative actions that cannot be accomplished while awake (Nunez & Lamoreux, 2023). Without these revitalizing benefits, performance may suffer. Possible effects on performance include

- lack of alertness,
- inability to concentrate and complete tasks,
- impaired cognitive and reasoning abilities,
- poor memory,
- slowed reaction times,
- poor development of motor skills, and
- lack of academic achievement (Liu et al., 2024; Nunez & Lamoreux, 2023).

Risk for Obesity

Obesity is an issue in pediatric populations as well in the adult population. Insufficient sleep is associated with development of some of the physiologic (e.g., metabolic) and psychologic (e.g., depression) factors involved in the occurrence of obesity in children (Pacheco, 2023). Studies have noted an inverse relationship between sleep duration and occurrence of overweight and/or obesity (Morrissey et al., 2020). Research indicates that lack of sleep leads to alterations in hormone regulation, which results in an energy imbalance, a subsequent reduction of activity level, and increased intake of calories. Many sleep-related factors affect children's weight, including quality of sleep (as measured by polysomnography), quantity of sleep, where in the twenty-four-hour day sleep occurs, and whether it is easy for a child to fall asleep and stay asleep.

Obesity tends to be accompanied by metabolic disorders, including insulin resistance and cardiovascular-related concerns such as **hyperlipidemia** (elevated blood lipids) and **dyslipidemia** (abnormal blood lipids), hypertension, and coronary artery disease. Anxiety and depression can also contribute to obesity. Additionally, such mental health concerns perpetuate the cycle of insomnia, and all the associated consequences.

Insufficient Sleep in Adults

Some of the same factors that affect children's sleep are involved in insufficient sleep occurring in adulthood. Chronic sleep insufficiency negatively affects mental and physical health and wellness. Cognitive and behavioral outcomes include decreased reasoning skills; risky, impulsive actions; and poor mood and judgment.

Depression, anxiety, mood disorders, and attention deficit hyperactivity disorder (ADHD) are examples of psychological disorders commonly impacted by lack of sleep (Suni, 2024). Physiological issues that may have a connection to sleep deprivation include cardiovascular, respiratory, gastrointestinal, and metabolic disorders.

Psychological and Cognitive Concerns

Sleep insufficiency is associated with anxiety, depression, concentration, memory, and mood (Suni, 2024). This relationship sometimes occurs in a bidirectional manner, whereby lack of sleep can be both a contributor to, and the effect of, a mental disorder (Columbia Psychiatry, 2022; Suni, 2024). Even patients who have no history of a mental health disorder might experience issues after episodes of insomnia, especially if the sleep problems become chronic. Psychological distress and insomnia can then become a self-perpetuating problem. Treating the sleep disorder sometimes improves the mental health problem (Suni, 2024).

Anxiety

Anxiety can be a cause of sleep insufficiency or an occurrence secondary to lack of sleep (Columbia Psychiatry, 2022; Pacheco, 2023; Roddick & Cherney, 2024). Anxiety can be mild or any level of severity up to and including a panic attack. Furthermore, the influence on sleep may be mild, and merely cause a slightly lengthened time to fall asleep. Or it may involve enough worry to cause fear and result in hyperarousal, with not only slower time to achieve sleep, but fragmented sleep and an inability to reach the REM stage because of frequent awakenings and difficulty returning to sleep.

Acute episodes of insomnia in people who have no longstanding history of an anxiety disorder will likely result only in mild anxiety. Chronic anxiety is likely to be more severe when coupled with chronic insufficient sleep (Pacheco, 2023; Suni, 2024). PTSD, involving a combination of hyperarousal and recurrent episodes based on trauma, can worsen sleep issues with nightmares and sudden traumatic awakenings (Suni, 2024). Likewise, insomnia can worsen the consequences of PTSD.

Depression

Another psychological concern frequently associated with insufficient sleep is depression. Similar to anxiety, depression may lead to insufficient sleep, or the loss of sleep may result in depression (Suni, 2024). Depression may occur as a result of an event, such as the death of a family member or friend. In such an acute case, the situational depression and linked problem sleeping is relatively short-lived and tends to resolve without interventions. Chronic depression and related insomnia may necessitate a variety of treatments.

Patients may also turn to substance use as a way of self-medicating depression and feeling better temporarily. This, unfortunately, may result in increasing the negative cycle of poor sleep worsening depression and depression worsening sleep (Pacheco, 2023). Additionally, suicidal risk may increase as a consequence of inadequate sleep, even when the patient has no history of depression (Suni, 2024).

Concentration and Memory

While sleeping, the brain is able to recover from the day's demands, including those involved in learning, concentration, and memory consolidation (Pacheco, 2023; Suni, 2023). Insufficient sleep, especially a lack of SWS and REM sleep, negatively impacts these functions and impedes development of healthy adaptations to stress (Suni, 2024). Hypersomnolence may also be implicated in poor memory, confusion, or an inability to concentrate (Cherry, 2023). Other psychological disorders such as ADHD; **seasonal affective disorder (SAD)**, which is depression occurring relative to lack of light; and symptoms of bipolar disorder and schizophrenia can all be adversely affected by insufficient sleep. Manifestations tend to involve worsening of symptoms, including those involved with concentration and the ability to recall information.

Severe Mood Swings

Mood swings may be a result of, or worsened by, insufficient sleep. Without proper rest, patients may feel easily frustrated, tense, and irritable (Cherry, 2023; Suni, 2024). Adequate, restorative sleep fosters positive coping and resilience; sleep deprivation reduces normal brain function and can increase tension, reactivity, and aggression (Cherry, 2023). Such mood changes contribute to negative results in home, school, and/or work environments. Treating the insufficient sleep is likely to improve the mood swings and often begins by discussing sleep hygiene and habits with the patient. Further workup by the healthcare provider may include polysomnography and medication therapy.

Hallucinations

Ineffective sleep can cause neuronal stimulation and excitability in the region of the brain involved in movement. This can result in intensified processing of information and hallucinations with chronic lack of sleep (HealthMatch, 2022). In fact, chronic lack of sleep is associated with a fourfold increase in the potential to experience hallucinations; those experiencing only mild insomnia are at two to three times the risk of such distorted perceptions than someone with adequate sleep (HealthMatch, 2022).

Hallucinations may manifest as simple or complex and may involve changes in an object's color, an object's size, or distance and depth perception (HealthMatch, 2022). Persons experiencing hallucinations may be unable to recognize common items and sounds. Those who have a diagnosis involving altered perception of reality, such as schizophrenia, may experience hallucinations at baseline, with worsening symptoms if sleep deprived.

Physiological Concerns

Insufficient sleep also affects the body's physiologic responses or maintenance of homeostasis. Various neurohormonal responses occur during sleep cycles, including healing and restoring actions as well as the secretion of hormones that sustain normal physiological functions. Sustaining the normal function of the human body involves complex, coordinated activities between the brain and the different organ systems. Sleep is necessary for these systems to perform their necessary tasks and sustain a homeostatic state.

Gastrointestinal

The gastrointestinal system is affected by quantity and quality of sleep, in a bidirectional fashion. Therefore, insufficient or poor sleep can contribute to gastrointestinal disorders, and gastrointestinal problems can result in ineffective sleep (Orr et al. 2020; Vernia et al., 2021). Gastrointestinal distress often leads to fragmented sleep. Subsequently, the shortened sleep duration contributes to actual and perceived gastrointestinal symptoms, such as reflux, pain, and bloating. Some of the gastrointestinal disorders commonly exacerbated by lack of sleep include

- gastroesophageal reflex disease (GERD),
- irritable bowel syndrome (IBS),
- irritable bowel disease (IBD),
- colon cancer, and
- nonalcoholic fatty liver disease (NAFLD).

There is a pathophysiological relationship observed between OSA and NAFLD. The intermittent hypoxia associated with OSA also contributes to other metabolic disorders, including hyperlipidemia and cellular resistance to insulin (Orr et al., 2020). Secretion of some hormones, growth hormone (GH), prolactin, melatonin, serotonin, and testosterone, can be affected by nutrient intake and circadian rhythms (Vernia et al., 2021).

Nutrition is also potentially contributory to gastrointestinal health or illness. Vernia et al. (2021) noted the psychophysiological relationship of healthy diet and lifestyle and good sleep. Dietary habits such as the following can disrupt sleep:

- eating fast
- irregular or skipped meals
- overeating
- poor-quality food selections
- caffeine
- alcohol

Cardiovascular

The cardiovascular system is particularly sensitive to insufficient sleep. Implications can be seen in inflammatory responses and the development of atherosclerosis, hypertension, hyperlipidemia, hyperglycemia/diabetes mellitus (DM), obesity, and subsequent myocardial infarction (MI) and stroke (Cleveland Clinic, 2020; Suni, 2023). More specifically, lack of sleep can result in excess calcium deposited in the coronary arteries. This, along with hyperlipidemia and inflammation, contribute to plaque formation. Plaque increases the risk for MI and stroke. Chronic hypertension causes stress on the heart and can contribute to MI and heart failure (HF). The kidneys and brain are also prone to damage secondary to poor perfusion (Suni, 2023).

The interplay between insufficient sleep and these cardiovascular problems can themselves contribute to poor sleep. Depending on the stage of HF, symptoms may include fluid retention and subsequent difficulty breathing. Patients often worry about their physical status and the potential for the condition to worsen. These actual and potential symptoms can negatively impact the quality and quantity of sleep.

Seven to eight hours of quality sleep is recognized as an optimal amount for adults, with lack of sleep contributing to negative cardiac effects. While in NREM sleep, especially stage III, the parasympathetic nervous system counters the effects of stress: heart rate and blood pressure reduce, and respirations become slower and shallower. Without sufficient time spent in stage III NREM sleep to foster relaxation and rejuvenation, pathological changes may appear (Cleveland Clinic, 2020; Suni, 2023).

Metabolic

Metabolism is influenced by sleep and insufficient sleep in a few ways. The intermittent hypoxia involved in obstructive sleep apnea (OSA) is related to such metabolic disorders as insulin resistance and hyperlipidemia (Orr et al., 2020). Diet is also influenced by sleep, as lower levels of the hormones ghrelin and leptin result in not feeling full and food cravings for choices high in fats and carbohydrates.

Related lipid abnormalities, especially the combination of high triglycerides and low high-density lipoprotein (HDL), insulin resistance, hyperglycemia, hypertension, and weight gain, are commonly associated with metabolic syndrome and DM (Chasens et al., 2021). Those who sleep less than five hours, or more than nine hours per day, are at elevated risk for development of metabolic syndrome.

Immunity

Sleep fosters normal immune function, and insufficient sleep is related to both adaptive and innate immune function alterations (Garbarino et al., 2021). Sleep supports the body's immunological memory. Immune cells are among those produced primarily during sleep (Heid, 2023). Adequate sleep is necessary for maintenance of normal immune function, homeostasis, the ability to fight microbial invasions, and/or to mount a normal and effective inflammatory response. Patients who do not receive the sleep they need are more susceptible to infections, autoimmune reactions, and exaggerated inflammatory responses resulting in infections and chronic inflammatory responses. These may include pathological changes in the cardiovascular and metabolic systems, autoimmune and neurodegenerative diseases, and cancers, especially colorectal, prostate, and breast cancers (Garbarino et al., 2021). Autoimmune disorders, such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA), are also more common in those who experience chronic sleep loss. Due to chronic illness, the normal immune response becomes unregulated and intensified, causing a more drastic inflammatory response and continuation of chronicity (Garbarino et al. 2021).

Behavioral Effects of Insufficient Sleep

Decision-making can become impaired by lack of sleep, resulting in behavior changes, including impulsive actions. Misuse of substances and risky, dangerous driving are two potentially damaging behaviors that can be associated with inadequate sleep. Additionally, hypersomnia can negatively affect all different types of behaviors.

Increased Risk for Substance Misuse

Insufficient sleep can have various psychological results, which can then impact behavior because inadequate sleep can have deleterious effects on clear thinking, coping, and decision-making. Many people self-medicate with substances, such as alcohol, OTC medications, marijuana, and other illicit drugs in order to stay awake, fall asleep, and cope with feelings of anxiety, mood changes, frustration, and insecurity. Some look for ways to feel happier, and some search for methods to calm down, even when such relief is temporary and may even result in worsening long-term effects.

Substance use often backfires when it comes to improving sleep. Alcohol is an example: while it may contribute to falling asleep, it is not typically a good quality sleep and, as the alcohol is metabolized, it often results in wakening with symptoms of feeling overheated and dehydrated. Using substances as a coping mechanism also contributes to the chronicity of ineffective sleep patterns and continues the negative cycle, which can be very hard to break.

Motor Vehicle Accidents

According to the National Sleep Foundation (NSF, 2022), driving while drowsy equals driving while impaired. The NSF (2022) estimates that approximately 21 percent of motor vehicle accidents (MVAs) resulting in death are attributable to drowsy driving; about 13 percent of drowsy driving MVAs result in hospitalizations. These statistics are significant and frightening, and the morbidity, mortality, and healthcare costs are enormous. The NSF goes on to describe drowsy driving as worthy of being classified as the fourth "D" regarding driving:

- drunk
- drugged
- distracted
- drowsy

Driving while drowsy is preventable but requires the necessary recognition and respect of its influence on safe

driving. The NSF (2022) describes three to five hours of sleep within the previous twenty-four hours as likely to cause impaired driving for most people.

LINK TO LEARNING

The NSF's Breaking Report (https://openstax.org/r/77DrowsyDriving)shares information regarding drowsy driving, including the graphs about frequency, perceptions about risk, hours of sleep needed for safety, and driving ability confidence.

28.4 Nursing Care to Promote Sleep and Rest

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify nursing assessment skills for sleep disturbances
- Describe education to encourage good sleep hygiene practices
- Understand medication administration for sleep and rest

Nurses play an important role in caring for patients with sleep disturbances. Through the data collection (assessment) phase, patient education to improve sleep, and medication administration and education, nurses are involved directly in engaging with patients. Nurses can gather vital information about a patient's personal and family history, advise about keeping a sleep log, and provide information about sleep studies for those who are prescribed such diagnostic testing. The role of the nurse often includes educating patients about issues they are experiencing and ideally helping identify methods to improve problems.

Assessment for Sleep Disturbances

Nursing care begins with the assessment—gathering necessary and helpful information upon which to build care planning—and continues with prioritizing patient problems, identifying ways to approach them, implementing the identified actions, and evaluating the outcome(s). In the case of sleep disturbances, data collection begins with a detailed family and personal history focused on particular factors that may influence rest and sleep.

Patients who have been experiencing insufficient sleep are often asked to keep a sleep log, and the nurse is able to analyze this diary of events, providing important information to the prescriber. Some patients are prescribed a sleep study, and nurses can educate the patient prior to such a study and assist with poststudy follow-up with the patient and family, if indicated.

Nursing assessment should also include inquiry as to any changes the patient has noticed—psychologically or physiologically—that could be a result of the lack of sleep. The patient may have made the connection or may not have considered sleep as the root of the changes. The nurse may be the first to recognize the link, particularly if already familiar with disorders that are often related to sleep disturbances.

Collect a Detailed History

Family and patient history, including diagnoses, surgeries, and medications, is a starting point for assessment. The nurse should perform a focused assessment, exploring sleep patterns, hours of sleep, and whether the patient or significant other reports loud snoring, or apneic periods followed by episodes of gasping as the body works to recover from the apnea-related hypoxia. Note that for those who work nights, times for sleep may need to be adjusted or follow-up questions added about time at work versus time off. Table 28.6 offers some guiding questions and can be modified to fit the practice needs of individual nurses.

Questions	Answers
On an average night, how many hours do you sleep?	Recommended: Infants (4–12 months) 12 to 16 hours/day (including naps) Children (1–2 years) 11 to 14 hours/day (including naps) Children (3–5 years) 10 to 13 hours/day (including naps) Children (6–12 years) 9 to 12 hours/day Teens (13–18 years) 8 to 10 hours/day Adults (18 years or older) 7 to 8 hours/day
How do you rate your overall sleep quality over the past month?	Excellent Very good Fairly good Good Poor
Do you go to bed and wake up at about the same time every day, even on days off?	Yes No
While you're doing things during the day, how likely is it for you to fall asleep or to struggle to stay awake?	Very likely Likely Not likely Unlikely
How often do you have trouble going to sleep or staying asleep?	Never Rarely Occasionally Often
During the past two weeks, how many times was loud snoring reported by your sleep partner?	Never Any number

TABLE 28.6 Sleep-Related Focused Interview Questions

Analyze the Patient's Sleep Log

It is helpful to have patients keep track of their sleep by using a **sleep log** (Figure 28.7). This may also be referred to as a sleep diary or journal. There is often more information desired by the healthcare team than just hours slept. Examples of questions to consider including in a sleep diary in order to provide comprehensive data include the following:

- What medication(s) do you take? What time do you take it/each?
- Do you exercise? How often? What time?
- How long did it take to fall asleep?
- How well did you sleep?
- How many disruptions during sleep time? How long did the disruptions last?
- How many daytime naps? How long were the naps?
- Did you drink caffeine or alcohol? How much? What time?
- Did you use tobacco or other drug substances? At what time?

Such a log quantifies the amount of sleep normally achieved, as well as the frequency of sleep disturbances, severity, and the impact on the patient's activities during normally active times. It can also help patients to consider their sleep patterns and learn more about their sleep hygiene practices, distractions, and interruptions. Upon completion of a sleep log for the requested period of time, the nurse can analyze the data for specific details and trends.

Day	Hours Slept																							
SUN	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
MON	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
TUE	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
WED	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
THUR	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
FRI	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
SAT	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8

FIGURE 28.7 A straightforward sleep log is shown here, with the patient logging the numbers of hours of sleep by highlighting the appropriate times each day. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

The National Institute of Health's National Heart, Lung, and Blood Institute offers a template for a much more comprehensive sleep log (https://openstax.org/r/77SleepLog) that incorporates most of the desired details listed. Add any items not included but important for particular patients.

Sleep Study

Polysomnography simultaneously records physiologic monitoring, including EEG for recording brain waves, ECG for the electrical cardiac cycle, EOG for recording eye movements, EMG for recording muscle movements, and SaO_2 (Figure 28.8). Monitoring leads for this recording are placed at locations on the scalp, face, eyelids, chest, and limbs, and a pulse oximeter is placed on a finger. Results display on a hypnogram and contribute to diagnosis of insomnia, sleep apnea, narcolepsy, somnambulism, and RLS.

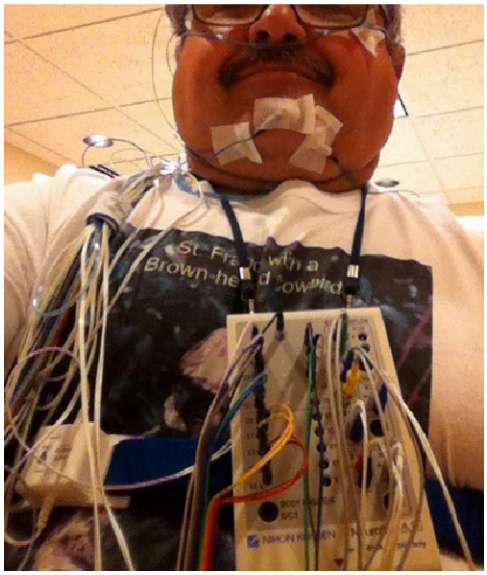

FIGURE 28.8 A patient demonstrates the setup for a sleep study: leads, wires, belts, and devices are in place for the polysomnogram. (modification of "All Hooked Up" by Tony Alter/Flickr, CC BY 2.0)

Depending on the complexity of the information desired, the sleep study may be done in a sleep center or with a portable system at home. Typically, the data are collected throughout a normal sleep session or at least over several hours. A sleep specialist, often a pulmonologist, reviews the results. The polysomnography carried out at the sleep

center is considered the gold standard. Advantages for the home test include fewer wires, leads, and devices, as well as sleeping in one's own bed; it is also more cost effective unless it ultimately leads to a follow-up inpatient sleep study.

LINK TO LEARNING

The various sleep data and their implications (https://openstax.org/r/77SleepData) are explained in this video.

Education to Encourage Good Sleep Hygiene Practices

Sleep disorders can range from simple to complex and can be acute or chronic. Treatment can be straightforward or may require a multipronged approach. For some people, creating or supporting good sleep hygiene is sufficient. Others may need extensive diagnostics and some combination of medications, therapy, and lifestyle modifications in order to establish efficient sleep patterns. Several practices contribute to good sleep hygiene, often relieving insomnia and other sleep-related issues. Certain beverages, such as herbal teas or warm milk, may foster sleep, with the caveat that drinking near bedtime may cause early arousals in order to void (Cherry, 2023; Cleveland Clinic, 2024). Routines, such as a warm bath, toothbrushing, and selection of sleep clothing, often support the sleep schedule, as the mind and body associate the habits and feelings with bedtime, rest, and sleep.

Maintain a Consistent Schedule for Sleep

Sleep schedule consistency can be important for sleep promotion. When activity and sleep schedules vary, it is more difficult for the body to maneuver between the two cycles and promptly establish restful sleep. Some people tend to stay up and get up later on days off, but this is actually counterproductive. It is better to set and maintain a consistent sleep schedule—the same bedtime and wake-up time every day, or at least approximately (Cherry, 2023; Cleveland Clinic, 2024). Sleep routines are personal, and different times and techniques may work for different people. It may take some time, and trial and error, to identify the "right way" for an individual to best prepare for sleep.

Establishing consistent lifestyle choices that promote sleep can also be helpful. This includes eliminating food and beverages (e.g., caffeine, alcohol) that cause wakefulness, or minimizing them to some hours prior to bedtime (Cherry, 2023; Cleveland Clinic, 2024). Creating a regular exercise routine is also helpful, as it produces a physical tiredness contributing to the overall desire and need for sleep. Other health benefits of exercise may add indirectly to sleep promotion and quality.

Incorporate a Relaxation Routine

Recall that sleep is closely associated with cycles of light and dark and circadian rhythms. Within these natural patterns, the release of chemicals assists with sleep (e.g., melatonin) and waking (e.g., cortisol). Working with these natural tendencies by limiting light at bedtime can help promote sleep. This can be especially helpful for those who work night shifts; investing in room-darkening blinds can provide a daytime environment of darkness and subsequent sleep promotion.

LIFE-STAGE CONTEXT

Let There Be Light!

Age-related changes to the brain can limit circadian rhythm function and disrupt an older adult's response to light and dark, thereby potentially causing problems with the sleep-wake cycles. Also, melatonin production tends to decrease with age. Nurses should ask patients about their sleep environments, whether they receive adequate exposure to natural light during the day, and if they reduce their light exposure before bedtime and overnight. Nurses can recommend patients turn television and lights off an hour before bed, use room-darkening blinds overnight, and, shortly after rising, open curtains and blinds or go outside to expose themselves to natural light at the time melatonin production normally begins (Casiraghi et al., 2021; Viganò et al., 2023).

Incorporating a relaxation routine can prove helpful for many patients. This may include one or a combination of

activities or techniques, including mellow sounds or music, reading, meditation, yoga, and intentional breathing (Nunez, 2020). Watching TV and using computers, cell phones, or tablets tends to stimulate rather than relax, and may even cause stress. The light from such devices is also counterproductive toward sleep. Again, the choice of method, and the amount of time needed, will be based on what works for a particular person, and it may change periodically over time.

LINK TO LEARNING

Although using an electronic device is not advised as part of a sleep routine, there are several applications and videos (https://openstax.org/r/77GetToSleep) available. The video portion can be disregarded and the device placed with no light visible, with only the audio playing as part of a bedtime routine.

Sustain a Temperature-Controlled Environment

Comfort during sleep is important, and temperature is one of those comforts. A cool room tends to be more conducive to falling and staying asleep. Maintaining a comfortable temperature for sleep may involve adjusting the thermostat or number of blankets, using a fan, or opening a window. Avoid temperature fluctuations in the bedroom.

Avoid Electronics Prior to Sleep

Electronics tend to be stimulating and, depending on the device and what is being done, may be stress-inducing or aggravating as well. The light from electronic devices such as cell phones, tablets, and computers can be distracting and can also make it more difficult to fall asleep. Even TV can make it more difficult to fall asleep. Allow some time before bedtime to be electronics-free, to enhance the transition from wakefulness to sleep (Nunez, 2020; Suni, 2024). Although notifications on some electronic devices can be silenced, for some people that may not be possible based on employment or family obligations and expectations. When possible, turning off devices is best, but putting them away from the sleeping area may be a viable alternative. Nurses teaching patients and families about sleep schedules and relaxation routines can guide their audience to a healthful and helpful transition time from stimulation and activity to quiet and rest.

Medication Administration for Sleep

Safe medication administration is a critical goal for nurses. Nurses need to know the different types of drugs used to promote sleep and their classifications, which are typically based on their MoA, or how a particular drug works. Other necessary information includes the reason the patient has been prescribed the drug, dosages for different uses, routes for administration, potential positive and negative side effects, possible adverse effects, and potential drug-to-drug, and/or drug-to-herbal interactions.

Medications to promote falling asleep and/or staying asleep are available over-the-counter (OTC) and by prescription. Patients may also take herbal remedies to help sleep as well. The common OTC choice for sleep are antihistamines, because drowsiness is a side effect of first-generation antihistamines. Other drugs are categorized as sedatives and/or hypnotics.

REAL RN STORIES

Mixed Methods

Nurse: Margaret, RN
Clinical setting: ICU
Years in practice: 1
Facility location: ICU in suburban area near Denver

I was taking care of one of my first postoperative patients who had open-heart surgery. He was having a fair bit of pain and hadn't been able to sleep, so after I bathed him, I thought about how to make him comfortable enough to rest. He certainly should have been tired enough to sleep. The surgeon's orders included the following:

- Morphine sulfate 4 mg every 6 hours intramuscular injection (IM) for pain. May be given intravenously (IV) in

divided doses.
- Hydroxyzine 50 mg IM PRN for sleep.

After four hours caring for the patient, I had given him a few of the IV divided doses of morphine and felt confident administration of the two drugs at the same time would not adversely affect the patient's respiratory status. I wanted to administer the two drugs in one syringe. I called pharmacy to review the order and dosages. Pharmacy verified the two drugs could be combined in the same syringe, but while the morphine could be given by IM or IV route, the hydroxyzine was limited to the IM route. All the more reason for using just one syringe, as this way the patient would only need one IM injection. The meds were given, and with his pain under control, the patient slept for a couple of solid hours, even sleeping through me going in and out of the room making sure all was well.

Safe Medication Administration

Medication administration is a major part of nursing care, and its accurate implementation is a critical component of patient safety (MacDowell et al., 2021). Like any medications, those prescribed to help with rest and sleep are prone to adverse drug events (ADEs) at different steps in the administration process. As part of the larger medical system, nurses must be vigilant in avoiding interruptions while giving medications, using safety measures such as barcode scanning of patients and drugs, and having a high level of knowledge of the drugs being administered (MacDowell et al., 2021).

Safe dosage incorporates the original five rights: right patient, medication, dose, time, and route. A nurse's understanding that medications prescribed for sleep-related issues work in various ways with the CNS, with the potential for interactions with certain other drugs (e.g., opioid pain medications), is critical to maintain safe patient care. Table 28.7 provides examples of drugs, a brief description of how they work, typical dosage for sleep, common side effects, and concerning potential adverse effects. Check a reliable, current nursing drug resource for new updates. Also, be aware of the individuality of patient responses, and do not underestimate the importance of assessment and evaluation in nursing care.

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
Benzodiazepines	Lorazepam (Ativan)	Enhances GABA	2–4 mg PO at bedtime	• Drowsiness • Respiratory depression • Nausea/ vomiting/ diarrhea	• Severe sedation, respiratory depression possible if combined with other drugs with CNS depressant actions (e.g., opioids, other sedatives, muscle relaxants) • ECG changes; cardiac arrest potential • Paradoxical effects are possible
	Temazepam (Restoril)		15–30 mg PO at bedtime		
	Triazolam (Halcion)		0.125–0.25 mg PO at bedtime		

TABLE 28.7 Drugs to Promote Sleep (Sources: Drugs.com, 2024; PDR, 2024; Memorial Sloane Kettering Cancer Center, 2024.)

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
Nonbenzodiazepines	Eszopiclone (Lunesta)	Interacts with GABA receptors	1–3 mg PO at bedtime (start with small dose)	• Hallucinations • Headache • Rash • Dry mouth • Taste changes	• Parasomnias • Cognitive/ behavioral changes • Chest pain • Peripheral edema
	Ramelteon (Rozerem)	Melatonin agonist	8 mg PO at bedtime	• Dizziness • Headache • Nausea/ vomiting/ diarrhea	• Parasomnias • Suicidal thoughts/ behaviors • Angioedema • Insomnia
	Suvorexant (Belsomra)	Orexin A & B antagonist	10–20 mg PO at bedtime	• Dose-related CNS depression • Hypersomnia • Hallucinations	• Parasomnias • Increasing depression • Suicidal ideation
	Zaleplon (Sonata)	Binds to GABA receptors	10 mg PO at bedtime; 5 mg if > 65 or of a lighter weight	• Dizziness • Impaired movement • Vision changes	• Nightmares • Peripheral edema • Epistaxis • Colitis • Dyspepsia • Vertigo
	Zolpidem (Ambien)	Binds to GABA receptors	Women: 5 mg PO, SL, or spray at bedtime (may increase to 10 mg if lower dose not effective) Men: 5–10 mg PO, SL, or spray at bedtime	• Hypersomnia • Dizziness • Hallucinations • Amnesia • Nausea/ vomiting/ • diarrhea	• Parasomnias • Cognitive/ behavioral changes • Hypersensitivity (anaphylaxis *Note: Parasomnias with these drugs may include complex sleep behaviors such as sleep walking, driving, or shopping.*

TABLE 28.7 Drugs to Promote Sleep (Sources: Drugs.com, 2024; PDR, 2024; Memorial Sloane Kettering Cancer Center, 2024.)

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
Antihistamines	Diphenhydramine (Benadryl) *Note: Diphenhydramine is packaged alone or combined with OTC analgesics (acetaminophen, ibuprofen).*	Histamine antagonist at H1 receptors	1 mg/kg PO 20–30 minutes before bedtime; not to exceed 50 mg	• Dizziness • Headache • Anorexia • Dry mouth	• Hypotension • Palpitations • Chest tightness • Dysuria, urinary frequency or retention • Paradoxical effects • Delirium *Note: Adverse effects are more likely in older adults. Not recommended for sleep in those over 60.*
	Hydroxyzine (Atarax, Vistaril) *Note: Hydroxyzine for insomnia is an off-label use.*	Subcortical CNS depression; competes with H1 receptor sites	50–100 mg PO 30–60 minutes before bedtime 50 mg IM 30–60 minutes before bedtime	• Dizziness • Headache • Dry mouth • Increased appetite • Nausea/ diarrhea	• Seizures • Depression • Hypotension
Herbal	Kava kava	Alters emotions at limbic system; anxiolytic, sedation effects.	*Herbals are not FDA approved and dosages are not definitively determined*	• Headache • Weight loss • Vision changes • Pupillary dilation	• Sensory disturbances • Hepatotoxicity • Extrapyramidal symptoms • Possible increased suicidal risk • Decreased platelets • Muscle weakness

TABLE 28.7 **Drugs to Promote Sleep** (Sources: Drugs.com, 2024; PDR, 2024; Memorial Sloane Kettering Cancer Center, 2024.)

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
	Melatonin	Synthesized from tryptophan and serotonin to help induce sleep		• Dizziness • Headache • Nausea	• Hives • Angioedema
	Valerian	May increase GABA		• Headache • Dry mouth	

TABLE 28.7 Drugs to Promote Sleep (Sources: Drugs.com, 2024; PDR, 2024; Memorial Sloane Kettering Cancer Center, 2024.)

Examples of stimulant drugs used for treatment of hypersomnolence are shown in Table 28.8 with a brief description of how they work, typical dosage for sleep, common side effects, and concerning potential adverse effects.

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
Stimulants	Caffeine	Stimulates the CNS	Do not exceed 400 mg/day	• Agitation • Headache • Upset stomach	• Seizures, coma • Difficulty breathing • Muscle twitching • Decreased urine output
	Methylphenidate (Ritalin, Concerta)		20-30 mg PO in 2-3 divided doses, 30-45 minutes before meals.	• Anorexia • Stomach upset or pain • Vomiting	• Agitation • Confusion • Fever • Tachycardia • Chest pain • Hives

TABLE 28.8 Drugs to Treat Hypersomnolence (Source: Drugs.com, 2024.)

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
	Amphetamine (Evekeo)		5–60 mg/day PO in divided doses (Start with lowest effective dose & adjust for individual.)	• Dry mouth • Anorexia • Stomach upset	• Agitation • Anxiety • Bladder pain/cloudy or bloody urine/ urinary frequency changes • Mood changes • Feeling of detachment/ unreality • Emotional lability
	Amphetamine/ dextroamphetamine (Adderall)		10 mg/day PO in divided doses (May be increased weekly by 10 mg until desired effect is reached.)	• Dry mouth • Weakness • Stomach pain	• Anxiety • Bladder pain/cloudy or bloody urine/ urinary frequency changes • Tachycardia • Palpitations

TABLE 28.8 **Drugs to Treat Hypersomnolence** (Source: Drugs.com, 2024.)

Drug Class	Example Drug	MoA	Adult Dose & Route	Side Effects	Adverse Effects
	Armodafinil (Nuvigil)		150–250 mg/day PO in a.m.	• Anorexia • Stomach upset • Cough • Thirst • Sweating • Feelings of sadness/illness	• Vision changes • Chest pain • Dyspnea • Feeling unsteady/fainting • Confusion • Mood changes • Uncontrolled face or mouth movements
	Modafinil (Provigil)		200 mg/day PO in a.m.	• Headache • Nausea • Nervousness • Anorexia	

TABLE 28.8 **Drugs to Treat Hypersomnolence** (Source: Drugs.com, 2024.)

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Combining Compatible Drugs

Disclaimer: Always follow the agency's specific policy and procedure for medication administration.

Definition: Reduces risk for harm to patients.

Knowledge: The nurse will use strategies to support safe medication administration through multiple means.

Skill: Use strategies, such as interdisciplinary collaboration, to maintain current best practice, accuracy, and safety. The nurse will:

- Not rely entirely on memory in preparation for medication administration (e.g., dose, route, time to onset).
- Consult with interdisciplinary partners' written or electronic resources to review current practice regarding medication compatibility and administration.

Attitudes: Understand the limits of human memory and abilities.

Education on Risks

The effects of medications to induce or foster sleep can have significant effects on the central nervous system. Therefore, nurses need to perform frequent assessments and reassessments relative to effectiveness and results. Nurses can be key players in providing education for patients as they consider or begin a new drug. As indicated, CNS effects can be as serious as seizures, hallucinations, and parasomnias. Cardiovascular and respiratory problems also may accompany some of the drugs, and renal function may be affected. Nurses should anticipate laboratory tests for organ function. Allergic reactions, such as angioedema and anaphylaxis, can be life-threatening, and patients should be educated about these potential reactions, including signs and symptoms of their presentation. For more on patient education, see Chapter 17 Patient and Family Education.

PATIENT CONVERSATIONS

Benadryl for Sleep

Scenario: A patient, Reginald Washington, age 78, has been having trouble sleeping and calls and asks the nurse, Melissa, about using Benadryl, since there is some in the medicine cabinet at home. The nurse is concerned about this medication for Mr. Washington because it has a high risk of causing undesired effects in those over 60.

Nurse: Mr. Washington, I guess you've been having some trouble sleeping?

Patient: Yes, Melissa. I haven't slept well for a few weeks now. It makes me feel fuzzy during the day to be so tired.

Nurse: Feeling that way is pretty common if you're not sleeping well. You asked about using Benadryl.

Patient: Yes, my wife used it about a year ago, and it really helped her. So I thought I'd check because I'm on a blood pressure medicine.

Nurse: I'm very glad you asked about it. I'm not so concerned about the blood pressure medicine, but diphenhydramine, which is the drug you know as Benadryl, is not recommended for people over 60 years old.

Patient: Oh, really? I guess my wife shouldn't have taken it.

Nurse: True. I guess she didn't have problems.

Patient: No, she was fine. And she slept well.

Nurse: Some people, even over 60, have no issues. But it is on a list of risky medications for older adults because it can make the side effects worse, leading to adverse outcomes. Some people experience delirium or become more confused. I think we should check with your doctor to see what is recommended for you.

Patient: Oh, okay.

Nurse: I'll check and call you back to let you know what is safer to help you sleep.

Patient: That sounds like a good idea.

Summary

28.1 Concepts of Sleep and Rest

Like breathing, sleep seems simple and automatic, but the physiological processes involved in sleep involve coordination of multiple body systems and complicated neurological and physical responses. Originating in the brain stem, and involving other regions of the neurological system, sleep is influenced by factors such as circadian rhythms. Although a person is unaware of much of what happens during sleep, there are four stages that occur in cycles throughout the hours of sleep.

For those whose sleep is uninterrupted, they experience stage I sleep just once as they fall asleep. They then continue through multiple cycles in a predictable fashion every 90 to 110 minutes, until awakening. Throughout the human life span, there are changes in sleep patterns and how they progress through sleep cycles. There are also developmental alterations regarding the amount of sleep necessary at different life stages, with neonates experiencing a slightly different sleep before circadian rhythms are established, and spending most of a twenty-four-hour day sleeping. Sleeping needs of adults tend to be only seven to nine hours. The amounts of sleep within the different stages also change throughout the life span, as the neurological system develops and various other factors influence growth and development.

28.2 Factors Affecting Sleep and Rest

Many things can affect the quality and quantity of sleep and rest. This section covered physiological considerations affecting sleep and rest, including growth and development, illness, and medications. Lifestyle, habits, and culture also affect sleep. Sedentary lifestyles tend to lead to poor quality and quantity of sleep. Activity and exertion contribute to physical fatigue, which helps the body ready itself, and have a need for, rest and sleep. Choices, such as caffeine, nicotine, and alcohol use, which easily become habitual, have negative effects on sleep, with nicotine having some of the most significant effects. Stress, and its associated physiological responses, tends to cause problems falling asleep or staying asleep. The section also explored several sleep disorders, including insomnia, parasomnias, and breathing and movement disorders.

28.3 Effects of Insufficient Sleep

Insufficient sleep has the potential to cause several psychophysiological effects. For neonates and children, neurological changes can be significant because sleep affects growth and development. Lack of sleep is also a frequent contributor to behavioral and certain mental health concerns. Performance deficits may be apparent at school or in family interactions through the inability to pay attention or remember certain things, in development of intelligence, and in academic accomplishments. Physiologically, sleep increases the pediatric risk for obesity and other related metabolic disorders.

Many of the same issues affecting children who do not achieve adequate sleep affect adults. Poor coping and various mental health diagnoses, including anxiety, mood lability, impaired focus, and memory, can be related to inadequate sleep. Physiologically, results of insufficient sleep show up in gastrointestinal, cardiovascular, metabolic, and immune symptoms and disorders. Lack of sleep and related disorders tend to have bidirectional relationships, making it difficult in some situations to identify whether the insufficient sleep caused the diagnosis or the diagnosis contributed to the poor sleep.

28.4 Nursing Care to Promote Sleep and Rest

Nursing assessment plays an important role in assisting patients with sleep disturbances. Gathering key information through health history, sleep logs, and effects of insufficient sleep on the patient's well-being is necessary for the multidisciplinary team to plan and implement next steps. One of the first strategies for patients who experience poor sleep is to explore their sleep hygiene practices. Nurses can help by providing education as to how to improve sleep hygiene through various means. Medications are sometimes helpful for patients to fall asleep and/or stay asleep. Safety is critical. Again, education is vital, so nurses should help patients to understand risks of these medications and their interactions with any other drugs.

Key Terms

alpha wave a fast wave as seen on an EEG, associated with the first part of falling asleep

anxiolytic a type of drug that reduces anxiety
beta amyloid a peptide implicated in development of Alzheimer disease
biphasic sleep pattern a sleep pattern with two sleep sessions per day
cataplexy muscle weakness
circadian rhythm the biological rhythm associated with metabolism, temperature, sleep, and wakefulness
delta wave EEG brain wave that is slower with higher amplitude
dyslipidemia abnormal blood lipids
electroencephalogram (EEG) a linear tracing of the electricity of brain waves
enuresis urination during sleep
glymphatic system a body system involved in the regulation of interstitial fluid movement and subsequent removal of waste from the brain and CSF
hyperlipidemia elevated blood lipids
hypersomnolence excessive feelings of fatigue and sleepiness, or episodes of sleep during normal times to be awake
hypnogram a graph representing a person's sleep architecture
K-complex EEG delta wave lasting approximately one second each
mechanism of action (MoA) how a particular drug works
monophasic sleep pattern a sleep pattern involving one major block of time allocated for sleep
narcolepsy a sleep disorder involving episodes of daytime sleep
non-rapid eye movement (NREM) the three stages of sleep not characterized by eye movement
parasomnia an abnormal behavior while a person is asleep
polyphasic sleep pattern a sleep pattern including several sleep sessions in a twenty-four-hour period
polysomnography a sleep study incorporating different physiologic monitors
rapid eye movement (REM) the sleep stage characterized by the speed of eye movements and vivid, unbelievable dreams
reticular activating system (RAS) a crucial neural network in the brainstem responsible for regulating arousal, attention, and consciousness
seasonal affective disorder (SAD) a form of depression related to lack of light
sleep architecture an individual's sleep patterns
sleep hygiene sleep habits
sleep inertia slowed thought processing related to lack of sleep
sleep log a written collection of sleep-related information, including hours slept daily
sleep spindle a short, intermittent burst of neurological activity, seen on an EEG
slow-wave sleep (SWS) a sleep stage typified by the slower delta waves seen on an EEG
somnambulism sleepwalking
tau a protein associated with the development of Alzheimer disease
theta wave an EEG wave that is fast and has variable frequencies

Assessments

Review Questions

1. A patient describes frequent dreams in which he is able to fly. The nurse recognizes such fanciful dreams as happening during what sleep stage?
   a. stage I
   b. stage II
   c. stage III
   d. REM

2. What hormone is associated with opening the "sleep gate"?
   a. cortisol
   b. epinephrine
   c. melatonin
   d. oxytocin

3. An adult typically spends the majority of a night's sleep in what sleep stage?
    a. stage I
    b. stage II
    c. stage III
    d. REM

4. The reticular activating system (RAS) controls what aspect of sleep?
    a. length of time in REM
    b. fast and slow waves
    c. different sleep stages
    d. developmental changes

5. A person who splits their sleep into a major overnight period for six hours and a three-hour nap is implementing what sleep pattern?
    a. monophasic
    b. biphasic
    c. triphasic
    d. polyphasic

6. A patient tells the nurse nightmares began after starting to take diphenhydramine to sleep. The nurse explains what side effect as the likely cause of the nightmares?
    a. drug hangover
    b. REM rebound
    c. tolerance
    d. dependence

7. A nurse is reviewing lifestyle recommendations to promote sleep with a patient who has been experiencing insomnia. What recommendation about timing moderate exercise will the nurse include?
    a. "Exercise just before bedtime is good, because exercise is always beneficial."
    b. "Drink three eight-ounce glasses of water and exercise an hour before bedtime."
    c. "Avoid exercise within five hours of bedtime, so you're tired but not stimulated."
    d. "You should only exercise in the morning if you want to sleep well at night."

8. A parent describes a child having episodes of screaming at night. When the parent arrives at the bedside, the child is sitting up, eyes are dilated, and the child's heart is racing. The nurse will prepare to teach the parent and child about what sleep disorder?
    a. nightmares
    b. sleep paralysis
    c. somnambulism
    d. night terrors

9. Neonates fall asleep into what stage of sleep?
    a. stage I
    b. stage II
    c. stage III
    d. REM

10. A patient who experiences several episodes of falling asleep during the day is experiencing what sleep problem?
    a. insomnia
    b. sleep apnea
    c. hypersomnia
    d. sleep paralysis

11. An 11-year-old patient is seen by the pediatrician for chronic insomnia and slowed growth. What other clinical presentation does the nurse anticipate may be related to the child's poor sleep?
   a. a very peaceful affect
   b. a short ability to concentrate
   c. an ease with problem-solving
   d. advanced reading skills

12. An 8-year-old child who has not slept more than five hours per night for a year has gained twenty pounds during that time. What finding does the nurse conclude is also sleep-related?
   a. hypotension
   b. a four-inch growth spurt
   c. dyslipidemia
   d. low total cholesterol

13. What hormone is least likely to impair gastrointestinal homeostasis?
   a. ghrelin
   b. melatonin
   c. leptin
   d. calcitonin

14. A nurse is reviewing a patient's recent examination and laboratory results. What combination does the nurse determine to be associated with metabolic syndrome?
   a. hyperglycemia, low HDL, elevated triglycerides
   b. obesity at the hips, high HDL, low triglycerides
   c. hypoglycemia, low HDL, high triglycerides
   d. abdominal obesity, high HDL, hyperglycemia

15. The NSF recognizes how many hours of sleep in the previous twenty-four hours as likely impairing a person's driving ability?
   a. two hours
   b. three hours
   c. six hours
   d. eight hours

16. A nursing instructor corrects a student for suggesting what as a component of good sleep hygiene?
   a. Listen to peaceful forest sounds at bedtime.
   b. Read from an electronic tablet before bed.
   c. Follow a planned time for bed and rising.
   d. Use the same bedtime steps every night.

17. A patient asks which electrical monitoring will record the classic rapid eye movements of REM sleep; the nurse should provide what reply?
   a. electrocardiogram (ECG)
   b. electromyelogram (EMG)
   c. electrooculogram (EOG)
   d. electroencephalogram (EEG)

18. OTC drugs prescribed as sleep aids work by what mechanism of action?
   a. improve the action of GABA
   b. antagonists to orexin A&B
   c. melatonin agonist effects
   d. inhibit action of histamine 1

19. The nurse explains to a patient that there is a major concern for combining opioid pain medication with benzodiazepines for what reason?
    a. increasing respiratory depression
    b. developing somnambulism
    c. worsening anorexia
    d. potential for nightmares

20. A patient asks the nurse about advantages for doing a home sleep study instead of staying at the sleep lab. What answer should the nurse include?
    a. The sleep center staff will wake you frequently.
    b. You will probably feel able to move more freely.
    c. You will be limited in sleeping positions.
    d. The home monitor is more accurate than at the lab.

Check Your Understanding Questions

1. Describe why a patient who is awakened numerous times in the first few hours of sleep does not feel rested the following day?
2. A patient has been diagnosed as having narcolepsy type I. Describe at least three characteristics of this central sleep disorder.
3. Sleep insufficiency can result in various physiologic disorders. Name two body systems that may be adversely affected by lack of sleep, and provide an example for each.
4. Explain the value of including the patient's medications and time of administration on a sleep log.

Reflection Questions

1. Consider your own sleep patterns: if you frequently awaken from a dream, is it realistic or fantastic? Which sleep stage is indicated by these types of dreams?
2. Reflect upon times you have felt stressed. Explain at least two physiologic symptoms you experienced, and whether your sleep was impacted.
3. Consider the relationship between healthy eating habits and sleep, and whether any of these are common among students of university age. Explain why you know (from experience) or suspect your conclusions.
4. Review your bedtime routine and describe whether your sleep hygiene practices support or hinder quality sleep.

What Should the Nurse Do?

1. A first-grader's parents visit the pediatrician's office to discuss daily sleepiness interfering with school, including difficulty concentrating, irritability, and dozing off during class. The nurse asks about sleeping habits, and the parents describe it is difficult to get the child to sleep before 11:00 p.m.; they don't understand what is happening. What should the nurse do?
2. A patient describes having difficulty falling asleep, and waking several times each night. The patient's electronic health record indicates the patient smokes a pack of cigarettes daily and has for ten years. To help the patient improve sleep habits, what should the nurse do?
    a. Insist the patient should quit smoking immediately.
    b. Advise the patient to avoid smoking within two hours of bedtime.
    c. Suggest the patient reduce cigarette smoking to a half-pack per day.
    d. Recommend the patient drink warm milk an hour before bedtime.

An adult patient describes problems with distorted depth perception and difficulty seeing distances. Less than a week ago, the patient's optometry examination was normal.

3. What hypothesis might the nurse have as to what is happening to this patient?

4. What should the nurse do?
5. A patient with a history of hepatitis is planning to begin taking kava kava to improve sleep. What should the nurse do?

Competency-Based Assessments

1. Circadian rhythms support the natural changes that help a person fall asleep, and stay asleep. Do some research and describe how light and darkness may have contributed to early human history and sleep patterns.
2. Write a paragraph (up to fifty words) describing symptoms of obstructive sleep apnea (OSA).
3. Read this information about drowsy driving (https://openstax.org/r/77TeenDrowsyDrv) and teens. Create a one-page flyer with key information for an audience of high school students.
4. Select one of the nonbenzodiazepine medications for sleep, and describe the possible adverse effects of the drug in layman's terms so a patient with minimal medical knowledge will understand.
5. You are interviewing a 55-year-old male patient who was recently diagnosed as having obstructive sleep apnea. He says he does not sleep well at all and is very sleepy during the day, which worries him. Use the Epworth Sleepiness Scale (ESS) Questionnaire (https://openstax.org/r/77Epworth) with the following information from your patient:
    - "I fall asleep while reading or watching TV almost as soon as I sit down. But if I lie down to nap, sometimes I have trouble dozing off. The exception is right after lunch—boy I can fall asleep at my desk after lunch!"
    - "I'm worried I might lose my job, because the other day I fell asleep in a meeting at work. I have to get up and walk around at work often or I'll doze off in the middle of a conversation."
    - "If I'm driving, I don't get sleepy in the car, but if someone else is driving, I'm asleep in minutes!"

    What is your patient's total score?

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CHAPTER 29
Sensory Alterations

FIGURE 29.1 Impaired sensory perception can have negative effects on one's health. (credit: "Eye see you" by Airman First Class Antoinette Lyons/U.S. Air Force, Public Domain)

CHAPTER OUTLINE

29.1 Sensory Functioning
29.2 Impaired Sensory Function
29.3 Factors Affecting Sensory Function

INTRODUCTION Imagine a world without the ability to hear the laughter of loved ones, the soothing melodies of music, or the gentle whispers of nature. Without the gift of sight, the vibrant colors of a sunset, the intricate details of a loved one's face, and the breathtaking beauty of a starry sky would remain hidden from view. Deprived of the sense of smell, the ability to savor the aroma of freshly brewed coffee, the fragrance of blooming flowers, and the comforting scent of home-cooked meals would be lost. Similarly, a world without taste would deprive the joy of savoring delicious flavors, indulging in culinary delights, and experiencing the richness of diverse cuisines. Last, without the sense of touch, one would miss out on the warmth of a comforting hug, the sensation of soft silk against one's skin, and the joy of holding hands with a loved one. Each sensory modality contributes to our perception of the world and enriches our lives in profound ways, emphasizing their immense importance in our daily existence, as well as highlighting the significant impact of impairment on individuals' sensory experiences and overall quality of life.

29.1 Sensory Functioning

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize the function of sensory perception in the body
- Recall the function of the reticular activating system
- Identify the different states of arousal of the brain

Understanding the function of sensory perception in the body is fundamental to comprehending how individuals perceive and engage with their surrounding environment. While navigating through diverse environments, individuals' sensory systems consistently receive and process information, enabling them to effectively interpret and respond to stimuli. Additionally, the **reticular activating system (RAS)** serves as a neural network in the brain stem responsible for regulating arousal, attention, and the consciousness network of neurons located in the brain stem that extends from the medulla oblongata to the midbrain. By identifying the different states of arousal of the brain, insight is gained into the complex mechanisms underlying cognitive processes and behavioral responses. Within this section, the intricacies of sensory perception and the role of the RAS in modulating arousal are explored, providing a comprehensive understanding of these essential aspects of human physiology. Through exploration of these topics, the aim is to enhance knowledge of sensory function and its implications for overall health and well-being.

Sensory Perception

The process by which organisms gather information from the environment through the senses (such as sight, hearing, touch, taste, and smell) and interpret and make sense of that information is called **sensory perception**. It involves the reception, transmission, and interpretation of sensory stimuli, allowing individuals to understand and interact with their surroundings. It encompasses the complex processes through which sensory information is detected, processed, and interpreted by the nervous system to create meaningful perceptions of the environment. Each sensory modality, including hearing, vision, smell, taste, and touch, plays a unique role in providing individuals with valuable information about their surroundings, guiding behaviors, and shaping experiences. Through sensory perception, individuals are able to detect and respond to stimuli ranging from light and sound to temperature, pressure, and chemical cues, allowing for adaptive interactions with the external world. Moreover, sensory perception plays a vital role in guiding behaviors, shaping experiences, and facilitating adaptive responses to environmental changes.

Senses

The physiological mechanisms by which organisms perceive and respond to stimuli from their environment are referred to as **senses**. Each sense occupies a distinct role, contributing to a comprehensive understanding of our environment. Vision allows one to perceive the world in terms of shapes, colors, and spatial relationships, providing essential information for navigation and object recognition. Hearing enables individuals to detect and interpret sound waves, facilitating communication and alerting to potential dangers in one's surroundings. Smell and taste add richness to the sensory experience, influencing dietary choices, emotional responses, and memories. The sense of touch provides critical information about texture, pressure, and temperature, guiding interactions with objects and the physical environment. Collectively, these senses construct a sensory network that influences our perceptions, emotions, and engagements with the surrounding environment.

Auditory

The sense of hearing is primarily facilitated by **auditory sensory perception**, the process by which the auditory system receives, transmits, and interprets sound stimuli from the environment. It initiates with the reception of sound waves by the outer ear, composed of the pinna and the ear canal, which collectively funnel sound waves toward the tympanic membrane (eardrum). On contact, the eardrum vibrates, converting sound energy into mechanical vibrations transmitted through the ossicles (bones) in the middle ear—the malleus, incus, and stapes. These ossicles amplify and relay vibrations to the cochlea, a fluid-filled structure in the inner ear. Within the cochlea, the fluid motion stimulates hair cells, specialized sensory receptors, initiating cochlear transduction. Hair cells convert mechanical energy into electrical signals, which travel along the auditory nerve to the brain stem and ascend to the auditory cortex in the temporal lobes for processing. In the brain, these electrical signals are interpreted, allowing the perception and understanding of sound, including recognizing pitch, volume, and the spatial location of sounds (National Institute on Deafness and Other Communication Disorders, 2022).

Visual

The interpretation of light stimuli and the formation of visual perceptions are enabled by **visual sensory perception**, the process by which the visual system detects, interprets, and makes sense of visual stimuli. It begins with the eyes, where light enters through the cornea and passes through the pupil, which regulates the amount of light entering the eye. The lens then focuses the light onto the retina, a light-sensitive layer at the back of the eye. The

retina contains photoreceptor cells known as rods and cones, which convert light energy into electrical signals. Rods are responsible for low-light vision and peripheral vision, while cones detect color and fine detail in brighter conditions. These electrical signals travel along the optic nerve to the brain's visual processing centers, including the primary visual cortex located in the occipital lobes (Dana Foundation, 2023). Here, the brain processes the signals, interpreting them to form visual perceptions such as shapes, colors, and motion (STAR Institute, n.d.). Additionally, the brain integrates visual information with input from other sensory modalities to construct a cohesive representation of the external world. Visual perception plays a crucial role in tasks ranging from recognizing faces and objects to navigating the environment and interpreting complex visual stimuli.

Olfactory

The ability to detect and interpret smells using the olfactory system is called **olfactory sensory perception**. The process begins with the olfactory epithelium, a specialized tissue located in the upper part of the nasal cavity. This epithelium contains millions of olfactory receptor cells, each equipped with odorant receptors that can detect various odor molecules. When airborne odorants enter the nasal cavity during inhalation, they dissolve in the mucus lining the olfactory epithelium and bind to specific odorant receptors on the olfactory receptor cells. This binding triggers a series of biochemical signals, leading to the generation of electrical impulses that are transmitted along the olfactory nerve fibers to the olfactory bulb, a structure at the base of the brain (Sharma et al., 2019). Within the olfactory bulb, these electrical signals are processed and relayed to higher brain regions, including the olfactory cortex, where they are further analyzed and interpreted (STAR Institute, n.d.). The brain integrates olfactory information with input from other sensory modalities, memories, and emotions to create a rich and complex olfactory experience. Olfactory perception enables individuals to detect and identify a wide range of odors, including those associated with food, danger, social cues, and emotional responses (STAR Institute, n.d.). Additionally, the sense of smell plays a significant role in taste perception, as it contributes to the flavor of foods by detecting volatile compounds released during eating.

Gustatory

The ability to detect and interpret tastes using the gustatory system is called **gustatory sensory perception**. The process of gustation begins with taste receptor cells located within specialized structures called taste buds, which are primarily found on the tongue, soft palate, and throat. These taste buds contain various types of taste receptor cells that can detect five primary tastes: sweet, sour, salty, bitter, and umami (savory) (Vincis & Fontanini, 2019). When food or drink enters the mouth, molecules from the substances dissolve in saliva and come into contact with the taste receptor cells within the taste buds. This triggers a cascade of biochemical signals that result in the generation of electrical impulses, which are transmitted along the gustatory nerve fibers to the brain stem and then to higher brain regions, including the gustatory cortex. In the brain, these electrical signals are processed and integrated with input from other sensory modalities, such as olfaction (sense of smell), texture, temperature, and even visual cues, to create the perception of flavor. Gustatory perception enables individuals to distinguish between different tastes, assess the palatability and quality of foods, and make dietary choices based on preferences and nutritional needs. Additionally, the sense of taste plays a crucial role in the regulation of appetite and digestion as well as in the enjoyment and social aspects of eating.

Tactile

The ability to detect and interpret touch sensations is called **tactile sensory perception**. The skin, the body's largest organ, contains various types of sensory receptors that detect mechanical stimuli such as pressure, vibration, temperature, and pain. These receptors are distributed throughout the skin's surface, providing comprehensive coverage and sensitivity to tactile stimuli across the body. When an object or surface comes into contact with the skin, mechanical forces are applied, leading to deformation of the skin and activation of the sensory receptors. These receptors generate electrical signals in response to the mechanical stimuli, which are transmitted via sensory nerves to the spinal cord and then relayed to the brain. In the brain, these electrical signals are processed and integrated in various regions of the somatosensory cortex, enabling the perception and interpretation of tactile sensations such as texture, pressure, temperature, and pain (Jenkins & Lumpkin, 2017). Tactile perception plays a crucial role in numerous aspects of daily life, including object recognition, manual dexterity, spatial awareness, and social interactions. It allows individuals to navigate their environment, manipulate objects, and communicate through gestures and touch. Furthermore, tactile sensory perception contributes to emotional experiences, such as comfort, pleasure, and pain, and serves as a fundamental aspect of human connection and communication.

LINK TO LEARNING

Watch this video to further review the anatomy and physiology of the five senses (https://openstax.org/r/77fivesenses) of the body.

Orientation of Senses

Complementing the five primary senses, **kinesthetic sense**, also known as a **proprioceptive sense**, and **visceral sense**, also known as an **interoceptive sense**, provide vital feedback about the body's internal state and movements, further enriching the sensory experience. Kinesthetic senses provide feedback about one's body movement, position, and tension, allowing for coordinated motion and balance. Meanwhile, visceral senses offer insight into internal bodily functions, guiding one's responses to physiological needs and states such as hunger, thirst, and discomfort. Collectively, these sensory orientations contribute to a comprehensive understanding of oneself and one's engagement with the world, influencing behaviors, emotions, and overall well-being.

Kinesthetic Senses

The kinesthetic senses play a crucial role in body awareness and movement control. These senses provide feedback about the position, movement, and tension of muscles and joints, allowing individuals to coordinate their movements and maintain balance and posture. Specialized sensory receptors located in muscles, tendons, and joints, known as **proprioceptors**, detect changes in muscle length, tension, and joint position, providing continuous feedback to the brain about the body's position in space (STAR Institute, n.d.). This proprioceptive feedback is essential for activities requiring precise coordination and motor control, such as walking, running, reaching, and grasping objects. Additionally, proprioception contributes to the sense of body ownership and self-awareness, enabling individuals to distinguish between their own body and external objects. Dysfunction or impairment of kinesthetic senses can lead to difficulties with movement, coordination, balance, and motor skills, affecting activities of daily living and increasing the risk of injury.

Visceral Senses

The visceral senses are responsible for detecting and monitoring internal body sensations such as hunger, thirst, pain, and visceral organ function. These senses provide feedback about the physiological state of the body, helping regulate essential bodily functions and maintain homeostasis. Specialized sensory receptors located in organs such as the stomach, intestines, and heart detect changes in temperature, pressure, and chemical composition, signaling the brain to initiate appropriate responses (Engelen et al., 2023). Visceral sensations play a vital role in guiding behaviors related to survival and well-being, such as eating, drinking, and responding to pain or discomfort. Additionally, visceral sensory input is integrated with emotional and cognitive processes, influencing mood, motivation, and decision-making. Dysfunction of visceral senses can lead to disturbances in appetite regulation, gastrointestinal disorders, and altered perception of bodily sensations, impacting overall health and quality of life.

Reticular Activating System

The reticular activating system (RAS) serves as a crucial neural network in the brain stem responsible for regulating arousal, attention, and consciousness. It plays a crucial role in regulating wakefulness, arousal, and consciousness. The RAS acts as a filter for sensory information, determining which stimuli are relayed to higher brain centers for further processing. Dysfunction of the RAS can lead to disruptions in arousal states, manifesting as conditions such as **coma** (an extreme form of unconsciousness, where individuals are in a profound state of unresponsiveness and lack awareness of their surroundings, typically resulting from severe neurological injury or dysfunction), attention deficit disorders, and sleep disturbances (Arguinchona & Tadi, 2023). The proper functioning of the RAS is essential for maintaining wakefulness, arousal, and consciousness.

Adaptation

The process by which sensory systems adjust to ongoing stimuli, optimizing processing efficiency is referred to as **adaptation**. The RAS plays a role in adaptation by modulating the sensitivity of sensory pathways to different stimuli. Through adaptation, sensory receptors become less responsive to constant stimuli over time, reducing their sensitivity and preventing sensory overload. For example, when exposed to a continuous background noise, the RAS may dampen the responsiveness of auditory neurons, allowing individuals to focus on more relevant auditory cues

while filtering out irrelevant noise. This adaptive process ensures sensory systems remain responsive to new or significant changes in the environment, helps to maintain optimal arousal levels, and prevents sensory overload.

Nursing assessment related to adaptation involves observing how patients respond to sensory input over time, noting any changes in responsiveness or sensory thresholds. Nurses meticulously observe patients' reactions to various sensory inputs, including visual, auditory, tactile, gustatory, and olfactory stimuli, noting any signs of sensory overload or aversion (Table 29.1). They also engage in communication with patients and caregivers to gather subjective information about changes in sensory perception and preferences.

Sensory Input	Examples of Nursing Assessment
Auditory	• Observe patient response to various levels of environmental noise. • Assess hearing acuity and tolerance to loud sounds. • Note any complaints of difficulty concentrating in noisy environments.
Gustatory	• Observe patient reactions to different tastes and textures of food and fluids. • Assess appetite and enjoyment of meals. • Note any complaints of taste alterations or preferences.
Olfactory	• Evaluate patient ability to detect and identify various scents and odors. • Monitor for changes in sense of smell and sensitivity to different odors. • Note any reports of olfactory fatigue or decreased smell perception.
Tactile	• Assess skin sensitivity and response to touch using different stimuli (e.g., light touch, pressure). • Evaluate for signs of desensitization or hypersensitivity in specific areas. • Monitor for changes in pain perception or discomfort over time.
Visual	• Monitor pupil response to light stimuli over time. • Assess visual acuity regularly to detect changes. • Evaluate for signs of eye fatigue or strain during prolonged visual tasks.

TABLE 29.1 Examples of Adaptation

Nurses may implement environmental modifications to reduce sensory overload or aversion, such as providing a calm and quiet space for patients sensitive to noise or adjusting lighting to accommodate visual preferences. Additionally, nurses educate patients and caregivers about relaxation techniques and sensory coping strategies to promote adaptive responses to stimuli. Interventions may also include sensory stimulation activities tailored to individual preferences and capabilities, such as soothing music therapy or gentle tactile stimulation.

Sensoristasis

The maintenance of a balance between under- and overstimulation, optimizing arousal levels for sensory perception and cognitive function is referred to as **sensoristasis**. The reticular activating system (RAS) is involved in sensoristasis by continuously monitoring sensory input and adjusting arousal levels to match the demands of the environment. Maintaining sensoristasis involves achieving an optimal level of arousal that allows for alertness and responsiveness without overwhelming the nervous system. For instance, in situations requiring heightened vigilance, such as during a challenging task or in response to a potential threat, the RAS increases arousal to enhance sensory perception and cognitive performance. Conversely, during periods of low sensory input, such as during relaxation or sleep, the RAS decreases arousal to conserve energy and promote restorative processes. By modulating arousal levels, sensoristasis ensures that individuals can effectively process sensory information, sustain attention, and regulate emotions, contributing to overall well-being and adaptive functioning.

Assessment of sensoristasis within the framework of the RAS entails a meticulous evaluation of patients' ability to maintain a balance between sensory stimulation and arousal levels. Nurses closely monitor patients for signs of under- or overstimulation, observing their responsiveness to environmental stimuli and any fluctuations in arousal states. Through direct observation and communication, nurses gather information about patients' sensory preferences, aversions, and coping strategies for managing sensory input. Additionally, nurses assess patients' overall level of alertness, vigilance, and responsiveness to stimuli, using standardized tools to evaluate consciousness and attention. By considering contextual factors such as the patient's medical history and environmental conditions, nurses develop a comprehensive understanding of patients' sensoristasis and its impact on adaptive functioning within the RAS. This holistic assessment guides the development of individualized care plans aimed at promoting optimal sensory experiences and maintaining an appropriate balance between stimulation and arousal for each patient.

Nursing interventions aimed toward addressing sensoristasis focus on maintaining an optimal balance between sensory stimulation and arousal levels. Nurses may implement strategies to promote sensory engagement and arousal when patients are understimulated, such as providing stimulating activities or sensory experiences tailored to individual preferences. Conversely, nurses may employ techniques to reduce sensory input and promote relaxation when patients are overstimulated, such as creating a calming environment or offering **sensory modulation** (the brain's ability to regulate and respond appropriately to sensory stimuli from the environment) techniques like deep breathing exercises or guided imagery. Education about self-regulation techniques and coping strategies is also essential to empower patients in managing their arousal levels effectively.

Awareness

The conscious perception and understanding of oneself, one's surroundings, and the experiences that arise from sensory input and cognitive processes is known as **awareness**. It involves being attuned to sensory stimuli, thoughts, emotions, and bodily sensations, as well as the ability to reflect on and integrate this information into a coherent sense of self and reality. Awareness is influenced by various factors, including attention, memory, and cognitive processes, as well as emotional and social factors, and plays a central role in guiding behavior, decision-making, and personal growth.

The reticular activating system (RAS) plays a central role in generating and maintaining awareness by regulating the overall level of cortical activity in the brain. It integrates sensory input from various modalities and internal physiological processes, contributing to the formation of conscious experiences. Additionally, disruptions to the RAS can lead to alterations in awareness, such as drowsiness, confusion, or coma. By modulating arousal levels and directing attention, the RAS helps ensure that individuals remain aware of themselves and their surroundings, facilitating adaptive responses to environmental changes.

Assessment of awareness within the context of the RAS involves a nuanced evaluation of patients' conscious perception and understanding of themselves and their surroundings. Nurses observe patients for signs of altered consciousness or awareness, such as confusion, disorientation, or fluctuations in attention. They also engage in communication with patients and caregivers to gather subjective information about patients' perceptions, thoughts, emotions, and experiences. Additionally, nurses assess patients' ability to integrate sensory input with cognitive processes, memory, and emotional responses, using standardized tools to evaluate cognitive function and orientation. By considering the interaction between sensory processing, cognitive function, and emotional regulation, nurses develop a holistic understanding of patients' awareness within the RAS. This comprehensive assessment informs the development of tailored interventions aimed at promoting optimal cognitive functioning, enhancing self-awareness, and facilitating adaptive responses to the environment.

Additionally, nurses assess patients' overall level of arousal, attention, and consciousness, utilizing standardized tools like the Glasgow Coma Scale to evaluate responsiveness and consciousness. The **Glasgow Coma Scale (GCS)** is a neurological assessment tool used to evaluate a patient's level of consciousness and neurological function (Table 29.2) (Cleveland Clinic, 2023; Jain & Iverson, 2023). It assesses three components: eye opening, verbal response, and motor response, assigning a score ranging from three to fifteen. A higher score indicates a higher level of consciousness, with fifteen being the highest possible score indicating full consciousness (Cleveland Clinic, 2023; Jain & Iverson, 2023). The GCS helps healthcare providers to objectively quantify and monitor changes in a patient's level of consciousness over time, aiding in treatment decisions and prognostication. In addition to the standard GCS components, the Glasgow Coma Scale–Pupil (GCS-P) includes assessment of pupil reactivity,

providing valuable information about neurological status and potential signs of brain injury or dysfunction (Cleveland Clinic, 2023). By integrating findings from sensory assessments with broader neurological evaluations, nurses develop a comprehensive understanding of patients' adaptability within the context of the reticular activating system (RAS), laying the groundwork for tailored care plans and interventions aimed at optimizing sensory experiences and enhancing patient well-being.

Component Tested	Response	Score
Eye response	No eye opening Eye opening to pain Eye opening to sound Eyes open spontaneously	1 2 3 4
Verbal response	No verbal response Incomprehensible sounds Inappropriate words Confused Oriented	1 2 3 4 5
Motor response	No motor response Abnormal extension to pain Abnormal flexion to pain Withdrawal from pain Localizing pain Obeys commands	1 2 3 4 5 6
Interpretation	• A score of thirteen to fifteen indicates mild impairment or normal consciousness. • A score of nine to twelve indicates moderate impairment or decreased level of consciousness. • A score of eight or lower indicates severe impairment or coma.	

TABLE 29.2 Glasgow Coma Scale

LINK TO LEARNING

Learn more about the Glasgow Coma Scale (https://openstax.org/r/77glcomascal) at this website, including how to conduct the assessment for pediatric patients.

Nurses may implement cognitive stimulation activities to enhance patients' attention, memory, and cognitive function, such as puzzles, memory games, or reminiscence therapy. Additionally, nurses provide sensory stimulation and environmental cues to facilitate patients' orientation and promote engagement with their surroundings. Education about the importance of sensory input and cognitive engagement in maintaining awareness is essential for patients and caregivers. Furthermore, nurses collaborate with interdisciplinary teams to address underlying factors contributing to alterations in awareness, such as medication management or addressing physiological needs. For example, if a patient exhibits confusion or disorientation due to medication side effects, nurses work with pharmacists and providers to adjust medication dosages or explore alternative treatments. Additionally, if a patient's altered awareness is linked to unmet physiological needs, such as pain or dehydration, nurses collaborate with nutritionists, physical therapists, and other healthcare professionals to develop comprehensive care plans that address these needs effectively. Through holistic interventions, nurses support patients in maintaining optimal awareness levels, facilitating meaningful interactions with their environment, and promoting overall cognitive well-being. For instance, nurses may implement sensory stimulation techniques, such as providing calming music or

engaging in therapeutic touch, to promote alertness and engagement in patients with altered consciousness.

States of Arousal

The **states of arousal** refer to various levels of physiological and psychological alertness and responsiveness exhibited by an individual. The brain exhibits various states of arousal, ranging from wakefulness to deep sleep. During wakefulness, the brain is in a state of high arousal, characterized by alertness, responsiveness to external stimuli, and cognitive engagement. As individuals transition into drowsiness and light sleep, arousal levels decrease, leading to reduced awareness and relaxation. In deeper stages of sleep, such as non–rapid eye movement (NREM) and rapid eye movement (REM) sleep, arousal levels fluctuate, with REM sleep associated with heightened brain activity resembling wakefulness despite reduced muscle tone (Cherry, 2023). These different states of arousal are regulated by complex interactions between neurotransmitter systems, neurochemicals, and neural circuits in the brain stem, thalamus, and cortex, facilitating transitions between wakefulness and sleep and supporting essential functions such as memory consolidation and emotional regulation (Patel et al., 2024).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Ensuring Safety During States of Arousal

Understanding and effectively managing alterations in states of arousal are essential for providing safe and patient-centered care. Arousal states play a critical role in determining patients' responsiveness to their environment and their ability to participate in their care.

- Quality improvement:
  - Nurses identify and address factors contributing to alterations in states of arousal, such as monitoring protocols for assessing consciousness levels and response to interventions.
  - Nurses implement evidence-based practices to optimize patient outcomes related to arousal states, including protocols for managing sedation levels in critical care settings.
- Patient-centered care:
  - Nurses recognize the individualized nature of responses to alterations in states of arousal, considering factors such as age, comorbidities, and cultural preferences.
  - Nurses involve patients and families in discussions and decision-making regarding interventions and goals of care related to changes in consciousness levels.
- Safety:
  - Nurses implement strategies to ensure patient safety during transitions between different states of arousal, such as protocols for preventing falls and injuries in patients with altered consciousness.
  - Nurses utilize appropriate assessment tools and technology to monitor patients' responses to interventions and identify potential complications promptly.
- Teamwork and collaboration:
  - Nurses communicate effectively with interprofessional team members to coordinate care for patients with alterations in states of arousal, including nurses, physicians, respiratory therapists, and pharmacists.
  - Nurses collaborate with other disciplines to develop comprehensive care plans tailored to individual patient needs and goals.
- Evidence-based practice (EBP):
  - Nurses incorporate current evidence and best practices into the assessment, management, and evaluation of alterations in states of arousal, including guidelines for diagnosing and managing conditions such as coma, delirium, and sleep disorders.
  - Nurses participate in ongoing education and professional development activities to stay updated on emerging research and advances in the field of consciousness and arousal states.
- Informatics:
  - Nurses utilize electronic health records and clinical decision support tools to document assessments, interventions, and patient responses related to alterations in states of arousal.
  - Nurses access and interpret relevant data, such as vital signs, laboratory results, and medication records, to inform clinical decision-making and evaluate patient outcomes.

By incorporating the principles of the QSEN competency framework into the management of alterations in states of arousal, nurses can contribute to enhancing the quality and safety of care delivery for all patients.

Conscious States

The range of mental experiences and subjective awareness that individuals perceive as part of their waking life are known as **conscious states**. Consciousness involves being awake, aware, and responsive to oneself and the environment, as well as experiencing thoughts, emotions, and sensations (Bauer et al., 2023). It includes various dimensions such as self-awareness, introspection, and the ability to reflect on one's own mental states and experiences. Conscious states are mediated by widespread neural networks distributed across the brain, with key regions such as the prefrontal cortex, parietal cortex, and thalamus implicated in generating and sustaining conscious awareness (Bauer et al., 2023).

Nursing assessments primarily involve evaluating the patient's level of consciousness (including being **alert**, having **altered consciousness**, being **lethargic**, and experiencing **obtundation**), cognition, and physiological status to ensure timely detection of changes and facilitate appropriate interventions (Table 29.3). Assessment also includes a comprehensive neurological assessment to monitor mental status and cognitive abilities as well as vital sign assessments to evaluate physiological stability. Nurses also observe behavior, mood, and interactions with the environment to assess emotional well-being and psychosocial needs, alongside pain assessment to ensure patient comfort.

Level of Consciousness	Definition	Description
Alert	A state of heightened wakefulness, attentiveness, and responsiveness in which an individual is fully awake, aware of their surroundings, and capable of actively engaging with stimuli and tasks.	The patient opens their eyes spontaneously, looks at you when spoken to in a normal voice, responds appropriately to stimuli, and movements are purposeful.
Altered consciousness	Any deviation from the normal waking state of consciousness, characterized by changes in perception, cognition, or awareness.	Examples include drowsiness, confusion, disorientation, or difficulty maintaining attention and focus. Individuals may have impaired cognitive function or altered perception.
Lethargic	A state of drowsiness, sluggishness, and reduced energy levels in which an individual appears excessively tired or fatigued.	The patient appears drowsy but opens their eyes to loud verbal stimuli and looks at you, responds to questions, and then falls back asleep.
Obtundation	A state of decreased alertness and responsiveness in which an individual opens their eyes in response to tactile stimuli or other external cues but responds slowly and may appear confused or disoriented.	The patient opens their eyes with tactile stimuli and looks at you but responds to you slowly and may be confused.

TABLE 29.3 Levels of Consciousness

In conscious states, nursing interventions focus on maintaining and promoting patient comfort, safety, and well-being. Nurses prioritize frequent monitoring of vital signs and neurological status to detect changes in consciousness promptly. Additionally, they ensure a supportive and therapeutic environment conducive to promoting alertness and engagement. Nursing care may include facilitating communication with the patient, addressing their needs and preferences, and providing emotional support to alleviate anxiety or distress. Furthermore, nurses collaborate with interdisciplinary teams to implement appropriate pain management strategies

and optimize the patient's overall comfort and satisfaction.

Unconscious States

The mental processes and activities that occur without conscious awareness or voluntary control are known as **unconscious states**. These states may include automatic bodily functions, such as heartbeat and respiration, as well as unconscious cognitive processes, such as implicit memory and automatic responses to environmental stimuli. Examples of levels of unconscious states (including **asleep**, **stupor**, coma, and **vegetative state**, also known as **unresponsive wakefulness syndrome**) can be found in Table 29.4. While unconscious states lack conscious awareness, they still play a crucial role in regulating physiological functions, maintaining homeostasis, and supporting adaptive behaviors. Unconscious processes are mediated by subcortical brain structures, such as the basal ganglia and brain stem, as well as by distributed neural networks involved in automatic and reflexive responses (Bauer et al., 2023).

Unconscious State	Definition	Description
Asleep	A natural state of rest characterized by reduced consciousness, diminished responsiveness to external stimuli, and altered brain activity during sleep.	The individual is lying down with eyes closed and exhibits minimal or no response to external stimuli such as noise or touch. Breathing is regular, and muscle tone is relaxed. Movements may occur, but they are typically involuntary and spontaneous.
Stupor	A state of reduced consciousness marked by extreme lethargy, diminished responsiveness, and a significant decrease in alertness and awareness.	The individual is typically lying down or sitting and may appear drowsy or unresponsive. They may respond briefly to strong stimuli such as shaking or loud noises but quickly return to a state of reduced awareness. Movements are sluggish and may be purposeless.
Coma	A profound state of unconsciousness characterized by a complete loss of consciousness, absence of wakefulness, and lack of response to external stimuli.	The individual is unresponsive to all forms of stimulation, including pain, light, and sound. They do not open their eyes, exhibit purposeful movements, or communicate in any way. Breathing may be irregular, and vital signs may require medical monitoring.
Vegetative state (also known as unresponsive wakefulness syndrome)	A condition marked by wakefulness without awareness, in which the individual appears awake but lacks meaningful responsiveness.	The individual may open their eyes spontaneously or in response to external stimuli but does not demonstrate purposeful behavior or communication. Sleep-wake cycles are present, but there is no evidence of awareness or interaction with the environment.

TABLE 29.4 Unconscious States

Nursing assessments are geared toward monitoring vital signs, neurological status, and respiratory function to detect changes in condition and prevent complications. This involves neurological assessments, including assessment of pupillary response, reflexes, and motor responses (with frequency tailored to the patient's acuity), to evaluate the depth of unconsciousness and assess for signs of neurological deterioration. Also essential is continuous monitoring of respiratory rate, depth, and effort to detect respiratory compromise or failure promptly. Nurses also assess skin integrity and hydration status to prevent skin breakdown and promote tissue perfusion, utilizing monitoring technologies and collaborating with the healthcare team to guide treatment decisions.

In unconscious states, nursing interventions are geared toward preventing complications, ensuring patient safety, and providing comprehensive care to support neurological function and recovery. Nurses maintain a vigilant watch over the patient's vital signs, airway, and neurological status, implementing interventions to prevent aspiration, pressure injuries, and other complications associated with decreased consciousness. They carefully position and support the patient to optimize respiratory function and prevent respiratory compromise. Additionally, nurses implement measures to protect the patient from injury, such as padding bedrails and maintaining a clutter-free environment. Collaboration with the healthcare team and utilization of monitoring technologies, such as continuous electroencephalography (EEG) monitoring, assist in assessing brain function and guiding treatment decisions. Effective communication with family and caregivers ensures they are informed and involved in decision-making regarding care and treatment options.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Maintaining Physiological Functioning in an Unconscious State

Scenario: Mr. Thompson, a 70-year-old patient with a history of severe traumatic brain injury following a car accident, is admitted to the intensive care unit (ICU) in a medically induced coma. He underwent emergency neurosurgery to address intracranial bleeding and swelling, and his medical team decided to induce a coma to reduce cerebral metabolic demands and protect his brain from further injury. Mr. Thompson is unresponsive to stimuli, with closed eyes and absence of purposeful movements. He is intubated and mechanically ventilated to support his breathing, and he is receiving intravenous medications to maintain sedation and control intracranial pressure.

Understanding cues that indicate physiological functioning in an unconscious state is crucial. In this scenario, stable vital signs, such as heart rate, blood pressure, and oxygen saturation levels, would suggest the body's cardiovascular and respiratory systems were functioning adequately. Regular monitoring of intracranial pressure would help to ensure effective management of cerebral edema, while continuous assessment of arterial blood gases and neurological stability would confirm proper respiratory and neurological function, even in the absence of consciousness. These cues would collectively provide valuable insights into the patient's overall physiological status, guiding nursing care and interventions.

29.2 Impaired Sensory Function

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify sensory overload and the effects on the body
- Detect sensory deprivation and the effects on the body
- Recognize alterations in sensory perception

Impaired sensory functioning refers to disruptions or deficiencies in the ability to perceive, process, or respond to sensory stimuli effectively. This can manifest in various ways, including sensory overload, deprivation, or alterations in sensory perception. Understanding impaired sensory functioning is crucial for nurses, as it significantly impacts an individual's overall well-being and quality of life. Sensory impairments can affect various aspects of daily functioning, from communication and social interaction to mobility and safety. Furthermore, they can contribute to increased vulnerability to accidents, falls, and other adverse health outcomes. By recognizing and addressing impaired sensory functioning, nurses can play a vital role in promoting optimal sensory health, enhancing patient safety, and improving the overall quality of care.

Sensory Overload

When an individual is exposed to an excessive amount of sensory stimuli that overwhelms their ability to process and integrate information effectively, **sensory overload** occurs. This overwhelming sensory input can lead to difficulties in concentrating, maintaining attention, and regulating emotions (Watson, 2021). Common examples of sensory overload in an inpatient hospital environment include being in crowded or noisy environments, being exposed to bright lights or strong odors, and prolonged use of electronic devices. When sensory overload occurs, the body's stress response may be activated, leading to symptoms such as irritability, agitation, anxiety, and fatigue

(Watson, 2021).

Symptoms of Sensory Overload

Sensory overload manifests in various ways, often presenting as overwhelming stimuli that disrupt an individual's ability to process sensory information effectively. This overload can lead to a range of symptoms, including irritability and agitation, as individuals struggle to cope with the excessive input bombarding their senses. Feelings of anxiety and restlessness may ensue, accompanied by a noticeable difficulty in concentrating on tasks due to the overwhelming sensory distractions. Physical discomfort, such as headaches and muscle tension, may also arise as the body responds to the stress induced by the excessive stimuli (Watson, 2021). Moreover, individuals experiencing sensory overload may exhibit sensory-seeking behaviors or become hypersensitive to certain stimuli, further complicating their ability to manage the influx of sensory information. In response, they may withdraw from or avoid situations that trigger sensory overload, impacting their engagement in daily activities and social interactions. Recognizing these symptoms is crucial for providing appropriate support and implementing strategies to mitigate the effects of sensory overload on individuals' well-being and functioning.

Causes of Sensory Overload

Sensory overload can stem from a multitude of factors, ranging from environmental stimuli to internal sensory processing challenges. Environmental triggers, such as loud noises, bright lights, crowded spaces, and strong odors, can overwhelm the sensory system and contribute to sensory overload. In addition to external factors, internal stimuli can also contribute to sensory overload. This includes sensations like pain, discomfort from medical tubes (such as IVs, urinary catheters, or nasogastric tubes), and feelings of stress and anxiety related to the illness itself. Additionally, changes in routine or exposure to unfamiliar situations may exacerbate sensory sensitivity, leading to heightened responses to stimuli (Watson, 2021).

In healthcare settings, sensory overload may emerge from diverse origins, leading to an overwhelming influx of stimuli that inundate individuals' sensory systems. One primary cause is the proliferation of medical equipment and technology, such as monitors, alarms, and machinery, which generate continuous noise and visual cues. In ICUs and emergency departments, where monitoring is intensive and patient conditions can change rapidly, the density of alarms and equipment is particularly high, amplifying the risk of sensory overload. Moreover, crowded, and bustling environments, frequent interruptions, and multiple simultaneous tasks further exacerbate sensory overload, especially for patients with heightened sensitivity or cognitive impairments. Additionally, environmental factors like bright lighting, strong odors, and lack of privacy can contribute to sensory overload, particularly in long-term care facilities or psychiatric units where patients may already be at-risk due to underlying health conditions. Identifying the specific triggers and underlying factors contributing to sensory overload is essential for implementing targeted interventions and creating supportive environments tailored to individuals' sensory needs.

LINK TO LEARNING

Alarm fatigue, a phenomenon prevalent in healthcare settings, occurs when healthcare workers become desensitized to the multitude of alarms generated by medical devices, such as monitors and infusion pumps. This desensitization can lead to delayed response times or even ignoring alarms altogether, potentially resulting in missed critical events and patient harm. Furthermore, the constant sounding of alarms contributes to increased stress and burnout among healthcare workers, exacerbating already challenging work environments. Recognizing the severity of alarm fatigue, healthcare organizations have prioritized addressing this issue as part of their patient safety initiatives, aligning with goals set forth by accrediting bodies like The Joint Commission. Take a look at The Joint Commission's National Patient Safety Goals (https://openstax.org/r/77JCNPSG) to learn about the recommendations for reducing alarm fatigue.

Nursing interventions for sensory overload aim to minimize sensory input and create a calming and supportive environment for the patient. This may involve adjusting the physical environment to reduce sensory stimuli, such as dimming lights, reducing noise levels, providing earplugs or headphones, and removing clutter or distracting objects. Nurses may also employ techniques to promote relaxation and sensory modulation, such as deep breathing exercises, progressive muscle relaxation, guided imagery, or sensory-focused activities like listening to soothing music or engaging in tactile stimulation with textured objects. Additionally, providing clear communication and

reassurance to the patient, offering opportunities for breaks or quiet time, and implementing individualized coping strategies based on the patient's preferences and sensory needs are essential components of nursing interventions for sensory overload. Collaborating with interdisciplinary team members, including occupational therapists, psychologists, and environmental specialists, can further enhance the effectiveness of interventions and support the patient in managing sensory overload effectively.

REAL RN STORIES

Causes of Sensory Overload in an Intensive Care Unit

Nurse: Liam, BSN
Clinical setting: Medical-surgical unit
Years in practice: 2
Facility location: Mobile, Alabama

During my time working in the ICU, I encountered a patient who experienced sensory overload due to the constant alarms and beeping monitors surrounding their bed. The patient, already in a delicate condition after a significant surgery, grew more agitated and distressed as the persistent sounds continued day and night. Despite efforts to adjust the alarm settings and minimize unnecessary alerts, the sheer volume and frequency of alarms in the ICU environment were overwhelming for the patient. The patient developed ICU delirium, which is an acute state of confusion and disorientation commonly observed in critically ill patients who are hospitalized in the ICU.

Recognizing the detrimental impact of sensory overload on the patient's well-being and recovery, our interdisciplinary team collaborated to address the issue. We implemented strategies to mitigate sensory stimuli, such as using earplugs and providing noise-canceling headphones to block out excessive noise. Additionally, we prioritized regular communication with the patient and their family members to reassure them and address any concerns or anxieties related to the alarms.

To further support the patient's comfort and promote a healing environment, we advocated for changes in ICU protocols and alarm management practices. This included conducting regular audits of alarm settings, educating staff members on the importance of alarm fatigue and sensory overload, and implementing protocols for alarm customization based on individual patient needs.

Over time, with concerted efforts from the healthcare team and adjustments to the care environment, we observed improvements in the patient's overall well-being and ability to cope with the ICU environment until the patient could be transferred to a lower level of care. By addressing sensory overload associated with ICU alarms and prioritizing patient-centered care, we were able to create a more supportive and healing environment for our patients.

Conditions Associated with Sensory Overload

Certain medical conditions are associated with heightened sensory sensitivity and an increased risk of experiencing sensory overload. Autism spectrum disorder (ASD) is one such condition characterized by difficulties in social interaction, communication, and repetitive behaviors. Individuals with ASD often exhibit sensory sensitivities, such as hypersensitivity to loud noises, bright lights, or certain textures, which can lead to sensory overload in overwhelming environments. Similarly, attention deficit hyperactivity disorder (ADHD) may involve sensory processing difficulties, contributing to distractibility and difficulties filtering out irrelevant stimuli. Sensory processing disorder (SPD) is another condition with which individuals have challenges regulating and responding to sensory input, leading to sensory overload in response to everyday stimuli. Additionally, stress, fatigue, anxiety disorders, post-traumatic stress disorder (PTSD), and certain medical conditions like migraine headaches or fibromyalgia can exacerbate sensory sensitivity and increase susceptibility to sensory overload (Watson, 2021). Understanding these conditions and their impact on sensory processing is crucial for nurses to provide appropriate support and accommodations to individuals experiencing sensory overload.

Sensory Deprivation

The absence or reduction of normal sensory inputs, leading to a state of decreased stimulation and sensory isolation, is **sensory deprivation**. Prolonged sensory deprivation can have profound effects on the body, affecting

both physical and mental health. Without adequate sensory stimulation, neural pathways may become underutilized or dysregulated, leading to alterations in brain function and perceptual processing. This can manifest as changes in cognition, mood, and behavior as well as disruptions in sleep patterns and circadian rhythms. Physiologically, sensory deprivation may also impact sensory organs and systems, potentially leading to sensory hypersensitivity or diminished sensory acuity over time (Khan & Khan, 2022; Rauschecker, 2018; Sahoo et al., 2022).

Symptoms of Sensory Deprivation

Symptoms of sensory deprivation can manifest across various domains, affecting both physical sensations and psychological well-being. Physically, individuals may experience a heightened awareness of bodily sensations, such as tingling or numbness, as well as changes in proprioception or spatial orientation. Sensory deprivation can also lead to alterations in sensory perception, including visual or auditory hallucinations, distortions in the perception of time, delirium (a state of acute confusion and disorientation), and hypersensitivity to sensory stimuli on reintroduction (Rauschecker, 2018; Sahoo et al., 2022).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Ensuring Patient Safety Amid Sensory Deprivation

Quality and Safety Education for Nurses (QSEN) competencies provide a framework for nurses to deliver high-quality care that prioritizes patient safety and satisfaction. This feature box explores how QSEN competencies can guide nursing practice in addressing sensory deprivation, a critical aspect of patient care that requires vigilant assessment, intervention, and collaboration.

- Quality improvement:
  - Nurses identify and address symptoms of sensory deprivation through ongoing assessment and evaluation protocols.
  - Nurses implement evidence-based interventions to mitigate the effects of sensory deprivation and improve patient outcomes.
- Patient-centered care:
  - Nurses recognize the individualized nature of responses to sensory deprivation, considering factors such as age, cultural background, and previous experiences.
  - Nurses involve patients in decision-making regarding their care plans and interventions to address sensory deprivation symptoms.
- Safety:
  - Nurses implement strategies to ensure patient safety amid sensory deprivation, including fall prevention measures and environmental modifications.
  - Nurses utilize appropriate screening tools and assessment protocols to identify patients at risk of sensory deprivation and implement preventive measures.
  - Nurses recognize potential behavioral and psychosocial changes associated with sensory deprivation, such as anxiety, depression, and suicidal ideation, and provide comprehensive support and interventions to address these concerns.
- Teamwork and collaboration:
  - Nurses communicate effectively with interdisciplinary team members to coordinate care for patients experiencing sensory deprivation.
  - Nurses collaborate with other healthcare professionals to develop comprehensive care plans tailored to address the specific needs of patients with sensory deprivation.
- Evidence-based practice (EBP):
  - Nurses incorporate current evidence and best practices into the assessment, management, and evaluation of sensory deprivation symptoms.
  - Nurses participate in ongoing education and professional development activities to stay updated on emerging research and interventions related to sensory deprivation.
- Informatics:
  - Nurses utilize electronic health records and clinical decision support tools to document assessments, interventions, and patient responses related to sensory deprivation.

- Nurses access and interpret relevant data, such as screening results and patient history, to inform clinical decision-making and evaluate the effectiveness of interventions.

Psychologically, sensory deprivation can induce feelings of boredom, restlessness, or agitation, as individuals lack external stimuli to engage their attention and occupy their minds. This may lead to difficulties concentrating, maintaining focus, or sustaining interest in activities. Emotional responses to sensory deprivation can range from irritability and anxiety to feelings of isolation, loneliness, or depression. In some cases, prolonged sensory deprivation can trigger existential thoughts or existential crisis as individuals grapple with the absence of sensory input and its implications for their perception of self and reality (Rauschecker, 2018; Sahoo et al., 2022).

Symptoms of sensory deprivation can vary depending on the duration and severity of the deprivation as well as individual factors such as age and preexisting health conditions. The duration and severity of the deprivation play a significant role, with longer periods of deprivation often leading to more pronounced symptoms. In acute cases, individuals may initially experience heightened sensitivity to stimuli, followed by a decline in sensory perception as adaptation sets in. However, prolonged, or chronic sensory deprivation, can result in more severe symptoms, including hallucinations, cognitive disturbances, and emotional distress (Rauschecker, 2018; Sahoo et al., 2022). Age also influences the manifestation of symptoms, as younger individuals, particularly children, may display different responses compared to older adults. Similarly, preexisting health conditions or sensory impairments can exacerbate or modify symptoms of sensory deprivation. For example, individuals with conditions affecting sensory processing or neurological functioning may be more susceptible to experiencing hallucinations or cognitive distortions during periods of sensory deprivation.

Causes of Sensory Deprivation

Causes of sensory deprivation can vary widely and may include physical, environmental, or psychological factors. Physical causes can include conditions that limit sensory input, such as blindness, deafness, or immobilization due to injury or illness. Environmental factors such as isolation, confinement, or exposure to monotonous or sterile surroundings can also contribute to sensory deprivation. Additionally, medical interventions or conditions that limit sensory input, such as prolonged bed rest, immobilization, or the use of sensory-depriving equipment like blindfolds or earplugs, can induce sensory deprivation. Neurological conditions or injuries affecting sensory processing pathways in the brain may also lead to deprivation by disrupting the transmission or interpretation of sensory signals. Additionally, psychological factors such as trauma, stress, neglect, or social withdrawal may lead to self-imposed sensory deprivation as individuals avoid or restrict exposure to external stimuli (Rauschecker, 2018; Sahoo et al., 2022). In healthcare settings, sensory deprivation may occur inadvertently as a result of sedation, anesthesia, or prolonged bed rest, highlighting the importance of proactive measures to prevent and address sensory deprivation in patient care.

Conditions Associated with Sensory Deprivation

Sensory deprivation can be associated with various conditions, both acute and chronic, affecting individuals across the life span. In acute medical settings, such as ICUs or postanesthesia recovery units (PACUs), patients may experience sensory deprivation due to the use of sedative medications, mechanical ventilation, or prolonged periods of immobility (Khan & Khan, 2022). Chronic conditions that limit mobility or sensory input, such as paralysis, coma, or neurodegenerative disorders like Alzheimer disease, can also lead to sensory deprivation over time. Additionally, individuals in solitary confinement or confined spaces may experience sensory deprivation as a result of prolonged isolation and restricted sensory stimulation.

Prolonged sensory deprivation has been linked to cognitive deficits, including impaired memory, attention, and executive function. It can also exacerbate symptoms of mental health disorders such as depression, anxiety, and PTSD (Khan & Khan, 2022). In addition, sensory deprivation may increase the risk of accidents or injuries due to impaired perception and awareness of environmental hazards. Sensory deprivation has been associated with prolonged hospital stays, increased healthcare costs, and decreased patient satisfaction, highlighting the need for interventions to mitigate its effects and promote sensory stimulation and engagement for optimal patient outcomes (Drahota et al., 2012).

Alterations in Sensory Perception

Alterations in sensory perception refer to changes in how individuals perceive and interpret sensory stimuli from

their environment. Alterations in sensory perception encompass a range of changes in how individuals interpret and respond to sensory stimuli. These alterations can occur due to various factors, including neurological conditions, trauma, aging, or environmental influences. Common alterations include heightened sensitivity (hypersensitivity), diminished perception (hyposensitivity), or distortions in sensory experiences. For example, individuals may experience increased sensitivity to light, sound, or touch, leading to discomfort or pain, while others may have difficulty perceiving or distinguishing sensory stimuli, affecting their ability to navigate their surroundings effectively. These alterations can significantly impact daily functioning, social interactions, and emotional well-being, highlighting the importance of tailored interventions to support individuals experiencing such changes in sensory perception (Khan & Khan, 2022).

LIFE-STAGE CONTEXT

Alterations in Senses with Aging

Aging is accompanied by physiological changes that can impact sensory perception. Understanding age-related alterations in senses is crucial for providing holistic and person-centered care to older adults.

- Vision:
  - decreased visual acuity and contrast sensitivity due to changes in the lens and retina
  - increased risk of age-related eye conditions such as cataracts, glaucoma, and macular degeneration
  - strategies to promote optimal sensory health: encouraging regular eye exams as well as providing adequate lighting, and assistive devices such as magnifiers or large-print materials
- Hearing:
  - gradual decline in hearing acuity, particularly in high-frequency sounds
  - increased susceptibility to age-related hearing loss (presbycusis) and conditions such as tinnitus
  - strategies to promote optimal sensory health: encouraging regular hearing screenings and use of hearing aids or assistive listening devices to improve communication and social engagement
- Taste and smell:
  - diminished taste and smell sensitivity due to changes in taste buds and olfactory receptors
  - decreased ability to detect and differentiate flavors, leading to decreased appetite and enjoyment of food
  - strategies to promote optimal sensory health: promoting sensory stimulation through flavorful and aromatic foods as well as maintaining oral hygiene to support taste sensation
- Touch:
  - reduced sensitivity to touch and pressure due to changes in skin thickness, nerve endings, and blood flow
  - increased risk of skin injuries such as pressure ulcers and burns
  - strategies to promote optimal sensory health: implementing strategies to maintain skin integrity through regular skin assessments, moisturizing, and protective measures

As individuals age, changes in sensory function can impact their quality of life and independence. By recognizing and addressing age-related alterations in senses, nurses can develop tailored interventions to support optimal sensory health and well-being in older adults. Through proactive assessment, education, and interdisciplinary collaboration, healthcare teams can empower older adults to maintain sensory function and enhance their overall quality of life as they age.

Sensory Deficits

A **sensory deficit** refers to an impairment or loss in one or more sensory modalities, such as vision, hearing, touch, taste, or smell. These deficits can arise from congenital conditions, injuries, diseases, or aging processes, resulting in diminished sensory perception and decreased ability to detect or discriminate sensory stimuli. Individuals with sensory deficits may face difficulties in communication, mobility, safety, and social engagement, requiring adaptive strategies and accommodations to navigate their environment effectively. Addressing sensory deficits often involves multidisciplinary approaches, including medical management, rehabilitative therapies, and assistive devices, aimed at optimizing sensory function and enhancing quality of life.

Nursing assessment for sensory deficits involves a comprehensive evaluation of the patient's sensory function, including sight, hearing, touch, taste, and smell. This assessment typically includes direct observation of the

patient's responses to sensory stimuli, such as their ability to follow commands, react to visual or auditory cues, and perceive tactile sensations. Nurses may also utilize screening tools or standardized assessments to quantify the extent of sensory deficits and identify specific areas of impairment. Additionally, it is essential for nurses to consider the patient's medical history, current medications, and any environmental factors that may impact sensory function. Through thorough assessment, nurses can gain insights into the nature and severity of sensory deficits, enabling them to develop individualized care plans to address the patient's needs effectively.

Nursing interventions for sensory deficits aim to compensate for impaired sensory function and promote the patient's safety, comfort, and quality of life. These interventions may include modifying the environment to reduce sensory distractions or hazards, such as minimizing noise or ensuring adequate lighting for visually impaired patients. Nurses may also provide assistive devices or technologies to enhance sensory perception, such as hearing aids or magnifying glasses. Education and training on adaptive strategies and techniques can empower patients to maximize their remaining sensory abilities and navigate daily activities more independently. Additionally, nurses collaborate with interdisciplinary teams to address underlying conditions contributing to sensory deficits, such as managing chronic diseases or coordinating rehabilitative therapies. By implementing holistic interventions, nurses play a vital role in supporting patients with sensory deficits and optimizing their overall well-being.

Sensory Processing Disorder

A neurological condition that affects how individuals process and respond to sensory information from the environment is known as **sensory processing disorder (SPD)**. In SPD, the brain has difficulty organizing and interpreting sensory input, leading to atypical responses or behaviors. Individuals with SPD may experience hypersensitivity (over-responsiveness) or hyposensitivity (under-responsiveness) to sensory stimuli such as touch, sound, taste, smell, or movement. This can result in challenges with sensory modulation, **sensory discrimination** (the brain's ability to interpret and distinguish between different sensory stimuli), or **sensory integration** (the brain's ability to organize and make sense of information received through the senses), impacting various aspects of daily life, including behavior, attention, social interaction, and emotional regulation. Sensory processing difficulties can occur independently or in association with other developmental or neurological conditions, such as ASD, ADHD, or anxiety disorders. Treatment for SPD often involves sensory integration therapy, environmental modifications, and sensory-based interventions tailored to address individual sensory processing patterns and enhance functional outcomes. Early identification and intervention are crucial for supporting individuals with SPD and optimizing their participation and engagement in daily activities (Jones, 2024).

Nursing assessment for individuals with SPD involves comprehensive evaluation of sensory processing patterns, including sensory modulation, discrimination, and integration abilities. Assessment may include gathering information from caregivers or family members regarding the individual's sensory responses and behaviors across different environments and activities. Observation of the individual's reactions to various sensory stimuli, such as touch, sound, movement, and visual input, can provide valuable insights into their sensory processing difficulties. Additionally, standardized assessment tools, such as the sensory profile or sensory processing measure, may be utilized to quantify sensory processing patterns and identify specific areas of challenge or strength.

LINK TO LEARNING

A sensory profile (https://openstax.org/r/77sensprofile) refers to an assessment tool used to evaluate an individual's sensory processing patterns, preferences, and sensitivities across various sensory modalities, such as touch, taste, smell, sight, sound, and movement. It helps identify how an individual responds to sensory input and how these responses may impact their daily functioning, behavior, and participation in activities.

Nursing interventions for sensory processing disorder (SPD) focus on creating a sensory-friendly environment that promotes comfort, regulation, and participation in daily activities. This may involve implementing sensory-based strategies to address specific sensory needs, such as providing sensory input through tactile, proprioceptive, or vestibular activities to promote self-regulation. Environmental modifications, such as reducing sensory triggers or providing sensory accommodations, can also help minimize sensory overload and support the individual's sensory well-being. Collaborating with interdisciplinary teams and educating caregivers about sensory processing difficulties are essential components of nursing interventions to optimize outcomes for individuals with SPD.

REAL RN STORIES

Assessing a Patient with Sensory Processing Disorder

Nurse: Pauleena, BSN
Clinical setting: Pediatric outpatient clinic
Years in practice: 4
Facility location: Savannah, Georgia

As a pediatric nurse, every child I meet holds a unique story, and Jake's journey with SPD was one I won't forget. When Jake and his parents walked into my office, I could sense their concern. Jake, a lively 5-year-old, seemed a bit apprehensive, his eyes darting around the room. His parents described his struggles with sensory overload—loud noises made him cover his ears, and certain textures sent him into a frenzy. I knew this was going to be more than just a routine assessment. It was about understanding Jake's world and helping him navigate it better.

As I started the assessment, I brought out an array of toys and tools, each designed to uncover a piece of Jake's sensory puzzle. Watching him interact with them was fascinating. Sometimes he would recoil from a touch, other times he'd dive right in, craving more sensation. One activity stands out vividly in my memory. I set up a mini obstacle course with different textures on the floor—soft rugs, bumpy mats, smooth tiles. Watching Jake cautiously navigate through, I saw determination in his eyes as he conquered each texture, one step at a time. Throughout the assessment, I tried to create a space where Jake felt safe and understood. When he got overwhelmed, I was there to offer a comforting hand or a reassuring smile. Building that trust was key to unlocking his world of sensory experiences.

After the assessment, I sat down with Jake's parents, armed with insights and strategies to help Jake thrive. We talked about creating a sensory-friendly home environment, incorporating calming activities into his routine, and being mindful of his triggers. Seeing Jake's progress over time was incredibly rewarding. With the right support and understanding, he started to navigate his world with more confidence and ease. And knowing I played a part in that journey fills my heart with joy. Jake's story taught me the power of patience, empathy, and personalized care. It's a reminder that behind every diagnosis is a unique individual with their own story waiting to be heard and understood.

29.3 Factors Affecting Sensory Function

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe physiological factors affecting sensory perception
- Explain psychosocial factors affecting sensory perception
- Identify medications affecting sensory perception
- Discuss disorders affecting sensory perception

Understanding the physiological factors that influence sensory perception is essential for nurses to assess, interpret, and respond to individuals' sensory experiences accurately. Physiological mechanisms contribute to the detection, transmission, and processing of sensory information throughout the body. From the neurological pathways transmitting signals to the sensory organs receiving them, each physiological component plays a pivotal role in shaping one's perception of the world. Additionally, psychosocial factors, including psychological states, cultural backgrounds, and past experiences, contribute to how individuals interpret sensory stimuli. Furthermore, medications can alter sensory experiences, either enhancing or dampening one's perception of stimuli, while disorders such as neuropathy or SPDs add another layer of complexity to sensory perception. Understanding these factors equips nurses to provide tailored interventions that honor the diversity of human sensory experiences.

Physiological Factors

Sensory perception, the process by which organisms interpret and respond to sensory stimuli from their environment, is influenced by a multitude of physiological factors. These factors encompass various aspects of sensory function, including the structure and function of sensory organs, neural pathways, and sensory processing mechanisms. From genetics to age-related changes and current health states, physiological factors play a pivotal

role in shaping how individuals perceive and interpret sensory information.

Developmental Considerations

Developmental considerations play a crucial role in shaping sensory perception, as sensory abilities evolve and mature over the course of an individual's life span. In the early stages of life, such as infancy and childhood, sensory systems undergo rapid maturation, enabling infants to progressively interpret and respond to sensory stimuli from their environment. As neural pathways mature and connections strengthen, infants become more adept at processing various sensory inputs, including sound, touch, taste, smell, and visual cues. However, sensory thresholds in children may differ from those in adults, with younger individuals often exhibiting higher thresholds and less refined sensory processing abilities. During childhood and adolescence, the process of sensory integration becomes increasingly significant, as the brain learns to organize and interpret sensory information from multiple sources to create a coherent perceptual experience. Developmental factors, such as brain maturation and **neural plasticity** (the brain's ability to reorganize and adapt its structure and function in response to changes), play pivotal roles in shaping sensory integration processes, which influence individuals' interactions with their surroundings.

Furthermore, sensory preferences and processing patterns may vary among children and adolescents, influenced by developmental stages, personality traits, and past experiences. While some children may demonstrate preferences for certain sensory stimuli, others may experience challenges related to atypical sensory processing, which can contribute to the development of SPDs such as ASD or ADHD.

Nurses play a crucial role in assessing and addressing how developmental factors impact sensory perception. One key nursing intervention involves conducting thorough developmental assessments to identify age-related changes in sensory function and potential sensory deficits. For example, in pediatric nursing, nurses assess sensory development milestones and screen for any delays or abnormalities in sensory processing, ensuring early detection and intervention. Additionally, in geriatric nursing, nurses evaluate age-related sensory changes, such as diminished vision or hearing, and implement interventions to support sensory functioning and maintain quality of life.

LINK TO LEARNING

The STAR Institute for Sensory Processing is an organization dedicated to understanding and addressing SPDs. They offer several checklists (https://openstax.org/r/77ckltsensory) designed to identify potential symptoms and behaviors associated with sensory processing disorder (SPD) across different age groups. These checklists are often used as screening tools to identify potential sensory processing difficulties based on developmental stages.

Nursing interventions may include providing sensory stimulation activities, such as tactile or auditory stimulation, to enhance sensory experiences and promote cognitive functioning in older adults. For example, nurses can offer textured objects like sensory balls or soft brushes for exploration, or play calming music or nature sounds to create a soothing auditory environment. Furthermore, nurses educate patients and caregivers about age-related sensory changes and strategies to optimize sensory perception and compensate for sensory deficits. This may involve recommending assistive devices, such as hearing aids or magnifiers, and teaching techniques for adapting the environment to enhance sensory stimulation and reduce sensory overload.

Age Considerations

Age considerations significantly influence sensory perception, encompassing a spectrum of physiological changes that occur as individuals progress through different stages of life. As individuals age, alterations in sensory organs, neural pathways, and sensory processing mechanisms can lead to shifts in sensory acuity and perception (Table 29.5).

Decline in Sensory Function	Rationale
Changes in tactile sensation	• Degenerative processes: Age-related changes in skin thickness, nerve density, and blood flow affect tactile sensation. • Cumulative exposure to environmental factors: Chronic exposure to physical stressors and environmental toxins can impair tactile perception. • Natural aging of sensory structures: Alterations in the structure and function of cutaneous receptors and peripheral nerves occur with age, leading to diminished tactile sensation (Correia et al., 2016).
Diminished taste and smell sensitivity	• Degenerative processes: Aging affects the number and function of taste buds and olfactory receptors, diminishing taste and smell sensitivity. • Cumulative exposure to environmental factors: Factors such as smoking, medication use, and chronic health conditions can contribute to taste and smell impairment over time. • Natural aging of sensory structures: Changes in the density and distribution of taste buds and olfactory receptor cells occur with age, reducing sensitivity to taste and smell stimuli.
Hearing loss	• Degenerative processes: Age-related changes in the inner ear, including loss of hair cells and stiffening of the cochlear membrane, lead to hearing loss. • Cumulative exposure to environmental factors: Exposure to loud noises over time can damage the delicate structures of the inner ear, resulting in sensorineural hearing loss. • Natural aging of sensory structures: Gradual deterioration of auditory structures, such as the cochlea and auditory nerve, occurs with age, leading to hearing impairment.
Reduced visual acuity	• Degenerative processes: Age-related changes in the eye's structure, such as lens opacity (cataracts) and retinal degeneration, impair visual acuity. • Cumulative exposure to environmental factors: Prolonged exposure to ultraviolet radiation and environmental pollutants can contribute to vision deterioration over time. • Natural aging of sensory structures: Changes in the density and elasticity of ocular tissues occur with age, affecting visual acuity.

TABLE 29.5 Common Sensory Declines in Older Adults

Consequently, age-related changes in sensory perception can have profound implications for individuals' daily functioning, social interactions, and overall quality of life. Understanding the physiological factors underlying age-related changes in sensory perception is essential for developing targeted interventions and strategies to support older adults in maintaining optimal sensory function and enhancing their overall well-being.

Nurses should conduct thorough assessments to identify age-related changes in sensory function and potential sensory deficits. For instance, in older adult nursing, nurses evaluate age-related sensory changes, such as diminished vision or hearing, and implement interventions to support sensory functioning and maintain quality of life. Nursing interventions may include providing sensory stimulation activities, such as tactile or auditory stimulation, to enhance sensory experiences and promote cognitive functioning in older adults.

Furthermore, nurses educate patients and caregivers about age-related sensory changes and strategies to optimize sensory perception and compensate for sensory deficits. This may involve recommending assistive devices, such as

hearing aids or magnifiers, and teaching techniques for adapting the environment to enhance sensory stimulation and reduce sensory overload.

Current Health State

The current health state of an individual can shape sensory perception, encompassing a wide range of physiological factors that can influence sensory function. Health conditions, both chronic and acute, can impact sensory organs, neural pathways, and sensory processing mechanisms, thereby affecting an individual's ability to perceive and interpret sensory stimuli accurately. For instance, neurological disorders like Parkinson disease or stroke can disrupt the transmission of sensory information within the brain, leading to sensory deficits or distortions. Similarly, sensory impairments such as vision or hearing loss can profoundly affect sensory perception by limiting the ability to receive or process sensory input. Additionally, systemic health issues such as diabetes or cardiovascular disease may indirectly impact sensory function through vascular changes or metabolic imbalances.

Nurses evaluate and manage the impact of different health conditions on sensory function and perception. One key nursing intervention involves conducting thorough assessments to identify any changes or deficits in sensory perception related to the patient's current health state. For example, nurses may assess sensory function in patients with neurological conditions, such as stroke or multiple sclerosis, to detect alterations in sensation, proprioception, or tactile perception. Additionally, nurses monitor patients with acute or chronic illnesses for signs of sensory impairment, such as altered pain perception or sensory hypersensitivity, and implement interventions to alleviate discomfort and promote recovery.

Nursing interventions may include providing sensory stimulation techniques, such as therapeutic touch (hands-on healing) or aromatherapy (scent-based therapy), to enhance sensory experiences and reduce stress or anxiety associated with the patient's health condition. Furthermore, nurses educate patients and caregivers about the potential effects of their health status on sensory perception and teach strategies to optimize sensory function and manage sensory-related symptoms.

PATIENT CONVERSATIONS

Educating Patients about the Influence of Current Health Status Impacts Sensory Perception

Nurse: Good morning, Mrs. Johnson. Today, I would like to discuss how your recent diagnosis of diabetes may impact your sensory perception and share some strategies to help manage any related symptoms.

Patient: Good morning, nurse. I appreciate you taking the time to explain this to me. How exactly does diabetes affect my sensory perception?

Nurse: Well, Mrs. Johnson, diabetes can lead to a condition called diabetic neuropathy, where prolonged high blood sugar levels damage the nerves throughout your body. This can result in altered sensations, such as numbness or tingling in your hands and feet, making it challenging to feel things as you normally would.

Patient: That makes sense. I have noticed some tingling sensations in my feet recently. What can I do about it?

Nurse: There are several strategies we can explore to help manage these symptoms. First, it is essential to keep your blood sugar levels under control through proper diet, medication, and regular exercise. Additionally, we can discuss ways to protect your feet from injury, such as wearing comfortable shoes and checking them daily for any signs of damage.

Patient: Thank you for the advice. Are there any specific exercises or treatments that can help improve my sensory function?

Nurse: Yes, Mrs. Johnson. We can incorporate exercises like balance training and gentle stretching into your routine to help improve nerve function and reduce discomfort. Also, certain medications or topical treatments may be prescribed by your doctor to alleviate any pain or tingling sensations you may be experiencing.

Patient: That's reassuring to know. I'll make sure to follow your recommendations and stay proactive about managing my diabetes.

Nurse: That's great to hear, Mrs. Johnson. Remember, we're here to support you every step of the way on your journey to better health. If you have any further questions or concerns, please don't hesitate to reach out to me or the healthcare team.

Genetics

Genetics influence various aspects of sensory function and processing. Genetic factors contribute to the development and structure of sensory organs, neural pathways, and sensory processing mechanisms, ultimately determining an individual's sensory abilities and preferences. For example, genetic variations can impact the sensitivity of sensory receptors, such as taste buds or photoreceptors in the eyes, affecting an individual's perception of taste or color. Additionally, genetic factors can influence the transmission of neural signals within the brain, modulating how sensory information is processed and interpreted. Certain genetic mutations or polymorphisms may predispose individuals to sensory disorders or conditions, such as congenital deafness or color blindness, altering their sensory experiences. Moreover, genetic predispositions may contribute to individual differences in sensory perception, including thresholds for sensory stimuli and preferences for certain sensory experiences.

Nurses conduct thorough assessments to identify any genetic predispositions or hereditary conditions that may affect sensory perception. For example, nurses may assess family medical history to identify genetic disorders or conditions associated with sensory impairment, such as congenital deafness or retinal degeneration. Additionally, nurses collaborate with genetic counselors and other healthcare providers to perform genetic testing and counseling for patients at risk of inherited sensory disorders. Nursing interventions may include providing education and support to patients and their families about the genetic basis of sensory conditions, offering resources for genetic testing and counseling, and facilitating access to specialized care and interventions to manage genetic-related sensory issues.

Psychosocial Factors

Psychosocial factors play a fundamental role in shaping sensory perception, encompassing a wide array of psychological and social elements that influence how individuals interpret and respond to sensory stimuli. These factors include mental health, personality traits, behaviors, cultural norms, and societal expectations, all of which contribute to the complexity of sensory experiences. By recognizing the impact of mental health on sensory experiences, healthcare providers can develop targeted interventions to support individuals in managing sensory symptoms and improving overall well-being.

Mental Health

Mental health significantly influences sensory perception, as psychological factors can profoundly impact how individuals perceive and interpret sensory stimuli. Conditions such as anxiety, depression, or PTSD can alter sensory processing and perception, leading to heightened sensitivity, distorted perceptions, or reduced sensory awareness. For example, individuals experiencing anxiety may exhibit heightened arousal and vigilance toward sensory stimuli, leading to increased sensitivity to sounds or tactile sensations. Conversely, individuals with depression may experience reduced sensory pleasure and decreased interest in sensory experiences, known as **anhedonia**. Additionally, trauma or adverse childhood experiences can shape sensory processing patterns and contribute to sensory hypersensitivity or dissociation (Khan & Khan, 2022).

Nurses conduct comprehensive assessments to identify any mental health issues that may affect sensory perception. For example, nurses may assess patients with depression or anxiety for alterations in sensory processing, such as heightened sensitivity to stimuli or decreased perception of sensory input. Additionally, nurses monitor patients with psychiatric disorders for signs of sensory disturbances, such as hallucinations or sensory distortions, and implement interventions to manage these symptoms effectively. Nursing interventions may include providing sensory stimulation activities, such as relaxation techniques or guided imagery, to promote sensory integration and reduce distress associated with mental health conditions. Furthermore, nurses collaborate with mental health professionals to develop holistic care plans that address both mental health and sensory needs, ensuring comprehensive support for patients.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Mental Health and Sensory Perception

Mental health plays a crucial role in shaping sensory perception, influencing how individuals interpret and respond to sensory stimuli. Here's how Quality and Safety Education for Nurses (QSEN) competencies guide nursing practice in addressing mental health impacts on sensory perception:

- Quality improvement:
  - Nurses conduct thorough assessments of sensory perception in individuals with mental health conditions, identifying alterations or deficits in sensory processing.
  - Based on assessment findings, nurses implement evidence-based interventions to address sensory perception challenges and enhance quality of life for individuals with mental health disorders.
- Patient-centered care:
  - Nurses recognize the individualized nature of sensory experiences in mental health, considering factors such as diagnosis, symptom severity, and personal preferences when developing care plans.
  - Nurses involve individuals with mental health conditions in decision-making regarding sensory interventions, promoting autonomy and empowerment in sensory perception management.
- Safety:
  - Nurses implement safety measures to minimize the risk of falls related to sensory perception deficits, such as ensuring clear pathways and using appropriate assistive devices.
  - Nurses make environmental adjustments to promote sensory safety, reducing sensory overload and creating calming spaces for individuals with mental health disorders.
- Teamwork and collaboration:
  - Nurses collaborate with mental health professionals to coordinate sensory assessment and intervention strategies, ensuring holistic care for individuals with mental health conditions.
  - Nurses connect individuals with mental health disorders to community resources and support services that address sensory perception challenges and promote well-being.
- Evidence-based practice (EBP):
  - Nurses integrate current evidence into the assessment and management of sensory perception in mental health, staying informed about emerging research and interventions.
  - Nurses evaluate the effectiveness of sensory perception interventions in individuals with mental health conditions, adjusting care plans as needed to optimize outcomes.
- Informatics:
  - Nurses utilize electronic health records to document sensory perception assessments, interventions, and outcomes in individuals with mental health disorders, ensuring comprehensive and accurate recordkeeping.
  - Nurses analyze sensory perception data to identify trends and patterns in individuals with mental health conditions, informing evidence-based practice and quality improvement initiatives.

By integrating QSEN competencies into nursing practice, nurses can address the complex relationship between mental health and sensory perception, promoting safety, well-being, and quality of life for individuals with mental health disorders.

Personality and Behaviors

Personality traits and behaviors play a significant role in shaping sensory perception, influencing how individuals process and respond to sensory stimuli. Personality traits such as **extraversion** (personality trait characterized by sociability, outgoingness, and a preference for social interactions), neuroticism (personality trait characterized by emotional instability, negative affectivity, and a tendency to experience distress, anxiety, and mood swings), or **sensation seeking** (tendency to seek out novel, varied, and intense experiences) can impact sensory sensitivity, preferences, and thresholds. For example, individuals high in sensation seeking may actively seek out novel or intense sensory experiences, whereas those high in neuroticism may be more sensitive to sensory stimuli and prone to heightened emotional reactions. Additionally, individual behaviors, habits, and coping strategies can influence sensory perception. Engaging in mindfulness practices, relaxation techniques, or exposure therapy can modulate

sensory processing and enhance sensory awareness. Conversely, maladaptive behaviors such as avoidance or sensory overload can exacerbate sensory difficulties and impair sensory functioning.

Nurses should conduct thorough assessments to identify personality characteristics and behaviors that may affect sensory processing, as appropriate. For example, nurses may assess patients with high levels of anxiety or stress for alterations in sensory perception, such as heightened sensitivity or reduced attention to sensory stimuli. Additionally, nurses monitor patients with specific personality traits, such as sensation-seeking behaviors, for potential risks associated with sensory experiences, such as engaging in risky behaviors or seeking intense sensory stimulation.

Nursing interventions may include providing education and support to patients to help them understand how their personality and behaviors influence sensory perception and offering coping strategies to manage sensory-related challenges effectively. Furthermore, nurses collaborate with multidisciplinary teams, including psychologists or counselors, to develop individualized care plans that address both personality traits and sensory needs, ensuring comprehensive support for patients.

Cultural Considerations

Cultural considerations exert a profound influence on sensory perception, shaping individuals' experiences and interpretations of sensory stimuli within their social and cultural contexts. Cultural norms, values, beliefs, and practices influence how individuals perceive, prioritize, and respond to sensory information. For example, cultural differences in food preferences and culinary traditions can influence taste perception, with certain cultures valuing spicy or aromatic flavors more than others. Similarly, cultural norms regarding touch, personal space, and physical contact can impact tactile sensitivity and comfort levels during social interactions. Moreover, cultural beliefs about illness, healing, and the body-mind connection can influence individuals' perceptions of pain and discomfort. The diversity of cultural perspectives on sensory processing and perception highlights the significance of taking sociocultural factors into account when comprehending and managing challenges related to the senses. By acknowledging the cultural diversity of sensory experiences, healthcare providers can develop culturally sensitive interventions and strategies to support individuals in navigating their sensory worlds effectively within their cultural contexts.

Nurses play a pivotal role in assessing and addressing how cultural beliefs, values, and practices can impact sensory function and perception. One key nursing intervention involves conducting culturally sensitive assessments to identify how cultural factors may influence sensory processing. For example, nurses may explore cultural norms regarding touch, pain expression, or sensory preferences to understand how patients perceive and experience sensory stimuli differently based on their cultural background. Additionally, nurses collaborate with patients and their families to respect and accommodate cultural preferences related to sensory experiences, such as incorporating traditional healing practices or adjusting environmental stimuli to align with cultural beliefs.

Nursing interventions may include providing education and support to patients to help them navigate cultural differences in sensory perception and promoting culturally relevant coping strategies to manage sensory-related challenges effectively. Furthermore, nurses advocate for culturally inclusive care practices within healthcare settings, ensuring that all patients receive equitable access to sensory support and interventions.

PATIENT CONVERSATIONS

Culture-Centered Care: Enhancing Patient Experience through Sensory Considerations

Nurse: Good afternoon, Mr. Patel. How are you feeling today?

Patient: Hello, nurse. I'm feeling a bit disoriented, to be honest. Everything seems so different here compared to back home.

Nurse: I understand. It can be quite an adjustment being in a new environment, especially when it comes to your senses. Could you tell me more about what you're experiencing?

Patient: Well, for starters, the lighting in this room is much brighter than what I'm used to. In my culture, we tend to prefer softer, dimmer lighting, which helps create a more calming atmosphere.

Nurse: I see. We can certainly adjust the lighting in your room to better suit your comfort level. Would you prefer a softer, dimmer setting?

Patient: Yes, that would be great, thank you. Also, the food here tastes very different from what I'm accustomed to. In my culture, we use a lot of spices and herbs in our cooking, which gives our meals a rich and flavorful taste.

Nurse: Your cultural culinary preferences are important to consider. We can speak with the kitchen staff to see if they can incorporate more spices and herbs into your meals to better align with your taste preferences.

Patient: Thank you, nurse. I really appreciate your understanding. Oh, and one more thing, the noise levels in the hospital are much higher than I'm used to. In my culture, we value quiet environments that promote relaxation and concentration.

Nurse: I completely understand. We can explore options to make your environment more conducive to relaxation and concentration, such as providing earplugs or finding a quieter area for you.

Patient: That would be wonderful, thank you. I feel much better knowing that you're taking my cultural considerations into account.

Nurse: It's my pleasure, Mr. Patel. Your cultural background and comfort are important aspects of your care. If there's anything else you need or if you have any other concerns, please don't hesitate to let me know.

Medications Affecting Sensory Perception

Whether by suppressing or alerting the central nervous system (CNS), medications can modulate neural activity and neurotransmitter function, leading to changes in sensory awareness, sensitivity, and processing. Certain medications have the potential to induce taste alterations (e.g., amoxicillin, Paxlovid, chemotherapy, selective serotonin reuptake inhibitors, haloperidol) or exert **ototoxic** effects (medications that have the potential to cause damage to the structures of the inner ear or the auditory nerve) (e.g., furosemide, chemotherapy), further complicating their impact on sensory perception. Taste alterations may manifest as a metallic or bitter taste, diminishing the enjoyment of food and potentially affecting nutritional intake (Schiffman, 2018). Ototoxic medications can harm the delicate structures of the inner ear, leading to hearing loss or balance disturbances (Cone et al., n.d.). Understanding the effects of medications on sensory perception is essential for nurses to anticipate and manage potential sensory-related symptoms or side effects in patients.

Medications that Suppress the Central Nervous System

Medications that suppress the CNS can significantly impact sensory perception by altering neural activity and neurotransmitter function within the brain (Table 29.6). These medications, which include benzodiazepines, opioids, and certain antipsychotics, work by depressing CNS activity, leading to sedation, relaxation, and pain relief. However, one of the common side effects of CNS depressants is a reduction in sensory awareness and perception. For example, benzodiazepines, commonly used to treat anxiety and insomnia, can cause drowsiness and cognitive impairment, which may dull sensory experiences. Similarly, opioids, prescribed for pain management, can induce feelings of euphoria and drowsiness, potentially blunting sensory responses to external stimuli. Certain antipsychotic medications, used to treat psychiatric disorders such as schizophrenia, may also have sedative effects that impact sensory perception (Melinosky, 2023).

Medication Name	Effect on Central Nervous System	Examples
Benzodiazepines	Sedation	alprazolam (Xanax) diazepam (Valium)
Opioids	Respiratory depression	morphine hydrochloride (morphine) oxycodone hydrochloride (oxycodone)

TABLE 29.6 Medications that Suppress the Central Nervous System

Medication Name	Effect on Central Nervous System	Examples
Antidepressants	Sedation	sertraline (Zoloft) fluoxetine hydrochloride (Prozac)
Antipsychotics	Sedation	haloperidol (Haldol) olanzapine (Zyprexa)
Anticonvulsants	Sedation	valproate sodium (Depakote) gabapentin (Neurontin)
Muscle relaxants	Muscle relaxation	cyclobenzaprine (Flexeril) baclofen
Antihistamines	Sedation and drowsiness	diphenhydramine (Benadryl) cetirizine hydrochloride (Zyrtec)

TABLE 29.6 Medications that Suppress the Central Nervous System

Nurses should assess and monitor patients for potential adverse effects associated with CNS depressants, implement interventions to mitigate these effects, and promote patient safety and comfort. One essential nursing intervention involves conducting a thorough assessment of the patient's medical history, including any preexisting conditions or medications that may interact with CNS depressants. This assessment helps nurses identify patients who may be at higher risk for adverse reactions, such as older adults or those with respiratory conditions.

LIFE-STAGE CONTEXT

Age-Related Considerations: Medications that Suppress the Central Nervous System and Sensory Perception

As individuals age, they may be more susceptible to the effects of medications that suppress the CNS, leading to alterations in sensory perception. Here are some age-related considerations regarding the use of CNS-suppressing medications:

- Increased sensitivity: Older adults often experience heightened sensitivity to CNS-suppressing medications due to age-related changes in metabolism, liver function, and drug clearance. This increased sensitivity can amplify the sedative effects of these medications, affecting sensory awareness and perception.
- Risk of falls: Medications that suppress the CNS medications, such as benzodiazepines, opioids, and certain antipsychotics, can impair balance, coordination, and reaction times, increasing the risk of falls and injuries, particularly among older adults. Changes in sensory perception may further exacerbate these risks, as individuals may have difficulty detecting environmental hazards or maintaining stability.
- Cognitive impairment: Some CNS-suppressing medications have been associated with cognitive impairment, including confusion, memory loss, and disorientation, especially in older adults with preexisting cognitive conditions such as dementia or Alzheimer disease. These cognitive effects can impact sensory processing and contribute to sensory disturbances or distortions.
- Medication interactions: Older adults often take multiple medications simultaneously, increasing the risk of drug interactions and adverse effects on sensory perception. Some CNS-suppressing medications may interact with other drugs, such as antihypertensives or antidepressants, leading to additive CNS depression and sensory impairment.
- Monitoring and adjustment: Healthcare providers should carefully monitor older adults receiving CNS-suppressing medications for signs of sensory impairment, cognitive decline, or adverse reactions. Regular medication reviews and dose adjustments may be necessary to minimize sensory-related symptoms and optimize therapeutic outcomes while reducing the risk of adverse events.

By considering these age-related factors and implementing appropriate monitoring and management strategies, healthcare providers can ensure the safe and effective use of CNS-suppressing medications in older adults while minimizing the impact on sensory perception and overall well-being.

Monitoring patients closely for signs of CNS depression is another critical nursing responsibility. Nurses should regularly assess vital signs, level of consciousness, respiratory rate, and other indicators of CNS function to promptly detect any changes or abnormalities. Patients receiving CNS depressants may exhibit symptoms such as drowsiness, confusion, respiratory depression, or hypotension, which require prompt intervention. In addition to monitoring, nurses can implement various interventions to prevent or manage adverse effects associated with CNS depressants. These interventions may include positioning the patient to optimize ventilation, providing supplemental oxygen if necessary, encouraging deep breathing exercises to prevent respiratory complications, and promoting mobility to prevent complications such as venous thromboembolism.

Furthermore, patient education plays a crucial role in preventing adverse reactions to CNS depressants. Nurses should educate patients and their families about the potential side effects of these medications, signs of overdose or toxicity, and strategies to promote safety and well-being while taking CNS depressants. This may involve providing information on medication adherence, avoiding alcohol and other CNS depressants, and seeking medical assistance if experiencing concerning symptoms.

Medications that Alert the Central Nervous System

Medications that stimulate or alert the CNS can have profound effects on sensory perception by enhancing neural activity and neurotransmitter function within the brain (Table 29.7). These medications, such as stimulants like amphetamines and caffeine, work by increasing the release of neurotransmitters such as dopamine and norepinephrine, which play key roles in arousal, attention, and alertness. As a result, individuals taking CNS stimulants may experience heightened sensory awareness, increased focus, and enhanced perception of sensory stimuli. For example, caffeine, commonly found in coffee and energy drinks, can improve alertness and concentration, leading to sharper sensory perception and quicker reaction times. Similarly, medications used to treat ADHD, such as methylphenidate and dextroamphetamine, can improve attention and focus, potentially enhancing sensory processing abilities. However, excessive CNS stimulation can also lead to side effects such as anxiety, agitation, and sensory overload, highlighting the need for careful monitoring and dosage management when using medications that alert the CNS (Pope, 2023).

Medication Class	Effect on Central Nervous System	Example
Amphetamines	Increased alertness	dextroamphetamine sulfate-dextroamphetamine saccharate-amphetamine aspartate- amphetamine sulfate (Adderall); dextroamphetamine (Dexedrine)
Analeptics	Enhanced alertness	modafinil (Provigil)
Methylxanthines	Heightened awareness	caffeine
Nicotinic agonists	Increased arousal	nicotine
Piperidine derivatives	Increased focus	methylphenidate hydrochloride (Ritalin; Concerta)

TABLE 29.7 Medications that Alert the Central Nervous System

Nurses play a key role in assessing patients' suitability for CNS stimulant medications, monitoring their response to treatment, and implementing interventions to minimize adverse effects while maximizing benefits. One essential nursing intervention involves conducting a thorough assessment of the patient's medical history, including any preexisting conditions or medications that may interact with CNS stimulants. This assessment helps nurses identify

patients who may benefit from CNS stimulant therapy while also identifying those at higher risk for adverse reactions, such as individuals with cardiovascular disease or a history of substance abuse.

Additionally, nurses play a crucial role in monitoring patients for signs of CNS stimulation, such as increased heart rate, blood pressure, or agitation. Regular assessments of vital signs and behavior help nurses identify any adverse reactions promptly, allowing for timely intervention. If patients experience side effects or complications related to CNS stimulation, nurses can implement various interventions to address these issues. This may include providing reassurance, offering supportive care, adjusting medication dosages or schedules, or collaborating with other healthcare providers to explore alternative treatment options.

REAL RN STORIES

Medications Stimulating the Central Nervous System and Impact on Sensory Perception

Nurse: Morton, BSN
Clinical setting: Pulmonary unit
Years in practice: 6
Facility location: Norfolk, Virginia

I remember caring for a patient, Mrs. Ramirez, who was admitted to the hospital for acute respiratory distress. Mrs. Ramirez was prescribed a combination of bronchodilators and corticosteroids to manage her respiratory symptoms and improve her breathing. These medications, while essential for treating her condition, had notable effects on her sensory perception. Throughout my shifts, I observed Mrs. Ramirez's response to the medications closely. Initially, she exhibited signs of heightened alertness and agitation, which are common side effects of medications that stimulate the CNS. Mrs. Ramirez reported feeling jittery and restless, and she struggled to relax or sleep comfortably.

Recognizing the impact of these medications on Mrs. Ramirez's sensory perception, I collaborated with the healthcare team to implement strategies to mitigate their effects. We adjusted the timing of medication administration to minimize disruptions to Mrs. Ramirez's sleep-wake cycle and incorporated relaxation techniques, such as deep breathing exercises and guided imagery, to promote a sense of calm and comfort. Over time, Mrs. Ramirez's sensory perception began to stabilize, and she reported feeling more at ease and less agitated. By closely monitoring her response to the medications and tailoring our interventions accordingly, we were able to optimize her sensory experience and support her overall well-being during her hospitalization.

My experience with Mrs. Ramirez reaffirmed the importance of individualized medication management and its impact on sensory perception. Through proactive assessment and targeted interventions, healthcare providers can ensure that patients receive effective treatment while minimizing the adverse effects on their sensory function.

Furthermore, patient education is essential in ensuring safe and effective medication use. Nurses should educate patients and their families about the purpose of CNS stimulant medications, potential side effects, and strategies to minimize risks. This may involve discussing medication adherence, lifestyle modifications, and the importance of regular follow-up appointments to monitor treatment effectiveness and safety.

Disorders that Alter Sensory Perception

Disorders that alter sensory perception encompass a diverse range of conditions that affect the processing and interpretation of sensory stimuli. These disorders can impact various sensory modalities, including touch, taste, smell, hearing, and vision, leading to disturbances in sensory experiences. Whether due to neurological, developmental, psychological, or environmental factors, these disorders pose significant challenges for individuals in navigating their surroundings and engaging with their environment. Understanding the nature and effects of these disorders is essential for nurses to provide comprehensive care and support to affected individuals. Through tailored interventions and support strategies, individuals with sensory perception disorders can better manage their symptoms and enhance their overall quality of life.

Sensory Modulation Disorder

The condition **sensory modulation disorder (SMD)** is characterized by atypical responses to sensory stimuli,

resulting in difficulties regulating and processing sensory information. Individuals with SMD may experience sensory overresponsivity, where they are hypersensitive to certain stimuli, such as loud noises or bright lights, leading to intense emotional or behavioral reactions. Conversely, others may exhibit sensory underresponsivity, where they have a reduced awareness or responsiveness to sensory input, often appearing disengaged or withdrawn. Additionally, individuals with SMD may demonstrate sensory-seeking behaviors, actively seeking out sensory stimulation to regulate their arousal levels. These sensory modulation challenges can significantly impact daily functioning, affecting an individual's ability to participate in various activities and engage with their environment. Treatment for SMD typically involves sensory integration therapy, which aims to help individuals regulate their sensory responses and develop coping strategies to manage sensory challenges effectively (Brain Therapy, 2023; STAR Institute, n.d.).

Nursing interventions for SMD focus on helping individuals regulate their sensory responses and develop coping strategies to manage sensory challenges effectively. One essential intervention involves conducting thorough assessments to identify the specific sensory modulation difficulties experienced by the individual. Nurses collaborate with occupational therapists and other healthcare professionals to develop individualized sensory integration therapy plans tailored to the individual's needs and preferences. These therapy plans may include sensory-based activities and exercises aimed at desensitizing hypersensitive responses, increasing sensory awareness in individuals with underresponsivity and providing sensory input to meet the needs of individuals with sensory-seeking behaviors. Additionally, nurses educate individuals and their families about SMD, helping them understand the condition and its impact on daily functioning. Nurses provide guidance on environmental modifications to create sensory-friendly spaces and teach relaxation techniques and self-regulation strategies to help individuals cope with sensory challenges in various settings.

CLINICAL JUDGMENT MEASUREMENT MODEL

Form a Hypothesis: Sensory Modulation Disorder

Scenario: Sam, a pediatric nurse, is caring for a 6-year-old patient, Alex, who has been diagnosed with SMD. Alex presents with symptoms of hypersensitivity to auditory stimuli, often becoming overwhelmed and distressed in noisy environments such as the hospital playroom.

- Identify cues: While observing Alex during playroom activities, Sam notices that he covers his ears and becomes visibly distressed whenever other children engage in loud play or when medical equipment emits beeping sounds. Alex's heightened sensitivity to auditory stimuli is evident in his behavioral response to noise, suggesting a potential sensory modulation issue.
- Analyze cues: Reflecting on Alex's behavior, Sam considers the context of his reactions and compares them to expected responses for his age and developmental stage. He notes that Alex's sensitivity to auditory stimuli significantly impacts his ability to participate in age-appropriate activities and social interactions, highlighting the potential impact on his daily functioning.
- Forming a hypothesis: Based on his assessment of Alex's behavior and symptoms, Sam forms a hypothesis that he may be experiencing sensory modulation difficulties, specifically hypersensitivity to auditory stimuli. He considers how this sensory issue may contribute to Alex's challenges in navigating his environment and interacting with others, prompting him to explore interventions to support his sensory needs.

This clinical judgment measurement model provides a structured approach for nurses like Sam to assess and address sensory modulation issues such as sensory modulation disorder (SMD) in pediatric patients. By identifying relevant cues, analyzing their significance, and forming hypotheses based on observed behaviors, nurses can develop tailored interventions to promote optimal sensory functioning and improve patient outcomes.

Sensory-Based Motor Disorder

A **sensory-based motor disorder (SBMD)** is a condition characterized by challenges in coordinating motor movements due to underlying sensory processing difficulties. Individuals with SBMD may experience disruptions in their ability to plan, execute, and control movements, resulting in motor coordination deficits. These deficits can

manifest in various ways, such as difficulties with balance, posture, fine motor skills, and gross motor coordination. Individuals with SBMD may struggle with tasks requiring precise movements, such as writing or tying shoelaces, and may appear clumsy or uncoordinated in their movements. Additionally, sensory processing challenges, such as hypersensitivity or hyposensitivity to tactile, proprioceptive, or vestibular input, can further exacerbate motor coordination difficulties (STAR Institute, n.d.).

Nurses play a crucial role in collaborating with interdisciplinary teams to develop individualized care plans tailored to the specific needs of each patient. One key intervention involves conducting comprehensive assessments to identify motor coordination deficits and sensory processing difficulties. Nurses work closely with occupational therapists and physical therapists to implement therapeutic interventions aimed at improving motor skills and sensory integration. These interventions may include sensory integration therapy sessions, which involve engaging in activities that provide sensory input to support motor coordination development. Nurses also educate individuals and their families about SBMD, helping them understand the condition and its impact on daily functioning. They provide guidance on techniques and strategies to promote motor skill development, such as practicing balance exercises or using adaptive equipment to support activities of daily living. Additionally, nurses advocate for environmental modifications to create sensory-friendly spaces that accommodate the individual's sensory needs and promote safety and independence.

Sensory Discrimination Disorder

The condition **sensory discrimination disorder (SDD)** is characterized by difficulties in accurately interpreting and distinguishing between sensory stimuli. Individuals with SDD may struggle to perceive and differentiate sensory input, leading to challenges in recognizing and interpreting sensory information. This can affect various sensory modalities, including tactile, auditory, visual, and olfactory sensations. For example, individuals with SDD may have difficulty distinguishing between textures or temperatures when touching objects, identifying speech sounds in noisy environments, recognizing facial expressions or visual patterns, or discriminating between different smells or tastes. These difficulties in sensory discrimination can impact daily functioning and may interfere with activities such as communication, social interactions, and learning (STAR Institute, n.d.).

Nurses play a vital role in supporting individuals to improve their ability to interpret and differentiate sensory stimuli accurately. Nursing interventions typically begin with a comprehensive assessment to identify specific challenges related to sensory discrimination. Nurses work collaboratively with occupational therapists and other healthcare professionals to develop personalized care plans tailored to the individual's needs. Interventions may involve sensory integration therapy sessions, which aim to enhance sensory processing abilities and refine sensory discrimination skills. Additionally, nurses provide education to individuals and their families about SDD, helping them understand the condition and its impact on daily life. Nurses offer guidance on strategies and techniques to improve sensory discrimination, such as sensory-focused activities and environmental modifications.

Summary

29.1 Sensory Functioning

Sensory perception is the process through which individuals gather information from the environment via senses like sight, hearing, touch, taste, and smell, interpreting it to understand and interact with surroundings. Each sensory modality, including vision, hearing, smell, taste, and touch, plays a unique role in providing valuable information about the environment. Auditory perception involves the reception of sound waves by the ear, which are transmitted and interpreted by the nervous system, allowing for the perception and understanding of sound. Visual perception entails the interpretation of light stimuli by the visual system, forming perceptions such as shapes and colors, while olfactory and gustatory perception involve the detection and interpretation of smells and tastes, respectively. Additionally, tactile perception enables the detection and interpretation of touch sensations, guiding interactions with objects and the physical environment. Complementing the primary senses, kinesthetic senses provide feedback about body movement and position, while visceral senses monitor internal bodily sensations, collectively enriching the sensory experience and influencing behaviors and well-being.

The reticular activating system (RAS) plays a crucial role in regulating wakefulness and maintaining consciousness by filtering sensory stimuli and modulating arousal levels in the brain. Identifying the different states of arousal of the brain involves recognizing variations in consciousness, ranging from alertness and wakefulness to drowsiness, sleep, and coma, each influenced by complex interactions within the brain's neural networks. Adaptation allows the sensory systems to adjust to constant stimuli, ensuring efficient processing of relevant information. Sensoristasis refers to the optimal arousal level for sensory perception and cognitive function, maintaining a balance between under- and overstimulation. Awareness encompasses conscious experiences, including sensory perceptions, thoughts, and emotions, while conscious and unconscious states represent different levels of awareness and responsiveness to external stimuli.

29.2 Impaired Sensory Function

Sensory overload occurs when individuals are exposed to an overwhelming amount of sensory stimuli, leading to difficulties in processing and integrating information effectively. This can lead to symptoms such as irritability, agitation, anxiety, and fatigue, activating the body's stress response. Conversely, sensory deprivation refers to the absence or reduction of normal sensory inputs, resulting in decreased stimulation and potential cognitive deficits, altered perception of time, and emotional distress. Recognizing alterations in sensory perception involves identifying changes in how individuals interpret and respond to sensory stimuli, which can manifest as sensory deficits and sensory processing disorder (SPD). These alterations can significantly impact daily functioning, social interactions, and emotional well-being, necessitating tailored interventions to support individuals experiencing such changes.

29.3 Factors Affecting Sensory Function

Physiological factors affecting sensory perception encompass various elements such as developmental stage, age, current health status, and genetics, all of which can influence how individuals perceive and interpret sensory stimuli. Psychosocial factors affecting sensory perception include mental health conditions, personality traits, behaviors, and cultural considerations, which can significantly impact an individual's sensory experiences and responses. Medications affecting sensory perception range from those that suppress the CNS to those that stimulate it, altering sensory processing and perception. Disorders affecting sensory perception, such as sensory modulation disorder (SMD), sensory-based motor disorder (SBMD), and SDD, disrupt the normal processing of sensory information, leading to challenges in interpreting and responding to sensory stimuli.

Key Terms

adaptation the process by which sensory systems adjust to ongoing stimuli, optimizing processing efficiency

alert a state of heightened wakefulness, attentiveness, and responsiveness in which an individual is fully awake, aware of their surroundings, and capable of actively engaging with stimuli and tasks

altered consciousness any deviation from the normal waking state of consciousness, characterized by changes in perception, cognition, or awareness

anhedonia reduced sensory pleasure and decreased interest in sensory experiences

asleep a natural state of rest characterized by reduced consciousness, diminished responsiveness to external

stimuli, and altered brain activity during sleep

auditory sensory perception the process by which the auditory system receives, transmits, and interprets sound stimuli from the environment

awareness conscious perception and understanding of oneself, one's surroundings, and the experiences that arise from sensory input and cognitive processes

coma a profound state of unconsciousness characterized by a complete loss of consciousness, absence of wakefulness, and lack of response to external stimuli

conscious states range of mental experiences and subjective awareness that individuals perceive as part of their waking life

extraversion personality trait characterized by sociability, outgoingness, and a preference for social interactions

Glasgow Coma Scale (GCS) a neurological assessment tool used to evaluate a patient's level of consciousness and neurological function

gustatory sensory perception the ability to detect and interpret tastes using the gustatory system

kinesthetic sense (also, proprioceptive sense) the sense of body awareness and movement control

lethargic a state of drowsiness, sluggishness, and reduced energy levels in which an individual appears excessively tired or fatigued

neural plasticity the brain's ability to reorganize and adapt its structure and function in response to changes

obtundation a state of decreased alertness and responsiveness in which an individual opens their eyes in response to tactile stimuli or other external cues but responds slowly and may appear confused or disoriented

olfactory sensory perception the ability to detect and interpret smells using the olfactory system

ototoxic medications that have the potential to cause damage to the structures of the inner ear or the auditory nerve

proprioceptors specialized sensory receptors located in muscles, tendons, and joints that detect changes in muscle length, tension, and joint position, providing continuous feedback to the brain about the body's position in space

reticular activating system (RAS) a crucial neural network in the brainstem responsible for regulating arousal, attention, and consciousness

sensation seeking tendency to seek out novel, varied, and intense experiences

senses physiological mechanisms by which organisms perceive and respond to stimuli from their environment

sensoristasis balance between under- and overstimulation, optimizing arousal levels for sensory perception and cognitive function

sensory deficit impairment or loss in one or more sensory modalities, such as vision, hearing, touch, taste, or smell

sensory deprivation refers to the absence or reduction of normal sensory inputs, leading to a state of decreased stimulation and sensory isolation

sensory discrimination the brain's ability to interpret and distinguish between different sensory stimuli

sensory discrimination disorder (SDD) a condition characterized by difficulties in accurately interpreting and distinguishing between sensory stimuli

sensory integration the brain's ability to organize and make sense of information received through the senses

sensory modulation the brain's ability to regulate and respond appropriately to sensory stimuli from the environment

sensory modulation disorder (SMD) a condition characterized by atypical responses to sensory stimuli, resulting in difficulties regulating and processing sensory information

sensory overload occurs when an individual is exposed to an excessive amount of sensory stimuli that overwhelms their ability to process and integrate information effectively

sensory perception process by which organisms gather information from the environment through the senses (such as sight, hearing, touch, taste, and smell) and interpret and make sense of that information

sensory processing disorder (SPD) a neurological condition that affects how individuals process and respond to sensory information from the environment

sensory-based motor disorder (SBMD) a condition characterized by challenges in coordinating motor movements due to underlying sensory processing difficulties

states of arousal levels of physiological and psychological alertness and responsiveness exhibited by an individual

stupor a state of reduced consciousness marked by extreme lethargy, diminished responsiveness, and a significant decrease in alertness and awareness

tactile sensory perception the ability to detect and interpret touch sensations
unconscious states mental processes and activities that occur without conscious awareness or voluntary control
vegetative state (also, unresponsive wakefulness syndrome) a condition marked by wakefulness without awareness, in which the individual appears awake but lacks meaningful responsiveness
visceral sense (also, interoceptive sense) responsible for detecting and monitoring internal body sensations such as hunger, thirst, pain, and visceral organ function
visual sensory perception the process by which the visual system detects, interprets, and makes sense of visual stimuli

Assessments

Review Questions

1. The nursing student is reviewing sensory perception with the preceptor. What statement made by the nursing student would indicate an accurate understanding of sensory perception?
   a. "Senses refer to the psychological mechanisms by which individuals perceive and respond to stimuli from their environment."
   b. "Kinesthetic senses are important because they play a crucial role in body awareness and movement control."
   c. "Senses typically become more refined and detect more subtle changes as individuals age."
   d. "Olfactory sensory perception is important because it enables individuals to distinguish between different tastes."

2. What sense is primarily responsible for indicating hunger?
   a. visceral
   b. kinesthetic
   c. gustatory
   d. olfactory

3. What is adaptation in the context of sensory processing?
   a. the process of maintaining arousal levels
   b. the conscious perception of oneself and surroundings
   c. the modulation of attentional resources
   d. the adjustment of sensory systems to ongoing stimuli

4. What does sensoristasis involve maintaining a balance between?
   a. conscious and unconscious states
   b. sensory input and motor output
   c. under- and overstimulation
   d. sympathetic and parasympathetic activation

5. In conscious states, what brain regions are implicated in generating and sustaining conscious awareness?
   a. hippocampus and amygdala
   b. basal ganglia and cerebellum
   c. prefrontal cortex and thalamus
   d. occipital lobe and brain stem

6. What condition is associated with an increased risk of sensory overload?
   a. hypothyroidism
   b. ASD
   c. type 2 diabetes
   d. hypertension

7. What condition is associated with sensory deprivation?

a. ADHD
b. ASD
c. Alzheimer disease
d. PTSD

8. What is SPD?
a. loss of sensory function in one or more modalities
b. enhanced sensitivity to sensory stimuli
c. absence of sensory stimuli
d. a neurological condition affecting sensory processing

9. A patient with ASD is admitted to the emergency department and displays signs of sensory overload. What nursing intervention would be most beneficial for this patient?
a. dimming the lights in the room to reduce visual stimuli
b. engaging the patient in a group activity with other patients
c. administering a sedative medication to calm the patient
d. providing the patient with a strong-smelling lotion for relaxation

10. A patient in a hospital complains of feeling overwhelmed by the constant beeping of monitors and medical equipment. What intervention by the nurse would be most appropriate to address the patient's sensory overload?
a. providing a bright reading light to improve visibility
b. placing the patient in a room with large windows for natural light
c. offering noise-canceling headphones or earplugs to block out excessive noise
d. providing scented candles to create a calming atmosphere

11. What sensory perception change is commonly associated with aging?
a. improved vision acuity
b. enhanced taste sensitivity
c. diminished tactile sensation
d. increased auditory processing speed

12. Medications that suppress the CNS may lead to what sensory perception change?
a. increased sensory acuity
b. drowsiness and sedation
c. enhanced cognitive function
d. improved motor coordination

13. How is sensory modulation disorder described in terms of sensory perception?
a. difficulties in accurately interpreting sensory stimuli
b. hypersensitivity to certain stimuli
c. reduced awareness or responsiveness to sensory input
d. challenges in coordinating motor movements

14. What is a common manifestation of SBMD?
a. hypersensitivity to tactile stimuli
b. difficulties with balance and posture
c. challenges in accurately interpreting speech sounds
d. reduced awareness of environmental stimuli

15. What characterizes SDD?
a. hypersensitivity to olfactory stimuli
b. difficulties in motor coordination

c. reduced responsiveness to auditory input
d. challenges in accurately distinguishing between sensory stimuli

Check Your Understanding Questions

1. Name the five senses and describe how each of the senses affects sensory perception.
2. How does the sense of taste contribute to the perception of flavor?
3. Define sensory deprivation and its impact on individuals' well-being.
4. Explain the difference between sensory deprivation and sensory deficit, providing examples of each.
5. How do mental health conditions such as anxiety and depression influence sensory perception?
6. What are some potential complications of sensory overload in patients taking medications that alert the CNS?

Reflection Questions

1. A patient experiences confusion following a head injury. What assessments should the nurse prioritize to evaluate the function of the RAS?
2. Reflect on the importance of maintaining patient safety during transitions between different states of arousal. How can effective communication and teamwork contribute to this goal?
3. An older adult reports changes in taste perception. What interventions should the nurse implement?
4. Reflect on the impact of environmental factors, such as noise and lighting, on patients' sensory experiences. How can nurses advocate for changes to create more sensory-friendly environments?
5. How do nurses ensure cultural sensitivity when assessing patients' sensory perception?

What Should the Nurse Do?

1. What should the nurse prioritize when caring for a patient experiencing alterations in states of arousal?
2. How should the nurse advocate for changes in the healthcare environment to accommodate patients with altered sensory perception, such as those with ASD?
3. A patient with sensation-seeking behaviors seeks intense sensory experiences. How can the nurse ensure the patient's safety while addressing their sensory needs?
4. A patient reports experiencing dizziness and blurred vision after taking a newly prescribed medication that suppresses the CNS. What should the nurse do first?

Competency-Based Assessments

1. Outline the key components of nursing interventions for unconscious states.
2. Determine and interpret the GCS score for the following scenarios:
    a. Scenario 1: Joel, a 45-year-old construction worker, was brought into the emergency department after falling from a height at a construction site. On arrival, Joel is unconscious and unresponsive. He has a laceration on his forehead and is bleeding profusely.
    b. Scenario 2: Maggie, a 20-year-old college student, was involved in a motor vehicle accident. Emergency medical services bring her to the hospital with complaints of severe headache and confusion. On examination, Maggie is conscious but disoriented. Her eyes open spontaneously, and she obeys commands. She is unable to provide coherent answers to questions about the accident and appears drowsy.

Scenario: Shanda, a 25-year-old patient with a history of ADHD, is admitted to the inpatient unit following a severe asthma exacerbation. She is receiving IV steroid therapy and supplemental oxygen due to respiratory distress. Despite her exhaustion from a sleepless night and the discomfort of her asthma symptoms, Shanda finds it challenging to rest in her hospital room. She is restless, tossing and turning in her bed, unable to find a comfortable

position. Shanda becomes increasingly irritable, snapping at nurses and expressing frustration with the constant beeping of IV pumps and monitors. Her attention is easily distracted, and she struggles to focus on conversations or instructions from healthcare providers.

3. Is Shanda experiencing sensory overload, sensory deprivation, sensory deficit, or SPD? Please explain your rationale.
4. Define the impaired sensory functioning identified in Question 1.
5. Identify at least three symptoms associated with the impaired sensory functioning identified in Question 1.
6. Identify critical nursing assessments the nurse should perform.
7. Identify possible nursing interventions the nurse could implement.
8. Outline the potential consequences of prolonged sensory deprivation on patient outcomes.
9. Complete the table, identifying the primary characteristics and manifestations of the disorders affecting sensory perception.

Disorder	Primary Characteristics	Manifestations
Sensory-based motor disorder (SBMD)		
Sensory discrimination disorder (SDD)		
Sensory modulation disorder (SMD)		

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CHAPTER 30
Pain Assessment

FIGURE 30.1 Pain is considered the fifth vital sign and an important aspect of a comprehensive assessment. When patients endure from impaired comfort and pain, nurses can provide compassionate patient-centered care. (credit: "RE:Union – A story of cancer in the family" by "mescon"/Flickr, CC BY 2.0)

CHAPTER OUTLINE

30.1 The Pain Process
30.2 Responses to Pain
30.3 Factors Affecting Pain
30.4 Pain Assessment
30.5 Pain Management

INTRODUCTION According to the International Association for the Study of Pain (2021b), pain is defined as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage." Pain can be acute or chronic, mild or severe, and expressed in many different ways. Pain is triggered by a perceived danger or stress and tells the body to withdraw from threatening stimuli. Most pain resolves after the painful stimulus is removed and the body has healed, but sometimes pain persists despite removal of the stimulus and apparent healing of the body.

Pain is a subjective experience and can be influenced by biological, psychological, and social factors. Pain affects people in every aspect of health care, requiring nurses to be able to assess, manage, and treat it. Pain is subjective, meaning the patient defines the pain (ANA Center for Ethics and Human Rights, 2018). Patients can express pain through verbal and nonverbal behaviors. Some patients may rate their pain on a pain scale while other patients can only exhibit nonverbal cues such as grimacing, crying, and vital sign changes.

Because the experience of pain has so many variables, pain assessment and management must be comprehensive to be effective. Nurses must perform frequent comprehensive pain assessments to determine what pain

interventions would be most effective for each patient. Pain management plans must be individualized and involve the patient and healthcare team. Pain is one of the most common reasons for patients seeking care, and treating pain must be a top priority for healthcare providers in all settings.

30.1 The Pain Process

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the physiologic process of pain
- Analyze the gate control theory of pain
- Identify the classifications of pain

In order to assess and manage pain effectively, nurses must first understand the physiologic process of pain. Painful stimuli travel through the central nervous system via the pain pathway to the brain where the brain processes and initiates a response. The body's response to pain is dependent on the classification of pain and any factors affecting pain.

Pain can be classified by duration, location, and cause. Pain can be acute, chronic, localized, referred, or idiopathic. Nurses must know how to classify pain to effectively treat the pain. Pain can also be affected by biological, psychological, and social factors. The patient's age, attitude, emotions, or culture can affect how they perceive pain and how they want the pain to be treated. All these factors play a role in how nurses approach pain management for each patient.

The Physiologic Process of Pain

Pain can be processed physiologically and emotionally through the body. Pain motivates the individual to withdraw from dangerous stimuli, to protect a damaged body part while it heals, and to avoid similar experiences in the future. Pain can resolve after the stimulus is removed and the body has healed, but sometimes pain persists. Pain can also occur in the absence of a stimulus, damage, or disease.

Sensory receptors in the peripheral nervous system called nociceptors play an important role in the pain process. A **nociceptor** is designed to respond to potentially damaging stimuli by sending nerve signals to the spinal cord and brain. The process by which painful stimuli are detected by nociceptors and begin to send the pain signals from the peripheral nervous system to the brain is called **nociception** (Chen et al., 2023). After nociception occurs, the body processes the pain through four major steps: transduction, transmission, perception, and modification (Figure 30.2).

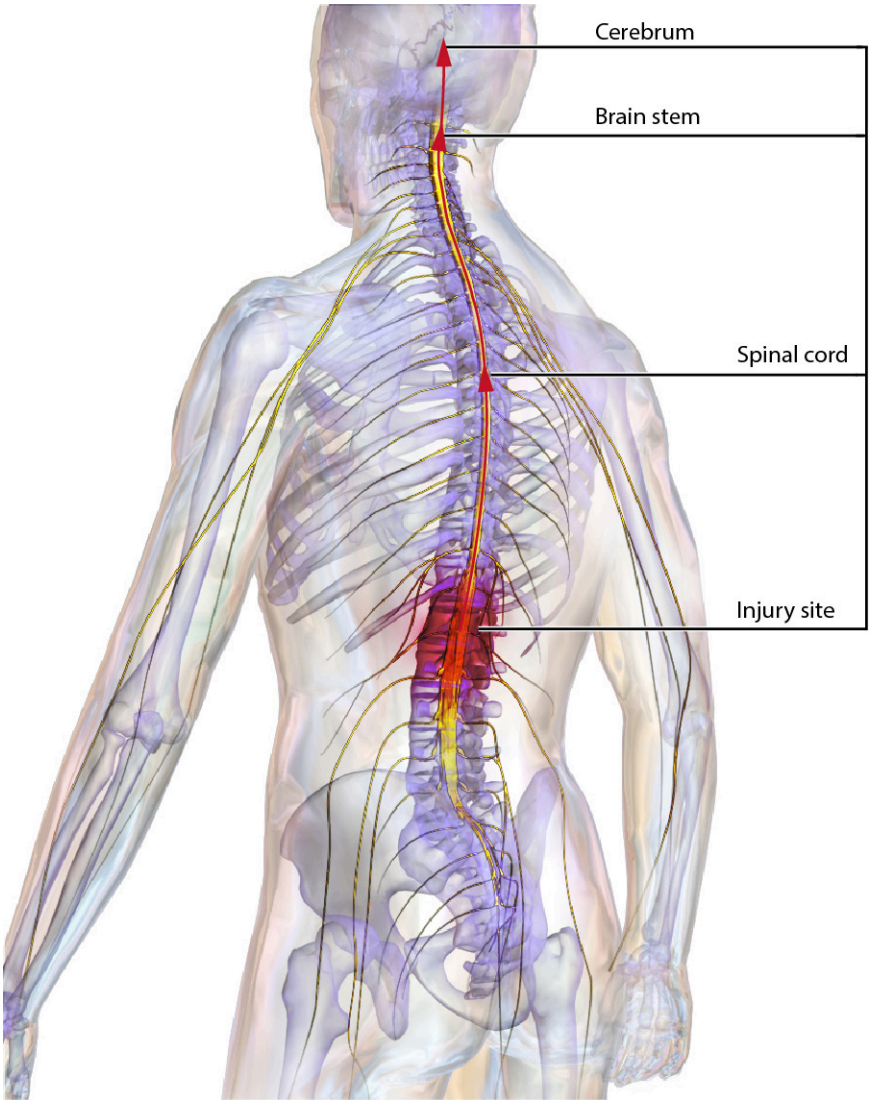

FIGURE 30.2 Nociception is the process by which the body sends painful stimuli from the peripheral nervous system to the brain, where it is processed and a response is formed. (credit: modification of "Blausen 0822 SpinalCord.png" by "BruceBlaus"/Wikimedia Commons, CC BY 3.0)

Transduction of Pain

The starting point of the body passing painful stimuli to the brain is called **transduction of pain**. It occurs when activated nociceptors in the peripheral nervous system send a pain signal to the central nervous system, starting in the dorsal root of the spinal cord (Yam et al., 2018). Activation of nociceptors can occur internally or externally, such as from a cut from a knife, an infection, or a sprained ankle (Answine, 2018).

There are several types and functions of nociceptors:

- Thermal nociceptors are activated by heat or cold, such as a hot pan.
- Mechanical nociceptors are activated by excess pressure or mechanical deformation, such as a finger getting caught in a car door. They also respond to incisions that break the skin surface.
- Chemical nociceptors are activated by a wide variety of spices commonly used in cooking. For example, capsaicin is a compound in chili peppers that causes a burning sensation of the mucous membranes.

Transduction of pain is the first step of the pain process. Once the spinal cord receives the pain signal, the next step is transmitting the pain signal from the spinal cord to the brain.

Transmission of Pain

The spinal cord, brain stem, and cerebral cortex are all involved in the transmission of pain (Yam et al., 2018). After the nociceptive signal is activated, **transmission of pain** sends the pain signal through the central nervous system.

The pain signal is sent from the spinal cord to the nucleus of the brain stem, which initiates the brain's perception of pain (Chen et al., 2023). The pain signal is categorized as a thermal, mechanical, or chemical nociceptor. The brain then localizes the pain and creates an appropriate physical or emotional response (Answine, 2018).

Perception of Pain

After the brain stem receives the pain signal, it is sent to the cerebral cortex where the brain perceives the severity of the pain. When the brain receives the nociceptive signal, it perceives the message as pain to activate the body's defense to the perceived threat (Yam et al., 2018). The perception of pain occurs when the brain becomes aware of the pain through the cerebral cortex and determines an appropriate response to protect the body (Answine, 2018). For example, when a person stubs their toe, the brain perceives the painful stimuli and signals the body to take action. The person may grab their foot or cry out to express their pain. Individuals may perceive pain differently and perception can be altered due to many different factors. Past experiences, external factors, other health issues, and environmental differences are just a few things that can affect the perception of pain.

Modification of Pain

There are many factors that can affect the perception of pain; and there may be situations where the brain may modify pain signals in order to protect the body. The **modification of pain** occurs when the brain changes the intensity of the pain signal based on the situation that originated the pain signal (Answine, 2018). For example, a person may get injured from a dog bite, but the brain chooses to ignore the pain signal so the person can run away from the dog.

A chemical called a **neurotransmitter** carries messages between neurons to communicate throughout the body. Many neurotransmitters, such as norepinephrine and serotonin, can be involved in modifying the pain signals the brain receives (Answine, 2018). Nonpainful signals, such as electrical nerve stimulation, touch, or pressure can help counteract the severity of the pain signals. This is part of the gate control theory of pain.

The Gate Control Theory of Pain

The gate control theory of pain was developed by Ronald Melzack and Patrick Wall in 1965. Their research helped explain how sensory and psychological aspects affect how patients perceive pain (Campbell et al., 2020). The gate control theory states that the central nervous system can use neurological "gates" to determine when pain is felt. These "gates" determine which pain signals are allowed through to the brain and acts as a survival mechanism for the body (Cleveland Clinic, 2022). When the "gates" are open, the pain signal can travel to the brain and be perceived as pain. When the "gates" are closed, the pain signal is blocked from traveling to the brain. If the body perceives pain in two different locations at the same time, one "gate" may close to prioritize a response for the other cause of pain. Individuals can also use methods such as massage and acupuncture to help the body close these "gates" to decrease painful stimuli.

LINK TO LEARNING

Watch this video to better understand the gate control theory (https://openstax.org/r/77gatecntrl) of pain.

The gate control theory states that different pain signals can be transmitted to the brain faster than others can. Signals such as touch or sensation can be received by the brain faster than signals that send pain or temperature to the brain (Cleveland Clinic, 2022). Stimulating signals such as pressure can help decrease the pain signals to the brain. This explains why clutching an injured extremity can help decrease the pain sensation.

The gate control theory acknowledges that there are many factors that can affect pain (Trachsel et al., 2023). Factors such as mental health disorders, mindset, stress, or lifestyle choices have been shown to affect how the brain perceives pain. These factors can prevent the "gates" from closing, which can increase the pain intensity and frequency.

Factors Affecting the Theory of Pain

Biological, psychological, and social factors can all affect how a patient perceives pain (Table 30.1). Nurses must

consider these factors while assessing and providing holistic nursing care for patients experiencing pain.

Biological Factors	Psychological Factors	Social Factors
• Age • Brain function • Cognitive function • Genetic sensitivity • Hormones • Illness • Inflammation • Injury, past or present • Medical diagnosis • Nociception • Obesity • Source of pain	• Anxiety • Attitudes • Beliefs • Coping mechanisms • Developmental stage • Emotional status • Expectations • Fatigue • Fear • Meaning of pain • Memory • Mood/affect • Sleep • Stress • Trauma	• Culture • Education • Environment • Ethnicity • Social support • Socioeconomic status • Spirituality • Values

TABLE 30.1 **Biological, Psychological, and Social Factors Affecting Pain**

Age is a significant biological factor in the perception of pain. Newborns and infants can feel pain but are unable to verbalize it. School-aged children and adolescents may try to be "brave" and rationalize the pain. Older adults are at increased risk for undertreatment of pain because they are less likely to report it and pain can present atypically with confusion and agitation. Older adults and patients with diabetes/neuropathy may also feel pain differently due to decreased sensations.

Psychological factors also play a considerable role in pain perception. A patient's expectations of pain can often increase or decrease the severity. If a patient believes they will have a lot of pain, their perception can increase. In contrast, if a patient believes an intervention will be effective, their pain may decrease (Heshmat, 2023). For example, a patient who believes physical therapy will decrease their pain may have better pain outcomes than a patient who believes physical therapy will not have any effect on their pain. The interpretation of pain can also have an impact on pain perception. How pain affects a patient's quality of life can change their perception of pain. For example, a patient who is having pain from chronic arthritis may perceive their pain differently than a patient who is having pain from delivering a baby (Heshmat, 2023).

It is important for nurses to understand how social factors can affect a patient's perception of pain. Factors such as culture and socioeconomic status can influence how a patient perceives and articulates their pain (Heshmat, 2023). Certain cultures may be more expressive in their pain than others, and patients may hide their pain in fear of judgment of their socioeconomic status. For example, people from Asian cultures are more stoic and less vocal, while people from Middle Eastern cultures may be more vocal about their pain.

The complex interactions between factors affecting pain and individual perception can create a wide range of reactions to pain (Trachsel et al., 2023). Pain management must be multimodal and different for each patient to effectively treat pain.

Emotional State

Pain is always defined as a sensory and emotional experience. The patient's emotional state and pain go hand in hand, especially in patients with chronic pain. Research has shown that patients with chronic pain have higher rates of negative emotions such as anxiety, depression, and frustration (Gilam et al., 2020). Both negative and positive emotions can shape a patient's perception of pain. Research has also shown that patients with negative emotions such as anxiety tend to have a lower pain threshold (Heshmat, 2023), but positive emotions can decrease pain severity. This is why patients who practice relaxing activities such as listening to music can have reduced pain (Kober et al., 2020).

Social and Cultural Environment

Social and cultural environments can play a large role in the perception of pain. Factors such as a patient's home environment and social support can affect pain perception. Patients who have supportive social circles have been shown to have improved pain outcomes. Social isolation can contribute to poor pain outcomes, especially in chronic pain and older adult patients (Chadwick et al., 2022).

Other patient populations who can be affected by social factors include

- patients with a history of addictive disease;
- patients who are nonverbal, cognitively impaired, or unconscious;
- patients who endure pain without complaining due to cultural or religious beliefs;
- patients who are non-English speaking, where communication is a barrier; and
- patients who are uninsured or underinsured, where cost of medications is a barrier.

Nurses need to be aware of the impact of social environment and culture on pain management. Providing culturally competent care is essential to effective pain management for all patients.

CULTURAL CONTEXT

Cultural Competence in Pain Management

Cultural competence is essential in effective pain management. Patients who are non-English speaking are at higher risk for experiencing undertreated pain due to communication barriers. Interpreters can be helpful in ensuring patients are able to effectively express their pain and communicate their needs. Cost and availability are two cited barriers to having interpreters readily available in healthcare settings (Yelton & Jildeh, 2023). However, any intervention to ensure cultural competence in healthcare settings should be explored regardless of barriers. Cultural practices and beliefs play a big role in how a patient perceives pain and their expectations of pain management. Lack of understanding of cultural differences can damage the provider-patient relationship and create barriers to effective pain management. For example, some Asian cultures may not express their pain and appear reserved despite being in severe pain. Religion can also play a role in perception of pain. Some religions may believe that pain is a test of faith or part of the path God has planned for them. If nurses are not aware of these cultural differences, the patient could experience ineffective pain management (Givler et al., 2023). The different cultures and personal experiences of nurses can affect how pain is perceived in patients. Nurses should be aware of how their personal beliefs and experiences can impact how they care for patients who are different from them.

Classification of Pain

Classifying pain can help effectively evaluate and treat pain. Pain can be classified based on the severity, duration, or location. The World Health Organization (WHO) developed the analgesic ladder (Figure 30.3) in 1986 to help select analgesics for patients with cancer pain, but it can be broadened for managing pain appropriately for all patients. The ladder classified pain into three categories: mild, moderate, and severe. The WHO defines pain severity based on the type of medication needed to treat the pain. For example, mild pain may require only nonopioid analgesics while severe pain requires opioid medications such as morphine or fentanyl (Anekar et al., 2023).

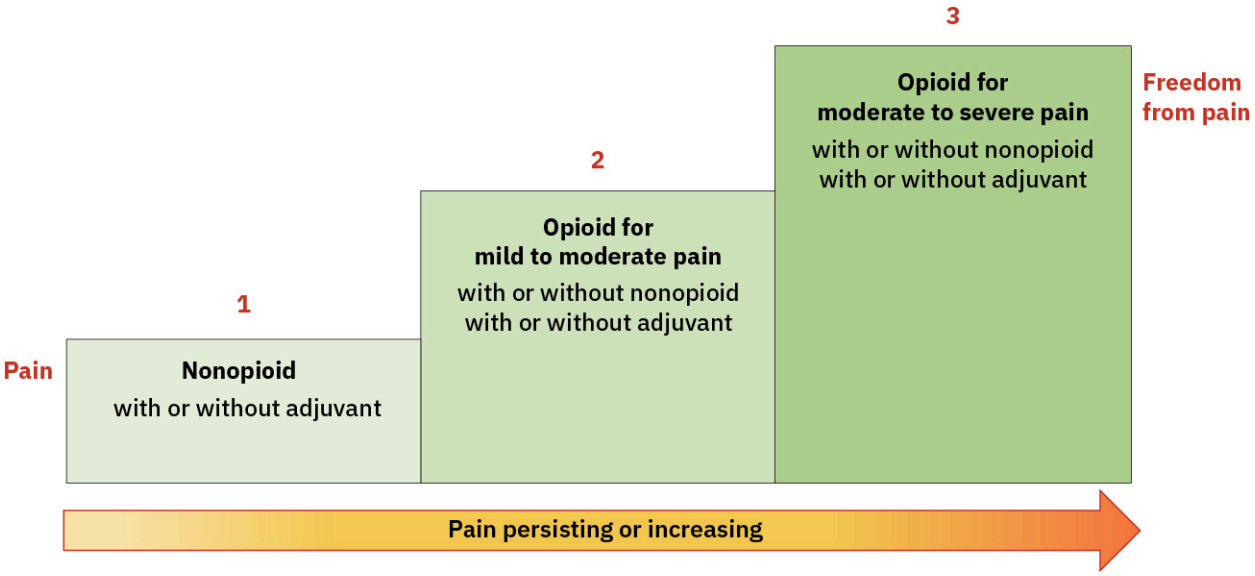

FIGURE 30.3 The WHO pain ladder classifies pain into three categories. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Pain can also be classified based on the duration or location of pain. Using tools such as pain location charts can help patients pinpoint the location of their pain, which may give healthcare providers a better idea of the cause of pain. The duration of pain can also help determine the potential cause and effective pain management strategies. For example, acute abdominal pain may indicate appendicitis whereas chronic back pain could indicate a past injury.

Duration

The duration of pain can determine the treatment method. Acute, chronic, or breakthrough pain are all defined based on the duration of time the pain persists. Acute pain is defined as Pain that is short in duration and caused by an acute event. For example, **acute pain** can be caused by an acute event such as a car accident or sports injury. Chronic pain is defined as pain that lasts longer than six months. Patients with chronic illnesses often experience **chronic pain** that can vary in severity. For example, patients with chronic pancreatitis often experience chronic abdominal pain that is caused by the inflammation of the pancreas. Acute pain that exists along with chronic pain is called breakthrough pain. Breakthrough pain persists even when interventions are present to treat chronic pain (Robertson, 2022). Patients receiving pain medication for chronic abdominal pain caused by pancreatitis may also experience breakthrough pain. If patients are receiving pain interventions but are still having severe pain, they may need to be hospitalized for further management to treat the breakthrough pain.

Acute Pain

Acute pain is a short-lived response that alerts the brain to an acute event caused by injury, trauma, surgery, or illness (Dowell et al., 2022). Acute pain can last a few seconds or a few months and is usually resolved when the acute event is treated (International Association for the Study of Pain [IASP], 2021a). Symptoms of acute pain can include numbness, tingling, sharp, throbbing, and stabbing pain (IASP, 2021a). Acute pain may cause appetite changes, sleep disturbances, diaphoresis, changes in vital signs, and behaviors such as distraction, guarding, protectiveness, and restlessness. Examples of acute pain include postoperative pain; burns; acute musculoskeletal pain from conditions such as strains, sprains, and fractures; pain associated with labor and delivery; and pain from traumatic injury.

Because acute pain can vary in severity, the type of treatment may vary based on individual patient needs (Robertson, 2022). Treatment for acute pain may include rest, ice or heat, physical therapy, nonopioid medications, or exercise (IASP, 2021a). The first step in treating acute pain is identifying the cause and ensuring that patients receive treatment before the pain becomes severe. Acute pain is often resolved when the cause is treated, so identifying the cause is an important first step in treating acute pain.

Chronic Pain

Chronic pain is ongoing and persistent for longer than six months and is not always confined to a specific area of the body. Chronic pain often affects an individual's psychological, social, and behavioral responses that can influence

daily functioning. Causes of chronic pain can include chronic disease, injury, inflammation, or an unknown cause (Dowell et al., 2022). Chronic medical problems, such as osteoarthritis, spinal conditions, fibromyalgia, and peripheral neuropathy, are common causes of chronic pain. Chronic pain can continue even after the original injury or illness that caused it has healed or resolved.

It is estimated that one in five adults in the United States experiences chronic pain (Dowell et al., 2022). People who have chronic pain often have physical effects that are stressful on the body. These effects include tense muscles, limited mobility, lack of energy, and appetite changes. Emotional effects of chronic pain include depression, anger, anxiety, and fear of reinjury. These effects can limit a person's ability to return to their regular work or leisure activities. Multiple factors can lead to chronic pain becoming more centralized, which can result in a decreased pain threshold. This can cause patients to experience an increased severity of pain and to need complex pain management (Dydyk & Grandhe, 2023).

LINK TO LEARNING

Chronic pain affects so many individuals in the United States and throughout the world. Observing a patient interview with someone who experiences chronic pain (https://openstax.org/r/77chrpainintv) can be useful for nurses to understand how chronic pain affects everyday life and the many different ways to manage chronic pain.

Location

Pain can be defined based on location. Sometimes it is easy for patients to identify the location of their pain and sometimes it may be difficult. Pain perceived at a location other than the site of the painful stimulus is called **referred pain**. The abdomen, extremities, and head are common areas to experience pain. Pain location charts can be helpful for patients to describe their pain (Figure 30.4).

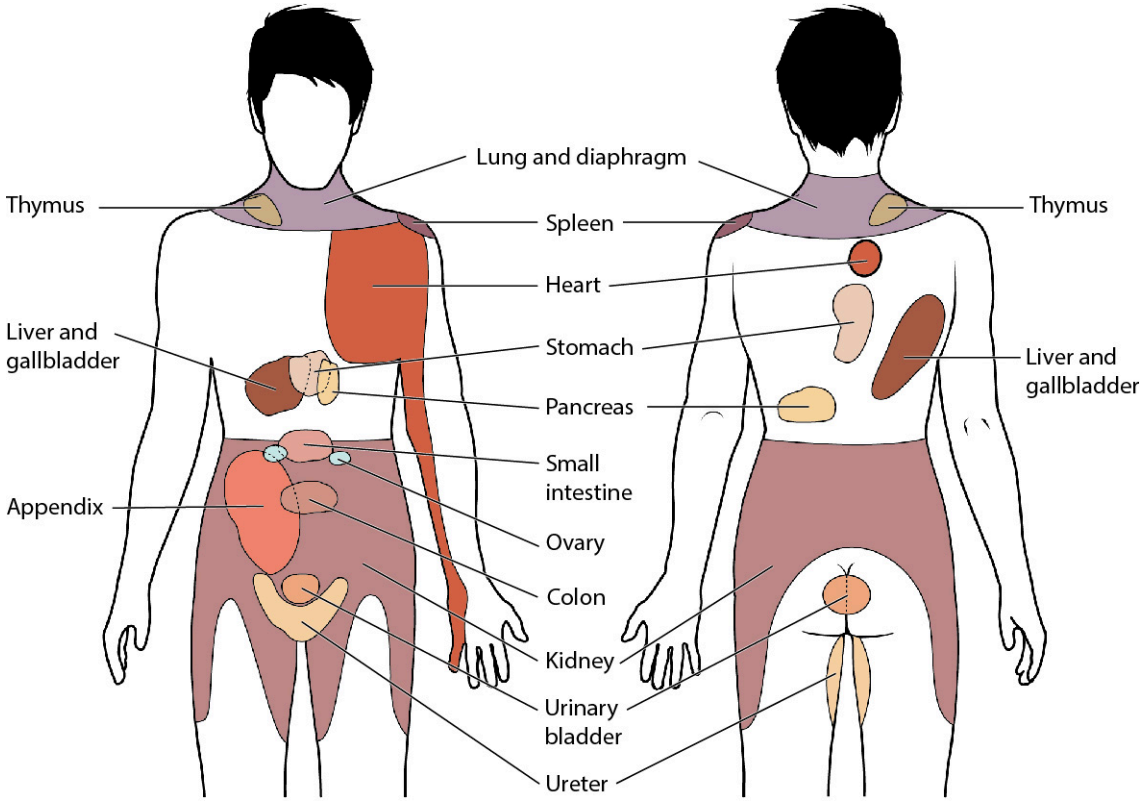

FIGURE 30.4 Pain location charts can be helpful for patients to identify where their pain is felt on their body. Locating the pain can help healthcare providers in developing effective treatment plans. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Identifying the location of a patient's pain can better help healthcare providers effectively assess and manage pain. Pain location charts show areas of the body, and the patient can point to a specific area where they are feeling their

pain. Areas of pain such as knee pain can result from different causes based on location (Askinazi, 2023). For example, pain above the knee can be caused by inflammation while pain at the kneecap can be caused by a stress fracture. Location may be hard to determine for certain types of pain, but it can be helpful in the pain assessment and treatment plans.

Cutaneous Pain

Pain that is perceived from the skin is called **cutaneous pain**. Cutaneous pain is often acute pain that is resolved after the underlying injury or condition is treated. However, sometimes cutaneous pain can become chronic. Cutaneous nociceptors respond to heat, cold, and mechanical and chemical stimuli. Causes of cutaneous pain can include diabetes, autoimmune diseases, and other painful skin conditions (Gudin et al., 2022).

Patients who have diabetes often experience skin infections that can become painful. Other skin conditions such as shingles and dry skin can cause cutaneous pain. Shingles is caused by the virus that causes chickenpox and creates a vesicular rash that is painful and itchy. Autoimmune diseases such as lupus can cause inflammation, rash, and lesions that can cause cutaneous pain (Stucky & Mikesell, 2022). Many patients who experience cutaneous pain can also experience pain elsewhere in their body at the same time. Cutaneous pain can often be easy to identify due to outward signs of the cause of pain, such as cuts, burns, swelling, rashes, and bruising.

Visceral Pain

Visceral structures are internal organs such as the stomach, kidneys, spleen, and appendix. Visceral structures are highly sensitive to stretch, ischemia, and inflammation. When these internal organs are injured or damaged it creates **visceral pain** (Ford, 2019). Visceral pain is diffuse, difficult to locate, and often referred to as a distant, usually superficial, structure. It may be accompanied by nausea and vomiting and vital signs changes. Visceral pain may be described as sickening, deep, squeezing, aching, pressure, and dull. Visceral pain can be caused by gallstones, appendicitis, or irritable bowel syndrome (Santos-Longhurst, 2018).

Visceral pain can be difficult to locate due to the pain being internal, and patients often struggle to pinpoint an exact location. Unlike cutaneous pain, visceral pain does not typically show any outward signs of the cause of pain, which can make it difficult to locate.

Somatic Pain

Pain initiated by stimulation of nociceptors in ligaments, tendons, bones, blood vessels, fascia, and muscles is called **somatic pain**; it is a dull, aching, poorly localized pain. Somatic pain can be aching, deep, or superficial. For example, a ligament tear will cause deep somatic pain whereas a burn will cause superficial somatic pain. Somatic pain can be caused by broken bones, muscle stress, connective tissue diseases, joint pain, cuts, or burns (Santos-Longhurst, 2018). Somatic pain may show outward signs of the cause of pain such as a broken bone, cuts, burns, swelling, or bruising. Deep somatic pain may show no outward signs of the cause of pain, so further diagnostic testing may be needed to identify the location.

Referred Pain

Pain can radiate from one area to another. For example, back pain caused by a herniated disk can cause pain to radiate down an individual's leg. Referred pain is different from radiating pain because it is perceived at a location other than the site of the painful stimulus. For example, pain from retained gas in the colon can cause pain to be perceived in the shoulder. Referred pain can happen because all nerves are connected and sometimes the brain sends a pain signal to a different area from where the pain started (Watson, 2019).

Referred pain can be felt anywhere, which is why it can be difficult to diagnose. Common areas of referred pain are shoulders, neck, back, and jaw (Watson, 2019). For example, lower back pain can indicate that there is something wrong with the kidneys, and jaw pain could be an early sign of a heart attack. It is important that nurses are aware of these signs to help identify and treat serious conditions such as a heart attack.

REAL RN STORIES

Signs of a Heart Attack: Referred Pain

Nurse: Amy, BSN

Clinical setting: Emergency department
Years in practice: 2
Facility location: Teaching hospital in downtown Chicago, Illinois

Being in a big urban hospital, we see a wide range of patient populations, especially in the emergency department (ED). I enjoy working in the ED because you never know who will walk in the door and you must be ready for anything. I have seen a lot in my five years in the ED, but one patient story has always stuck with me.

I had been working in the ED for about a year, and it was my first night working as the triage nurse. As the triage nurse, my job was to quickly assess the patients when they first walk in and determine the level of care they would need. A younger woman walked into the ED with no signs of distress. She reported that she was having a "weird pain" in her armpit. She rated her pain a 3 out of 10 and described it as sharp and persistent. She said her pain had begun about an hour ago. I asked her a serious of standard triage questions to assess if she was having any other symptoms or pain elsewhere in her body. She reported no other symptoms and had a calm demeanor while speaking to me. She had no health history and appeared to be in good health. I initially assumed she may have injured her arm and an x-ray might show what was causing the pain. I determined her symptoms were not urgent and asked her to wait for the next available bed.

About thirty minutes later, the woman came back up to me and appeared pale, diaphoretic, and was complaining of the continued pain in her armpit and nausea. I immediately escalated her status and called my charge nurse. My charge nurse took one look at her and immediately brought her back to an exam room and asked the physician for an EKG and labs. My charge nurse seemed a little nervous, so I quietly asked her what was going on. She responded "I think this patient is having a heart attack. We need to get the provider right away." I was shocked. This patient's only symptom on arrival was mild pain, so how was she now having a heart attack? I then began to worry that I had missed something during triage.

My charge nurse helped stabilize the patient and transport her to the cardiac unit for further evaluation. After we had safely transported the patient, I told her what happened in triage and that I was terrified I had missed something. She explained to me that early signs of a heart attack could be referred pain to the arms, shoulders, or jaw. She said most of the time the pain is accompanied by other symptoms, but it is possible that the referred pain could be the only sign of a heart attack. She explained that as a new nurse, I may not have been aware of referred pain as a heart attack symptom and that I triaged the patient according to my knowledge. We worked together to help me understand how to identify potential referred pain for the future. A few years later, I had a similar patient come into the ED while I was the triage nurse. I was able to identify a potential heart attack early due to referred pain and stabilize my patient just as my charge nurse had done for me.

Etiology

The **etiology of pain** describes the specific cause of pain. Pain can result from various health conditions such as genetics, trauma, degenerative diseases, cancer, surgical procedures, infection, mechanical cause, or an unknown cause (Arumugam et al., 2019). Nociceptive, neuropathic, and idiopathic pain are all types of pain resulting from a specific cause. These causes can include heat, cold, chemicals, or neurological damage. The cause of pain can also be unknown.

Nociceptive Pain

Pain caused by stimulation of pain receptors by a mechanical or chemical cause such as heat or cold is called **nociceptive pain** (Ford, 2019). Because nociceptors are found everywhere in the peripheral nervous systems, nociceptive pain originates in the peripheral nervous system (Dydyk & Grandhe, 2023). The severity of nociceptive pain is directly related to the degree of injury. For example, stubbing a toe may cause mild pain while burns from a house fire may cause severe pain.

Nociceptive pain can be acute, chronic, somatic, or visceral depending on the duration and location of the pain. Nociceptive pain is usually acute, but sometimes the nociceptors may remain more sensitive to pain after the cause of pain has been resolved (Jacques, 2023). For example, a past head injury may have chronic pain due to frequent headaches even after the injury is treated.

Treatment of nociceptive pain is dependent on the duration and location of the pain. Acute nociceptive pain may

only need mild pain interventions, such as an ice pack for a stubbed toe. Chronic or more severe nociceptive pain may require a combination of pharmacological and alternative pain management (Jacques, 2023).

Neuropathic Pain

Pain caused by neurological damage or dysfunction is called **neuropathic pain**. Neuropathic pain can be peripheral and centralized, and it is estimated that 10 percent of adults in the United States experience neuropathic pain (Dydyk & Grandhe, 2023). Neuropathic pain results in stimulation from something that is not considered painful, but due to the neurological damage, the body perceives the stimuli as painful (Yam et al., 2018). Neuropathic pain can result from conditions such as diabetes, neurological disorders, cancer, trauma, or toxins.

Neuropathic pain can be described as burning, numbness, tingling, shooting, or stabbing and can occur in response to nonpainful stimuli such as temperature changes. Diabetes is one of the most common causes of neuropathic pain. Patients who have diabetes can develop numbness and tingling in their lower extremities due to decreased circulation. This can lead to pain, decreased sensation, and injury to the lower extremities. Central nervous systems disorders such as multiple sclerosis and Parkinson disease can cause neuropathic pain. Patients receiving cancer treatment such as radiation or chemotherapy may also experience neuropathic pain due to their treatments (Santos-Longhurst, 2018).

Neuropathic pain is generally undertreated because it typically does not respond to traditional analgesics. Medications such as tricyclic antidepressants and gabapentin are typically used to manage this type of pain. These medications work on blocking the sensation to the affected nerves. Many patients are not aware that their chronic condition could lead to neuropathic pain. Nurses should provide education for patients with these conditions to ensure that their pain is managed effectively.

PATIENT CONVERSATIONS

Assessing Neuropathic Pain in Patients Who Have Diabetes

Scenario: The nurse is caring for an established patient with diabetes who was admitted for hyperglycemia. The nurse is providing discharge education about the patient's diabetes home management and the patient is asking about pain management.

Patient: I often have numbness and tingling in my feet, and it really bothers me. Why is that happening?

Nurse: Are you having any pain right now?

Patient: No, not right now. But the pain comes and goes a lot when I am at home.

Nurse: That kind of pain is common in patients with diabetes. Diabetes can cause decreased circulation in your legs, which can lead to the numbness and tingling.

Patient: No one has told me that before.

Nurse: Have you ever spoken to your doctor about this pain?

Patient: No, I haven't seen my doctor in a long time. I probably should make an appointment with them.

Nurse: Many typical pain medications will not be effective for this type of pain, but there are some medications that are very effective. Let me help you set up an appointment with your doctor and we can work on getting you the right treatment plan for your pain.

Patient: Thank you very much. I had been taking Motrin but that was not helping. I am glad to hear there is something that may help my pain.

Idiopathic Pain

Sometimes patients can have pain without a known cause. This is called **idiopathic pain**, a chronic pain that is from an unknown origin. Idiopathic pain from an injury or medical condition may also persist long after the cause is healed. Medical conditions in which idiopathic pain may be present include fibromyalgia, multiple sclerosis, headaches, joint disorders, peripheral neuropathy, and irritable bowel syndrome (Jacques, 2021). Patients may

often experience idiopathic facial pain in the jaw, ears, or cheeks. Patients may feel dull, aching, throbbing, or tingling sensations in their face without any identified cause of pain (Cleveland Clinic, 2021).

Idiopathic pain can be difficult to diagnose. The symptoms of idiopathic pain can often be similar to those of other conditions. Healthcare providers tend to rule out other medication conditions before idiopathic pain is diagnosed. Because the underlying cause is not known, idiopathic pain can also be difficult to treat. A combination of medications and alternative therapies such as acupuncture, biofeedback, and meditation can help reduce pain (Cleveland Clinic, 2021).

30.2 Responses to Pain

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the physiologic response to pain
- Identify behavioral response to pain
- Identify affective response to pain

Patients can have many different responses to pain. The body perceives pain as a sign of danger and will immediately initiate responses to help the person stay safe. The sympathetic and parasympathetic nervous systems play a big role in physiologic responses to pain. Many patients may experience sympathetic body changes to a perceived threat of pain. Behavioral and emotional responses can also be observed in patients experiencing pain. Vocalization, facial expressions, movement, and negative emotions can all be responses to pain.

Patients may experience a wide variety of behaviors when in pain. Patients may lash out or become quiet and withdrawn when in pain. Patients in acute pain are more likely to vocalize their pain and exhibit facial expressions of pain. Patients experiencing chronic pain may struggle with anxiety and depression from the continued feeling of pain. Patients may even experience an extreme fear of pain and avoid any situation that may cause pain.

Physiologic Response

Pain warns a person of danger to prevent damage to the body (Arcuri, 2022). The **physiologic response** to pain is the body's involuntary responses to a painful stimulus such as inflammation or changes in heart rate and blood pressure. Physiologic responses can include sympathetic nervous system reactions and behavioral reactions such as facial expressions, emotions, vocalizations, and movement. Many of the observed nonverbal cues from patients are physiologic responses to pain.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care: Recognizing Physiologic Pain Response

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs.

Knowledge: Demonstrate comprehensive understanding of the concepts of pain and suffering, including physiologic models of pain and comfort.

Skill: Assess presence and extent of pain and suffering. The nurse will:

- Focus on the duration, location, and etiology of the patient's pain.
- Ask the patient how long the pain has lasted to determine if the pain is acute, chronic, or breakthrough pain.
- Ask the patient to identify the location of the pain.
- Ask the patient to describe how the pain feels and what causes or makes the pain worse to try to determine the cause of pain.

Attitude: Appreciate the role of the nurse in relief of all types and sources of pain or suffering.

Sympathetic Nervous System

The autonomic nervous system contains the sympathetic and parasympathetic nervous systems and regulates the involuntary physiologic responses of the body (Figure 30.5). The role of the sympathetic nervous system is to

respond to perceived stressful or dangerous situations. The main response from the sympathetic nervous system is the **fight-or-flight response**, which triggers the body to either run away from or fight a perceived threat. For example, the body may perceive an encounter with a wild animal as a threat. The sympathetic nervous system will activate and tell the person to run away from the animal to safety. The fight-or-flight response may not be activated in perceived less stressful situations, but the body may still illicit a sympathetic response (Yeater et al., 2021). For example, a patient may be experiencing postsurgical pain even with pain medication. The sympathetic nervous system may respond to the pain by elevating the heart rate and blood pressure.

The sympathetic pain response involves many automatic bodily functions such as:

- enlarging pupils to improve vision;
- slowing digestion to allow the body to use energy in other places; and
- increasing heart rate and blood pressure to improve circulation (Cleveland Clinic, 2022b).

Nurses may notice these nonverbal signs of pain in a patient even before the patient states they are in pain. Noticing sympathetic pain responses is especially important in patients who cannot communicate their pain. Patients who are unconscious, confused, nonverbal, young, or cognitively impaired may not be able to adequately express their pain.

Parasympathetic Nervous System

The parasympathetic nervous system opposes the sympathetic nervous system and regulates the automatic bodily functions in times of rest and relaxation. Once the perceived stress or threat is gone, the parasympathetic nervous system takes over and returns the body to its normal functioning (Cleveland Clinic, 2022a).

The parasympathetic response includes:

- constricting pupils to limit light;
- producing saliva and mucus to assist in digestion and breathing;
- lowering heart rate and blood pressure to reduce workload;
- directing energy toward digestion to help break down food;
- directing the pancreas to create insulin to regulate blood sugar; and
- relaxing muscles to assist with urination and defecation (Cleveland Clinic, 2022a).

These responses indicate to the nurse that the patient is experiencing adequate pain relief. In the same way that the nurse observes sympathetic responses to detect a patient's pain, the nurse may observe parasympathetic responses to determine if pain interventions are effective (Figure 30.5).

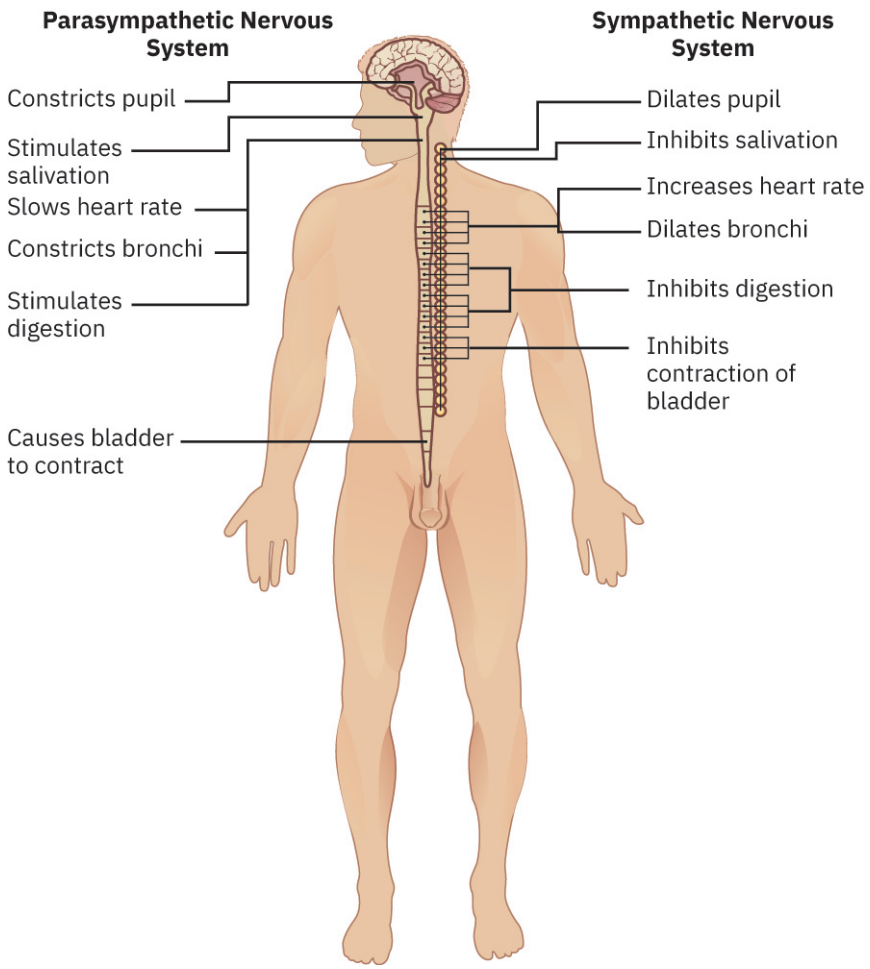

FIGURE 30.5 The parasympathetic and sympathetic divisions of the autonomic nervous system have opposite effects on various systems. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Vital signs can be an indicator of pain, and nurses can use vital sign measurements along with the patient's response to determine if pain interventions are effective. Measuring vital signs as an indicator of pain can be especially useful for patients who cannot verbalize their pain. Pain can cause an increase in blood pressure, heart rate, and respiratory rate. Abnormal vital signs can occur without pain, so it is important that nurses perform other methods of assessment for pain as well. Nurses can also measure vital signs to determine if they have normalized after pain interventions. For example, if a patient has elevated blood pressure and is exhibiting signs of pain, the nurse can assess their blood pressure after pain medication has been given to ensure that it has normalized. This can help indicate that the pain interventions are effective.

Behavioral Response

Behavior plays a big role in pain response. Nurses can easily observe behavioral responses to pain and can measure the severity of pain based on a patient's behavior. Noticing behavioral pain responses is especially important in patients who cannot communicate their pain.

Behavioral pain responses may include:

- facial expressions,
- vocalization,
- movement,
- emotions, and
- interactions with others.

Behavioral pain responses are often big reactions that others easily notice. For example, when a professional athlete gets injured during a game, everyone in the crowd understands the athlete is in pain due to their behavior. The

athlete may fall to the ground, grab the area of their injury, and yell out in pain (Figure 30.6).

FIGURE 30.6 Athletes are prone to injuries and can be seen publicly displaying behavioral responses to pain. (credit: "Injury" by Olympus Digital Camera/Flickr, Public Domain)

Vocalization

Patients will sometimes use sounds, noises, and words to express pain. This is called **vocalization**; and it most often occurs in acute pain of varying severity. Vocalization of pain includes crying, screaming, moaning, gasping, or grunting (Helmer et al., 2020). Patients can vocalize their pain by using pain rating scales. Asking patients to rate their pain on a numeric scale can be an effective way to assess patients for pain. Patients can also vocalize pain descriptors such as severity, duration, location, and type of pain.

The use of vocalization to express pain is used often in younger children (Helmer et al., 2020). Younger children have limited communication when trying to express pain. The most common way for infants to express discomfort is by crying. Older children may be capable of stating their pain using appropriate pain scales, such as the Wong-Baker FACES Pain Rating Scale, but may still use crying or yelling to express pain (Venable, 2018).

LIFE-STAGE CONTEXT

Behavioral Pain Response in Infants

Assessing pain in pediatric patients can be difficult, especially in infants. Nurses must be aware of behavioral responses to pain when caring for infants. Infants primarily express their needs through crying, but not all crying equates to pain. The FLACC (Face, Legs, Activity, Cry, Consolability) scale can be used to assess an infant's pain. The FLACC scale is recommended to be used in younger patients as it measures appropriate behavioral responses in young children. The FLACC scale scores patients' pain based on five criteria: facial expressions, body posture, activity, crying, and the ability to console (Trottier et al., 2022). The total score is 0 to 12, with each category receiving 0 to 2 points based on patient response. Nurses can try comfort measures such as swaddling, feeding, and rocking to ease the infant's crying. If no comfort measures work, the crying may be due to pain (Helmer et al., 2020).

Facial Expression

Facial expressions not only demonstrate emotions such as happiness, fear, or sadness, they can also demonstrate pain. Frowning, closing eyes, clenching teeth, opening the mouth, biting lips, grimacing, furrowing eyebrows, and scowling can all be used to express pain (Figure 30.7) (Cho & Hong, 2020).

FIGURE 30.7 Facial expressions such as grimacing, furrowing eyebrows, and closing eyes are a common way for patients to express pain. (credit: "The pain is brutal for these Marines 150306-M-IN448-056.jpg" by Sgt. Matthew Callahan/Wikimedia Commons, Public Domain)

Some research shows that social context can change the way a person expresses pain (Kappesser, 2019). For example, a young child may cry and use facial expressions to demonstrate pain around their parents. However, they immediately stop crying and try to smile when their older sibling comes into the room because they want to appear more mature. Another example is a person feeling comfortable enough to show facial expressions of pain in the presence of their partner rather than in front of a colleague or stranger (Kappesser, 2019). Patients may not feel comfortable showing facial expressions when in pain. They may try to hide their facial expressions in the presence of healthcare providers. It is important that nurses always help patients feel comfortable expressing their pain.

Body Movement

Patients may demonstrate pain through movement such as guarding, touching the location of the pain, withdrawing from touch, or tremors (Cho & Hong, 2020). Nurses may notice muscle tension and resistance to examination of the painful location.

Children often show pain through withdrawal of touch. While they may seek the comfort of their parents, they will often resist someone touching or manipulating the painful area due to fear of touch causing more pain. This can be difficult for nurses to assess the location of pain. Severe pain may require pharmacological interventions prior to assessment of the location of pain. Nurses must be mindful of the location of pain when doing a physical assessment. Visual assessment, diagnostic imaging, and descriptors of pain from the patient can help provide a comprehensive pain assessment without touching the painful area.

Social Interaction

The way that patients interact with others can change when they are in pain. Patients in chronic pain may withdraw

from social interactions and become isolated. This can make the pain worse and contribute to deteriorating physical health in patients (Bannon et al., 2021). When patients are in pain and around others, they may appear quiet, reserved, and uninterested (Oommen & Shetty, 2020). Nurses can educate patients that these social interactions are a normal response to pain and help them verbalize to their loved ones that these negative emotions are responses to pain. It is important that patients are able to verbalize their pain in social situations, so they do not become socially isolated and withdrawn. Research has shown that supportive social environments can help patients cope with pain (Bannon et al., 2021).

Affective Response

The **affective response** to pain refers to the emotional interpretation of pain, such as how uncomfortable the pain is. The affective response can help determine how much pain is felt (Cleveland Clinic, 2022a). Negative emotions such as fear and anxiety can be connected to pain. Because pain is a subjective experience, patients may have different emotional responses to pain. For example, an athlete with a knee injury may feel fear along with pain because they are worried the pain means a season-ending injury. Another patient feeling pain from a broken leg may feel anxiety along with the pain because they will not be able to work while recovering from their injury.

Interventions such as cognitive behavioral therapy, guided imagery, and meditation can help patients adjust their affective response to pain because they promote relaxation and decreased stress (Talbot et al., 2019). These interventions can help decrease negative emotions such as fear and anxiety while also decreasing the perception of pain.

Negative Emotion

Pain is an unpleasant sensation and associated with negative emotions. Negative emotions can include anger, frustration, fear, anxiety, depression, guilt, and sadness. Negative emotions can make it difficult to complete daily activities and can lead to social withdrawal. Everyone can feel negative emotions and they are not always connected to pain. However, it is important for patients to understand that pain can bring on negative emotions, especially anxiety and depression. If patients are not able to cope with negative emotions in healthy ways, it can lead to unhealthy consequences (Scott, 2022).

Accepting emotions and finding healthy coping mechanisms is essential to reducing pain and preventing negative consequences. Healthy coping mechanisms for negative emotions can include acceptance and understanding of the emotions, exercise, meditation, and lifestyle changes (Scott, 2022).

Anxiety

Anxiety often goes hand in hand with pain and is more commonly seen in patients with chronic pain. Pain can affect patients' daily lives and can have a big impact on their physical, mental, and social health. Many patients who experience anxiety with pain may also experience depression. Research shows that 65 percent of patients seeking help for depression also report pain symptoms (Harvard Health Publishing, 2021).

Anxiety and depression can make it harder to treat pain. Patients experiencing anxiety and depression may be less motivated to find ways to treat their pain and may be unable to focus on pain management strategies. Cognitive behavioral therapy, mindfulness, and medications can help treat anxiety, depression, and pain in patients. These therapies can be multimodal in that they can treat the negative emotions and the pain at the same time.

Fear

The perception of pain can be influenced by fear (Oommen & Shetty, 2020). Some patients may even have a phobia of pain. When that phobia of pain is extreme, it's called **algophobia**. Patients may experience anxiety and fear at the thought of pain. Algophobia can make patients more sensitive to pain and they may perceive normal activities as a potential cause of pain (Cleveland Clinic, 2021).

Fear of pain can cause patients to catastrophize pain. The act of **catastrophizing** is the picturing the worst possible outcome for a situation (Cleveland Clinic, 2021). Patients may be intensely focused on avoiding pain and can see the potential of pain in any situation. Patients may become anxious and withdrawn as they try to avoid situations that could cause pain. If patients are experiencing pain, they may avoid situations that they think can make their pain worse. Cognitive behavioral therapy and mindfulness can help patients deal with their fear of pain. Exposure to

potential painful situations can also help patients rationalize their fear of pain and continue living their daily lives.

30.3 Factors Affecting Pain

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe psychosocial factors affecting pain
- Identify physiological factors affecting pain
- Recognize psychological factors affecting pain

Psychosocial, physiological, and psychological factors can all affect pain. An important part of a pain assessment is recognizing the factors that could be influencing pain (Dydyk & Grandhe, 2023). Factors such as poor social support, past experiences, and age can make an impact on the patient's perception of pain.

These factors can negatively or positively impact a patient's perception and expectations of pain. A patient who has had negative past experiences with chronic pain and pain management may believe that their pain can never get better. A patient who has a good support system and believes that improving their lifestyle can heal their chronic pain may find their pain improving over time. It is important that patients are aware of the different factors that can affect pain and how different choices, lifestyle, and mindset can affect their perception and overall outcome of pain.

Psychosocial Factors Affecting Pain

A psychosocial factor is a social factor that relates to a person's perception of pain. Social factors can include mood, trauma, interpersonal relationships, environment, and education. Research shows that past experience and interpersonal relationships can have a large impact on the perception of pain. Patients who have pain due to past trauma may have a different perception of pain than someone who has never experienced pain. The impact of others can also affect patients' pain. For example, a patient may be more likely to report pain in the presence of a supportive environment than a patient who is alone.

Mood

Research shows that there is a connection between mood and pain. Mood disorders such as anxiety, depression, and bipolar disorder can impact the perception of pain. Emotions such as fear, frustration, and anger can also impact pain. If negative emotions persist during chronic pain, patients may be at an increased risk of suicide (Antioch et al., 2020). Chronic debilitating pain combined with a history of depression can give patients a feeling that there is no sense of pain relief.

Positive emotions can in turn help patients deal with their pain. Patients who are optimistic and have a positive lifestyle may view pain as a minor inconvenience rather than a life-altering change. Practicing interventions such as cognitive behavioral therapy, mindfulness, and relaxation techniques can help patients keep a positive mood while dealing with pain.

Distress

Negative attitudes in combination with pain can often lead to distress. Distress is experiencing extreme physical or mental suffering such as pain, anxiety, or sadness. Often patients find that their pain is beyond their ability to cope, which can cause distress when dealing with pain (Craig & MacKenzie, 2021). Distress when dealing with pain can lead to decreased quality of life, depression, anxiety, and catastrophizing (Fancourt & Steptoe, 2018). Patients may be so preoccupied with their pain that they begin to catastrophize and neglect other areas of their lives. For example, a patient with severe chronic pain may begin to think that there is no hope for pain relief and withdraw from their daily life. They may stop going into work, reduce physical and social activity, and turn to substance use as a coping mechanism. These poor lifestyle choices can lead to a decreased quality of life and more health complications.

Trauma

Pain and trauma are often interconnected. Many times, a patient's pain may be directly caused by trauma and therefore be a constant reminder of the traumatic experience (Jackson, 2021). Physical trauma such as car accidents or abuse can cause chronic pain. Patients may have chronic pain due to their injuries sustained in the traumatic experience or experience chronic pain due to **post-traumatic stress disorder (PTSD)**. Post-traumatic stress disorder (PTSD) is a psychiatric disorder where a person experiences lingering effects triggered by a past

traumatic event. These lingering effects can include chronic pain and can lead to anxiety and catastrophizing.

Research shows that childhood trauma can be linked to chronic pain later in life (Jackson, 2021). Childhood trauma may include physical, emotional, or sexual abuse, neglect, or parental separation. Children often do not know how to deal with traumatic experiences and may not receive support afterward, so they can have lingering effects of the trauma for many years. Research shows that treating the trauma can provide pain relief. Different types of therapy and mental health resources can help the patient deal with the trauma and any residual effects.

Interpersonal Factors

It is important for nurses to understand how social factors can affect a patient's perception of pain. Supportive environments may allow patients to be more open in voicing their pain. For example, a patient may be more open in discussing their pain in the presence of a loved one than when alone in a healthcare setting (Gilam et al., 2020). Factors such as culture and socioeconomic status can influence how a patient perceives and articulates their pain (Heshmat, 2023). Certain cultures may be more expressive in their pain than others, and patients may hide their pain in fear of judgement of their socioeconomic status.

The complex interactions between factors affecting pain and individual perception can create a wide range of reactions to pain (Trachsel et al., 2023). Perceived social rejection, lack of social support, and relationship struggles can impact a patient's perception of pain. A patient without adequate social support may view their pain as more unmanageable than a patient with a strong support system does.

Physiological Factors Affecting Pain

Physical factors that are related to a person's perception of pain are called physiological factors. Physiological factors can include age, developmental level, sex, ethnicity, and lifestyle choices. Research shows that physiological factors such as hunger, stress, substance use, and sedentary lifestyle can put a person at an increased risk for pain (Dydyk & Grandhe, 2023). Substance use may be used to try to relieve pain. Alcohol is often used by patients to self-medicate, but the pain-relieving properties are short-lived. Healthy lifestyle choices such as exercise, healthy foods, and sunlight can be used to decrease pain and prevent further health complications (Mills et al., 2019).

Developmental Level

The developmental level of the patient can impact how they perceive and express pain, especially in children. It is important to note that developmental level does not always correspond with the patient's age. For example, a patient with Down syndrome could be 18 years old but have the developmental level of a school-aged child due the cognitive effects of Down syndrome. Patients with childhood traumatic brain injuries could remain at a lower developmental level as they age.

Infants cannot verbalize pain and express all distress through crying. The nurse must use other behavioral cues and rule out other causes to determine if the crying is related to pain. Toddlers and preschoolers often have difficulty describing, identifying, and locating pain. Instead, pain may be demonstrated behaviorally with crying, anger, physical resistance, or withdrawal. School-aged children and adolescents are more responsive to explanations of pain.

Adults are able to verbally express pain and can understand most pain rating scales. However, adults who are developmentally delayed may express pain similar to how a child does. Pain in older adults can present atypically with confusion and agitation. Patients who are confused may have trouble perceiving and adequately expressing their pain. Pain is often underreported in patients of different developmental levels, so nurses must be aware that people of different developmental levels will express pain in very different ways.

Age

Just as children relate differently to pain based on their developmental levels, older adults can be at greater risk of chronic pain due to age-related health concerns. Older adult patients have a higher risk of illness or injury, which can lead to chronic pain (Mills et al., 2019). Older adult patients have a higher rate of chronic pain due to these age-related changes. Older adults are also less likely to express pain. Many patients have the attitude that pain is "just what happens with old age." Dementia and confusion can also make expressing pain more difficult (Mills et al., 2019). Patients who experience chronic conditions such as Alzheimer disease may not be able to recognize that they are in pain or adequately communicate how they are feeling. Many older adult patients experience social

isolation, which can further discourage them from seeking pain management.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: Linking Physiological Factors to Pain

The nurse is performing an initial assessment on an older adult patient admitted for a urinary tract infection. The nurse observes that the patient is confused and does not know they are in the hospital. The patient is visibly distressed and states they are scared because they do not know where they are or where their spouse is. The nurse observes that the patient arrived at the hospital in a wheelchair and notes chronic back pain in their health history. The nurse notes that the patient has chronic pain medication listed on their home medication list. When the nurse asks the patient if they are in pain, the patient states "no" and continues to express distress that they are not at home with their spouse. However, the nurse notes that the patient continues to rub their back and struggles to move from the wheelchair to the bed. The nurse understands that confusion due to age in older adult patients can impact the patient's perception of pain. The nurse notes that the patient's vocalization of pain does not match the physical signs of pain and may be due to the patient's confusion. The nurse understands that further evaluation is needed to assess the patient's pain and factors that may impact their pain management.

Culture/Ethnicity

Culture and ethnicity can play a role in the perception and management of pain. Various cultures can express pain differently. For example, Asian cultures are typically more reserved when discussing pain while other cultures may be more vocal and expressive in their pain (Givler et al., 2023). Research has shown that chronic pain is more prevalent in developing countries (Mills et al., 2019). Cultures with fewer resources and less access to health care have higher risk of pain being underassessed and undertreated.

Research has shown that socioeconomic background may affect pain more than culture and ethnicity. Underrepresented communities often have limited access to health care and can be at higher risk of chronic pain, substance misuse, and opioid addiction (Dydyk & Grandhe, 2023). Patients may not have the education or financial stability to seek out care when dealing with chronic pain. Patients from an underrepresented community may have limited access to health insurance, financial stability, job security, and other factors that complicate their perception of pain and the ability to manage it. Patients experiencing chronic pain may be concerned about the cost of treatment or job security and may avoid seeking care for chronic pain (Mills et al., 2019).

Sex Assigned at Birth

Pain can be perceived differently between males and females. When discussing the impact of biological sex on pain, it is important to differentiate between biological sex and gender. Biological sex refers to the assignment of male, female, or Intersex at birth based on different genitalia and chromosomes. Gender refers to the characteristics of male or female based on social and cultural norms. A person may be assigned a biological sex that does not align with their gender. For example, a person may have sex characteristics of a male, but identify socially and culturally as a female. Both biological sex and gender can play a role in pain.

Research has shown that males are less likely to express pain and seek treatment for pain than females (Mills et al., 2019). People assigned female at birth may also experience pain that males do not, such as menstrual pain and labor pain.

Females experiencing pain are often more likely to be undertreated than males (Casale et al., 2021). The understanding of pain related to specific female health conditions has historically been misunderstood. Many researchers are advocating for development of pain medication specifically designed for females (Casale et al., 2021). Research shows that females are affected by pain more severely and more frequently than males (Casale et al., 2021). Recent research shows that there are significant differences in the physiologic mechanisms of pain related to sex. Females perceive pain differently than males do and hormones can affect pain signals (Osborne & Davis, 2022). Recent research has been more inclusive of females, but there is still more needed. Because of the lack of inclusion of females in studying the effects of pain, many feel misunderstood when seeking pain management from healthcare providers. It is important for nurses to understand how sex and gender can impact patients' perception of pain and that more research is needed to determine the extent of its effect.

Psychological Factors Affecting Pain

A patient's expectations of pain can often increase or decrease the severity. If a patient believes they will have a lot of pain, their perception can increase. In contrast, if a patient believes an intervention will be effective, their pain may decrease (Heshmat, 2023). The interpretation of pain can also have an impact on pain perception. How pain affects a patient's quality of life can change their perception of pain. For example, a patient who is having pain from an elective surgery may perceive their pain differently than a patient who is having chronic pain from cancer treatment does.

PATIENT CONVERSATIONS

What If Your Patient Believes Nothing Will Work to Treat Their Pain?

Scenario: The nurse is caring for a patient who is experiencing chronic pain from cancer treatment. The patient is exhibiting signs of withdrawal and depression and looks worried when the nurse walks into the room.

Nurse: Hi, my name is Emily, and I am going to be your nurse today. Do you mind verifying your name and birthday for me?

Patient: Sure, Alice Wilde 12/13/1960.

Nurse: Nice to meet you, Alice. Are you experiencing any pain right now?

Patient: Yes, I am always in pain. I don't think it's ever going to go away.

Nurse: What would you rate your pain on a scale of zero to ten, with zero being no pain and ten being the worst pain?

Patient: A seven. It's always a seven. You all ask me the same questions every day. My pain is in my abdomen, and it feels dull and achy. I never get any relief from it even though they have me on all these medications that make me so sleepy.

Nurse: I am sorry to hear that. Have you tried anything besides the medications for your pain?

Patient: Why bother? I know it won't get any better. I have pain because I have cancer. Everyone I know who has had cancer was in so much pain all the time, so I know it will be that way for me.

Nurse: Sometimes having a positive mindset can make a big difference in your pain. I know that can be hard to do, but maybe we could try a few techniques to see if it will help?

Patient: I guess, although I really do not think anything will help my pain. The doctors tell me I'm on the maximum dose of medications and nothing is helping.

Nurse: I understand it can be frustrating that the interventions are not helping your pain. Why don't we try looking at your pain a different way?

Patient: What do you mean?

Nurse: Sometimes, you experience pain when you expect it. So, if you think your pain will always be a seven, then that is what it will feel like. If you can change your mindset to a more positive outlook for your pain, you may find your pain decreasing.

Patient: I have never thought about it that way. I am willing to give that a try.

Experience

Past experience of pain can impact how a patient perceives pain in the present or future. Pain can be a learned behavior (Cosio, 2020). Children who see their parents in chronic pain may assume that all adults experience pain. Children learn to express pain by watching others. For example, a child who stubs their toe may yell a profanity and grab their toe because they saw their father do the same thing. Patients also learn what pain interventions are effective, even if they can have negative consequences. For example, a patient may realize that lying on the couch relieves their back pain. However, prolonged inactivity can lead to chronic pain and more adverse effects (Cosio,

2020).

Expectation

The perception of pain can be shaped by expectations. If a patient believes they will have a lot of pain, their perception can increase. Patients may catastrophize and assume the worst possible outcome for their pain. This can cause the patient to feel worse pain and add negative emotions, such as fear and anxiety, to their pain (Heshmat, 2023).

Patients can also improve their pain with appropriate expectations. If the patient expects an intervention to work, they may experience decreased pain (Heshmat, 2023). This is called a placebo effect. A **placebo effect** is when a certain treatment proves to be an effective pain reliever due to the patient believing it will be effective (Cosio, 2020). Nurses can educate patients on the importance of appropriate expectations when managing their pain to improve patient outcomes.

Interpretation

Patients all have different interpretations of pain. Because pain is a subjective experience, it is important for nurses to accept the pain for whatever the patient says it is. Some patients may interpret pain as debilitating whereas another patient may interpret the same pain as mild (Heshmat, 2023). A patient may interpret ankle pain as "dull and achy" whereas another patient may interpret ankle pain as "sharp and stabbing." Situational awareness can also impact a patient's interpretation of pain. For example, a patient who is having their first child may interpret pain as a joyful sign of new life and welcome the pain. Another patient who is in hospice care for chronic pain may interpret pain as a sign that death is imminent. It is important for nurses to remember that all patient interpretations of pain are correct and to be mindful of how a patient interprets their pain when providing pain interventions.

Avoidance

Some patients may choose to deal with pain by avoiding it. Patients may refuse to discuss their pain or may not disclose pain at all. Patients who are unable to cope with their pain may be more likely to ignore it (Cosio, 2020). It is natural for a person to run away from pain so patients should be aware that this is an understandable reaction to pain (Fournier, 2020). However, patients need to understand that avoiding pain does not make it better or go away. Sometimes avoiding pain can make it worse. Pain can also be a sign of further health complications and ignoring it can lead to negative outcomes. For example, a patient experiencing chronic migraines may ignore the pain because they do not want to seem like a burden on their family. However, the pain could be a sign of a more serious issue such as a brain tumor. Ignoring the pain could lead to the patient delaying diagnosis and treatment of a more serious issue.

30.4 Pain Assessment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe how to collect subjective data for a pain assessment
- Identify how to collect objective data for a pain assessment
- Recognize how to document a pain assessment

Pain is a subjective experience, which means it cannot always be observed externally. Because patients do not always outwardly display signs of pain, the pain assessment must be multidimensional (Wideman et al., 2019). Both subjective and objective data need to be included in a comprehensive pain assessment to get a complete picture of the patient's pain.

Using a variety of assessment tools allows the patient to express the quality, type, and intensity of the pain. The nurse may use a pain rating scale and different types of questions to collect subjective data. Objective data can be collected by performing a physical assessment, measuring vital signs, and observing patient behaviors such as posture and facial expressions.

A comprehensive pain assessment is the key to adequately treating pain and is a crucial nursing skill. Without comprehensive baseline data, it can be difficult to provide effective pain management for patients.

Collecting Subjective Data

Because pain is a subjective experience, most of the collected data will be subjective (Wideman et al., 2019). Information obtained from the patient and/or family members and offers important cues from their perspective is called subjective data. A comprehensive pain assessment includes questions that assess the quality, region, severity, potential cause, timing, and aggravating and relieving factors of the patient's pain. Asking the patient open-ended questions allows them to elaborate on their pain and helps the nurse fully understand the patient's concerns.

The PQRSTU mnemonic is often used to remember these subjective assessment questions:

- Provocation/Palliation: What makes your pain feel worse or better?
- Quality: What does the pain feel like?
- Region: Where exactly do you feel the pain? Does it radiate?
- Severity: How would you rate your pain on scale of 0 to 10?
- Timing/Treatment: When did the pain start? How long does the pain last? Have you taken anything to relieve the pain?
- Understanding: What do you think is causing the pain?

These pain assessment questions help the nurse establish a baseline assessment of the patient's pain.

PATIENT CONVERSATIONS

A Comprehensive Pain Assessment Using the PQRSTU Questions

Scenario: The nurse is caring for a patient who has come into the emergency department. The nurse begins asking the patient questions about their pain including follow-up questions using PQRSTU assessment.

Nurse: Hi, my name is Sulee, and I am going to be your nurse today. What brings you in today?

Patient: My lower back is killing me. I am in so much pain.

Nurse: I am sorry to hear that. I am going to ask a few more questions about your pain so we can get an idea of what is causing it and how we can help alleviate your pain. What makes your pain worse?

Patient: Sometimes it gets worse if I am sitting for a long time.

Nurse: Do you have to sit for a long period of time often?

Patient: Yes, I sit at a desk all day at work. My back always hurts when I get home.

Nurse: What does the pain feel like?

Patient: It starts feeling sore and aching, but by the end of the day it feels like a knife is stabbing me in the back.

Nurse: Where do you feel the pain in your back?

Patient: In my lower back.

Nurse: Does the pain radiate to somewhere else in your back or in your body?

Patient: No, the pain is just across my lower back.

Nurse: How would you rate your pain on a scale of zero to ten with zero being no pain and ten being the worst pain?

Patient: Probably a seven.

Nurse: Would you rate your pain differently after sitting for a long period of time?

Patient: Yes, it's a nine when I get home from work.

Nurse: Is the pain constant or does it come and go?

Patient: The aching is constant, but the stabbing feeling comes and goes.

Nurse: Have you taken any medication to relieve the pain?

Patient: I take ibuprofen daily and sometimes I try to lie down after work.

Nurse: Does the ibuprofen and lying down relieve the pain?

Patient: Sometimes it makes it better, but the pain never goes away.

Nurse: What do you think is causing the pain?

Patient: I was in a car accident last year and my back has hurt me ever since.

Nurse: Thank you for sharing that information. I am going to do a few other assessments so I can better understand your pain and how we can help you.

Collecting subjective data allows the nurse to begin to understand the type and location of the patient's pain. In addition to the PQRSTU mnemonic, there are many different pain rating scales the nurse can use depending on the patient's cognitive and developmental level.

Numeric Rating Scale

Asking a patient to use a numeric rating scale to rate the severity of their pain from 0 to 10, with "0" being no pain and "10" being the worst pain imaginable, is a common way to assess patients for pain. Most patients find the numeric rating scale easy to use and healthcare providers find the results easy to interpret (Zambon, 2020). However, the numeric rating scale may not be appropriate for all patients. Factors such as age, native language, literacy level, and cognitive ability may prohibit patients from understanding the numeric rating scale (Zambon, 2020). Some patients may be too young or cognitively delayed, or even sedated to understand how the numbers relate to the severity of pain. Patients from various cultures and native languages may not understand the numbers on the scale and may prefer a more visual pain rating scale. The nurse must ensure the patient can understand the numeric rating scale before using it. If the patient does not understand, a different assessment tool must be used.

When using a numeric rating scale, the nurse should always accept the patient's pain for what they say it is (Wideman et al., 2019). For example, one patient with a sprained ankle may rate their pain as a 4 out of 10, while another patient with a sprained ankle may rate their pain as an 8 out of 10. Both patients are right as their interpretation of pain is subjective (Dydyk & Grandhe, 2023).

The numeric rating scale provides the nurse with the severity of a patient's pain but does not provide any other information (Wideman et al., 2019). Additional questions must be asked to obtain a thorough pain assessment and to assess the patient's comfort-function goal. The comfort-function goal is an individualized patient goal identifying their acceptable pain tolerance while maintaining their daily functions. This goal provides the basis for the patient's individualized pain treatment plan and is used to evaluate the effectiveness of interventions. Each patient's comfort-function goal will be different. For example, one patient may have a comfort-function goal of 4 out of 10 pain severity while another patient may have a goal of 0 out of 10 pain severity.

The numeric rating scale is the most common pain rating scale used in nursing due to its simplicity and ease of understanding. However, it is important for nurses to know other pain rating options to best suit individual patient needs.

Wong-Baker FACES Pain Rating Scale

The **Wong-Baker FACES Pain Rating Scale** is a visual tool used to evaluate pain severity. The scale uses drawings of different faces exhibiting increasing levels of pain and was created in 1983 by two pediatric healthcare workers, Donna Wong and Connie Baker, to help children express their pain. Today, the scale can be used for anyone age three and older to visually represent their pain level (Wong-Baker FACES Foundation, 2023).

LINK TO LEARNING

The Wong-Baker FACES Pain Rating Scale (https://openstax.org/r/77WongBaker) can be used for a variety of patients including children, patients of diverse cultures and native languages, and patients who are nonverbal due to

its simplistic illustrations.

To use this scale, use the following evidence-based instructions. Explain to the patient that each face represents a person who has no pain (hurt), some pain, or a lot of pain. "Face 0 doesn't hurt at all. Face 2 hurts just a little. Face 4 hurts a little more. Face 6 hurts even more. Face 8 hurts a whole lot. Face 10 hurts as much as you can imagine, although you don't have to be crying to have this worst pain." Ask the patient to choose the face that best represents the pain they are feeling.

Even though this pain rating scale was intended for children, research shows that many adult patients may prefer a visual scale. Patients with different native languages or patients who are cognitively delayed may have an easier time understanding a visual scale compared to a numeric rating scale.

McCaffrey Initial Pain Assessment Tool

The **McCaffrey Initial Pain Assessment Tool** is another assessment tool that helps patients express their pain. The McCaffrey Initial Pain Assessment Tool uses visual aids and questions including elements of the PQRSTU mnemonic to provide a comprehensive pain assessment. The McCaffrey tool provides a more comprehensive picture of a patient's pain than the numeric rating scale or the Wong-Baker FACES scale.

The McCaffrey pain assessment tool includes questions pertaining to the severity, causes, contributing factors, and effects of pain. Images of the human body are included to help patients identify the exact location of their pain. There are detailed questions to help patients express the effects of pain such as accompanying emotions or symptoms, decreased quality of life, decreased physical activity, and poor sleep.

Collecting Objective Data

Collecting objective data is the second half of a comprehensive pain assessment. Objective data include things that the nurse can measure, such as vital signs and patient behavior. Objective data can help the nurse understand the patient's pain rating and corroborate the subjective assessment data (Xu & Huang, 2020).

An objective pain assessment includes measuring vital signs, physical assessment, and observing for nonverbal indicators of pain, such as grimacing or moaning. It is especially important to observe for nonverbal indicators of pain in patients unable to self-report their pain, such as infants, children, patients who have a cognitive disorder, patients at end of life, patients who are non-English speaking, or patients who tend to be stoic due to cultural beliefs.

Nurses should be aware that pain can be exhibited through physical symptoms and patient behaviors. A pain assessment should be performed by the nurse prior to any patient interventions to determine if physical assessment findings are related to pain or something else. For example, a patient appears hunched over and guarding their stomach with reports of nausea and lack of appetite. The nurse should recognize that these symptoms could be physical signs of pain and perform a comprehensive pain assessment as the initial intervention.

Collecting objective data allows the nurse to corroborate the subjective assessment of a patient's pain. An objective pain assessment is especially important if the patient is unable to answer questions about their pain.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 8

Refer back to Chapter 19 Oxygenation and Perfusion, Chapter 22 Activity, Chapter 24 Skin Integrity, and Chapter 26 Urinary Elimination for Unfolding Case Study Parts 1 to 7 to review the patient data. Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living due to weakness and increased dyspnea. She has been admitted to the telemetry unit.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history:** Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Flow Chart	**1730: Assessment** Blood pressure: 132/80 mm Hg Heart rate: 94 beats/minute Respiratory rate: 18 breaths/min Temperature: 98.9°F (37.2°C) Oxygen saturation: 94 percent on room air Pain: 7/10 (back pain)

1. Recognize cues: What cues are the priority for the nurse to recognize?
2. Analyze cues: What subjective and objective information would the nurse want to obtain about the recognized cues?
3. Prioritize hypotheses: What do you think might be some contributing factors to the patient's back pain?

Physical Assessment

A physical assessment is crucial to develop a pain treatment plan. Assessment of the location of the patient's pain can give the nurse context to the potential cause of pain. The nurse should inspect the site of pain for any abnormalities such as swelling, lacerations, or discoloration. Areas of pain can be identified by palpating for any tenderness, swelling, or change in temperature. The nurse should note if the patient is guarding any body part as this could indicate the location of pain. Symptoms such as diaphoresis, nausea, vomiting, or lack of appetite can often be the result of pain. For example, a patient reports moderate pain on their upper back. Upon examining the patient's back, the nurse finds bruising and tenderness upon palpation on the patient's right shoulder. The physical assessment helps the nurse pinpoint a specific location of pain, which can help guide pain management.

Decreased daily activity can be another result of pain, especially if the patient is experiencing chronic unmanaged pain. Assessing the effect pain has on a patient's ability to bathe, dress, prepare food, eat, walk, and complete other daily activities is a new standard of care that assists the interdisciplinary team in tailoring treatment goals and interventions that are customized to the patient's situation. For example, for some patients, chronic pain affects their ability to be employed, so effective pain management is vital so they can return to work. For other patients receiving palliative care, the ability to sit up and eat a meal with loved ones without pain is an important goal.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Cues: Identifying Physical Pain Assessment Data

The nurse is performing an initial assessment on a school-aged patient who has arrived to the hospital after being hit with a baseball. The nurse observes that the patient is guarding their right leg and is grimacing while sitting in the bed. The nurse inspects the patient's right leg and identifies discoloration and swelling. The nurse observes the right leg is positioned at an odd angle and the patient cries out upon palpation. The patient is

unable to move their leg and states “It hurts even more when I try to move.” The nurse recognizes that the odd angle and decreased mobility of the patient’s leg is most concerning. The nurse recognizes that further evaluation is needed to determine appropriate interventions for the patient’s pain.

Observe Expression and Posture

Nonverbal pain cues are an important part of an objective pain assessment. Expression and posture can indicate that a patient is in pain. Facial expressions such as grimacing, moaning, clenched teeth, or crying are ways for patients to express pain. Abnormal posture such as hunching over, contracting, rigidity, limited movement, or abnormal gait could also indicate that the patient is in pain (Figure 30.8).

FIGURE 30.8 A patient can exhibit physical signs of pain such as poor posture and guarding. (credit: “day 045” by Holly Lay/Flickr, CC BY 2.0)

Abnormal posture does not always indicate pain. A patient may have a stooped posture due to certain conditions, such as scoliosis or arthritis, and report no pain. The nurse should ask the patient if the abnormal posture is normal for them and always initiate a pain assessment.

Patients often exhibit abnormal posture and abnormal facial expressions together when experiencing pain. For example, a patient may exhibit a hunched posture but appear calm and relaxed and report no pain. Another patient may exhibit a hunched posture accompanied by moaning and crying. This could indicate that this is not a normal posture for the patient and may be related to pain.

When assessing patients with abnormal posture or facial expressions, the nurse should recognize that they could be potential nonverbal pain cues. Sometimes patients are in too much pain to speak or may be unable to verbally communicate. Nonverbal indicators of pain such as abnormal posture and facial expressions can be helpful to the nurse when collecting objective pain assessment data.

Inspect Skin, Muscles, and Joints

Performing an assessment of the skin, muscles, and joints can help the nurse identify specific areas of pain. Changes in skin, decreased range of motion, and an abnormal gait can all be indicative of pain. Through subjective data collection, the nurse can identify the general location of the patient’s pain. Then the nurse can assess the skin,

muscles, and joints in that area to provide more data to the pain assessment.

The nurse should inspect the skin for any abnormalities such as swelling, lacerations, skin breakdown, drainage, and discoloration. Areas of pain can be identified by palpating for any tenderness, swelling, or change in temperature.

Abnormal gait, decreased range of motion, and decreased muscle strength can all be signs of pain. Just like when assessing posture and facial expressions, it is important for the nurse to remember that abnormalities in the skin, muscles, and joints do not always indicate pain. The nurse should pay particular attention to what the patient is reporting about current symptoms, as well as history of any issues. Information should be compared to expectations for the patient's age group or that patient's baseline. For example, an older patient may have chronic limited range of motion in the knee due to osteoarthritis, whereas a child may have new, limited range of motion due to a knee sprain that occurred during a sports activity.

Changes in skin, muscles, and joints are not always present with pain. However, these assessments can help the nurse identify a specific location of pain or potential aggravating factors.

Measure Vital Signs

Abnormal vital signs can be another nonverbal indicator of pain, especially when patients cannot show behavioral signs of pain (Ford, 2019). For example, a patient who is sedated and intubated cannot answer questions about their pain or exhibit any behaviors indicating pain. The nurse can measure vital signs along with other physical symptoms to assess pain.

Pain can cause hypertension, tachycardia, or tachypnea. Respiratory distress such as loud breathing, nasal flaring, or the use of accessory muscles can also indicate pain. Just like other nonverbal pain indicators, abnormal vital signs can also be present in the absence of pain. The nurse must use other assessment tools in addition to measuring vital signs to determine if the vital signs are related to pain (Ford, 2019).

In 1995, the American Pain Society introduced the concept of pain as the fifth vital sign to encourage providers to assess pain more frequently and prioritize pain assessments in patient care (Scher et al., 2017). There is ongoing debate as to whether treating pain as the fifth vital sign has contributed to the ongoing opioid crisis in America. Some providers believe that putting an intense focus on pain management can lead to the overprescribing of opioids, but other providers believe that pain management should be the priority in patient care. Current research shows that pain is an ongoing patient concern, and that consistent, multidimensional pain assessments are most effective in managing pain (Scher et al., 2017).

Nurses must always make pain a top priority of patient care. Nurses must include multiple assessment tools, such as measuring vital signs, in their pain assessments and individualize their assessments to meet each patient's needs.

Assess Behavioral Cues

Behavioral cues can be important indicators of pain if the patient is unable to answer subjective assessment questions. The nurse may notice a flat affect in a patient in pain. Affect refers to the outward display of one's emotional state. For example, a patient with a "flat affect" refers to very few facial expressions being displayed to indicate emotion (Figure 30.9).

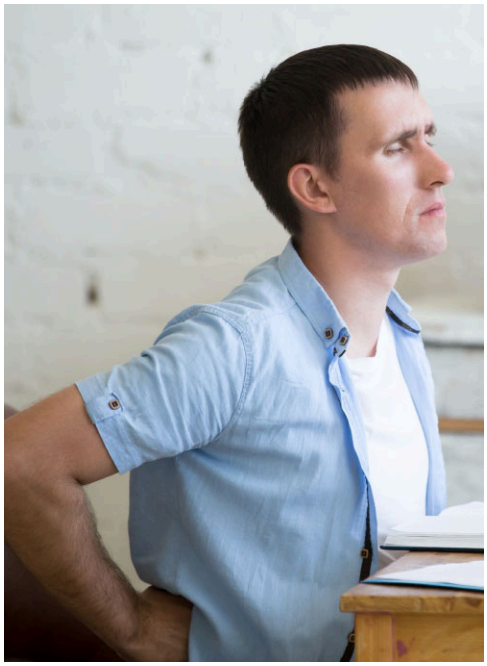

FIGURE 30.9 Patients with flat affects are often associated with depression or anger, but they can also be behavioral cues of pain. (credit: "young office man suffering from backache" by centro güel/Flickr, CC BY 2.0)

The nurse must recognize that not every patient in pain will have the same behavioral cues. For example, one patient in pain may appear quiet and withdrawn while another patient may appear very angry and aggressive. A patient's behavioral cues may not always match their subjective pain assessment. This is often the case with patients in chronic pain. For example, a patient who has cancer may rate their pain an 8 out of 10 while calmly eating lunch with their family. It is important for the nurse to remember that pain is whatever the patient says it is and that behavioral cues are only one aspect of the comprehensive pain assessment.

Documenting Pain Assessment

Documentation of the pain assessment, interventions, and reevaluation are key to effective, individualized pain management. Pain assessments should occur at regular intervals and a reassessment of pain should occur after any interventions (The Joint Commission, 2020).

When documenting subjective data, it should be in quotation marks and start with wording such as, "The patient reports..." or "The patient's wife states ...". The nurse should document any subjective data stated by the patient including their pain score, what pain rating scale was used, and any follow-up information. The nurse should also document any behaviors, facial expressions, or physical attributes that could be related to pain. For example, the nurse would document "Patient states pain is a 7 out of 10 using the numeric rating scale. Patient is crying and grimacing. Patient states pain is in their right shoulder and has been ongoing for two days. Patient states heat relieves the pain for short periods of time. Patient's right shoulder does not appear to have any skin breakdown or discoloration. Patient has decreased range of motion in their right shoulder when compared to the left shoulder."

The nurse should also document the patient's comfort-function goal and any communication with other healthcare providers. Documenting a pain assessment notifies the patient's entire healthcare team of the assessment data. This allows the healthcare team to begin to plan interventions and further evaluation if needed. The team cannot initiate pain interventions without good assessment documentation, so this should be a top priority for the nurse.

Documenting Treatment

All pain management interventions need to be documented according to the policy of each healthcare facility. Pain management interventions can be pharmacological or nonpharmacological. Nonpharmacological treatments can include exercise, mind-body practices, psychological therapy, heat or cold, braces, and rehabilitation (Agency for Healthcare Research and Quality [AHRQ], 2019).

Any administered pain medication should be documented in the patient's electronic medication administration

record (eMAR). It is important to immediately document the intervention to avoid potential errors such as an unintended repeat dose of medication. Nonpharmacological treatments should also be documented in the patient's medical record. Documentation of all pain interventions ensures all providers are aware of pain management strategies and that the patient is getting timely and effective treatment.

Documenting Evaluation of Treatment

All pain management interventions need to be evaluated and documented to ensure they are effective. It is important to perform a follow-up assessment in the appropriate time frame. The nurse should be aware of the different mechanisms of action for different forms of pain medications to best evaluate the effectiveness. For example, administration of intravenous pain medication should be evaluated within a shorter time frame than oral pain medication due to the different durations of action. The Joint Commission guidelines state that healthcare facilities should have policies in place regarding timeliness of pain reassessments and evaluation (The Joint Commission, 2020).

The nurse should document a new pain level and any symptoms of pain following any interventions. For example, if a patient reported a pain level of 8 out of 10 before PRN pain medication was administered, the nurse evaluates the patient's pain level after administration to ensure the pain level is decreasing and the pain medication was effective. Effective pain management involves mutual pain goals between the healthcare team and the patient and ongoing reassessment with the patient to assess the effectiveness of pain interventions (ANA Center for Ethics and Human Rights, 2018). The nurse should compare the current pain rating to the patient's stated comfort-function goal. If the patient states that their pain does not meet their comfort-function goal, the nurse should continue to explore pain management strategies and continue to reevaluate.

30.5 Pain Management

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe pharmacological therapy in pain management
- Identify nonpharmacological therapy in pain management
- Recognize how patient-controlled analgesia (PCA) is used for pain management

Nurses have a responsibility to provide multimodal pain management (ANA Center for Ethics and Human Rights, 2018). Pain management should include different interventions and focus on helping patients improve their quality of life (National Center for Injury Prevention and Control, 2022).

Pain management requires collaboration with the entire interdisciplinary team. Involving specialists such as neurologists, surgeons, and physical therapists can help manage patients' pain (Dydyk & Grandhe, 2023). Pain can be managed by pharmacological and nonpharmacological therapy. The most effective pain management uses a combination of pharmacological and nonpharmacological interventions.

Pharmacological Therapy

A type of therapy called **pharmacological therapy** can be very effective in treating pain. Pharmacological therapy is the use of medication to treat a disease, illness, or medical condition. The type of medication depends on the type, duration, and severity of the pain (Ford, 2019). There are three main types of pain medications: opioid analgesics, nonopioid analgesics, and adjuvants. An **analgesic** is a medication used to relieve pain. When administering pain medications, the nurse must consider the patient's goals for pain relief and determine if past medications have been effective. The nurse must also consider if the patient is experiencing any side effects that may impact the patient and be aware of contraindications (AHRQ, 2019). Patients should be involved and engaged in their pain management plan. Research has shown improved patient outcomes when patients work together with the healthcare team to manage their pain.

Opioid Analgesics

An **opioid analgesic** is a powerful prescription medication that helps reduce pain by blocking pain signals. Common opioids include codeine, morphine, fentanyl, oxycodone, and tramadol. Different opioids have different amounts of analgesia, ranging from codeine used to treat mild to moderate pain, up to morphine, used to treat severe pain (Table 30.2). Opioids are commonly administered orally or intravenously, but can also be administered rectally,

subcutaneously, intramuscularly, or through the skin.

Generic Name	Trade Name(s)	Route	Adult Dosages
Codeine with acetaminophen	Tylenol #3	PO	30 mg/300 mg
Hydrocodone with acetaminophen	Lortab, Norco, Vicodin	PO	5 mg/300 mg or 325 mg 10 mg/320 mg or 325 mg 5 mg/500 mg
Oxycodone (immediate release and extended release) or Oxycodone with acetaminophen	Oxycodone (IR), OxyContin (ER) Percocet, Roxicet	PO PO	5–10 mg 5 mg/325 mg
Fentanyl	Duragesic, Sublimaze	Transdermal IM IV	12–100 mcg/hr 0.5–1 mcg/kg 0.5–1 mcg/kg
Hydromorphone	Dilaudid	PO Rectal SubQ, IM, and IV	4–8 mg 3 mg 1.5 mg (may be increased)
Morphine	Duramorph, MS Contin, Oramorph SR, Roxanol	PO and rectal SubQ, IM, and IV	30 mg (may be increased) 4–10 mg (may be increased)

TABLE 30.2 Common Opioid Analgesics

Opioids have a high risk of addiction and overdose, so it is important to consider other forms of pain management before prescribing opioids (National Center for Injury Prevention and Control, 2022). The Centers for Disease Control and Prevention (CDC) recommends avoiding opioids for pain management in patients younger than 18 years old and to avoid opioids as **first line therapy** for chronic pain (Dowell et al., 2022). First line therapy is medical treatment that is recommended as the best option for the initial treatment of a disease or medical condition.

It is important that patients are informed about the side effects and risks of opioids. Side effects of opioids include the following:

- addiction
- confusion
- constipation
- drowsiness
- itching
- nausea and vomiting
- overdose
- physical dependence
- respiratory depression
- tolerance

Constipation, nausea, and vomiting are common side effects of opioids. Opioids slow peristalsis and cause increased reabsorption of fluid into the large intestine, resulting in slow-moving, hard stools. Nurses should educate patients on preventing constipation with a bowel management program including stool softeners, fluids, well-

balanced diet, and physical activity (as allowed with pain/postsurgical restrictions) to aid in preventing constipation. Because opioids slow gastrointestinal mobility, nausea and vomiting can also occur when taking opioids. Typically, patients will build enough tolerance against nausea and vomiting after taking opioids for a few days. Respiratory depression is one of the most serious potential side effects of opioids. Nurses must closely monitor patients receiving opioids for respiratory depression and administer naloxone to reverse the opioid effects if needed.

As important as pain management is, it is also crucial that healthcare providers are mindful of prescribing opioids to treat pain due to the high risk of addiction and overdose. Addiction is a chronic disease of the brain pursing reward and/or relief by substance use. Patients who have an addiction have trouble stopping the use of opioids and often struggle with addiction for the rest of their life. Patients can also struggle with **tolerance** and **physical dependence** with opioid misuse. Tolerance is when the body builds up resistance to a medication. Physical dependence is when the patient experiences physical symptoms of withdrawal, such as anxiety, diaphoresis, and muscle cramps, when stopping a medication (National Center for Injury Prevention and Control, 2022).

Healthcare providers must be vigilant to avoid addiction and overdose with opioid use especially with the current opioid epidemic in the United States. Opioids can be very effective in pain management when used appropriately, but healthcare providers must monitor for serious side effects (ANA Center for Ethics and Human Rights, 2018).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety: Opioid Analgesic Administration

Disclaimer: Always follow the facility policy for medication administration.

Definition: Minimize risk of harm to patients and providers through both system effectiveness and individual performance.

Knowledge: Examine human factors and other basic safety design principles as well as commonly used unsafe practices.

Skill: Demonstrate effective use of strategies to reduce risk of harm to self or others. The nurse will:

- Avoid distractions and disruptions when preparing and administering medications.
- Have a second nurse witness any wasted opioid medication and document the wasted amount.
- Perform hand hygiene before administering medications.
- Perform a comprehensive pain assessment on the patient prior to medication administration.
- Verify the patient's information prior to medication administration.
- Monitor for adverse effects after medication administration.
- Perform a comprehensive pain assessment after medication administration to assess effectiveness.

Attitude: Value the contributions of standardization and reliability to safety.

Nonopioid Analgesics

Nonopioid analgesics are another effective form of pain management. A **nonopioid analgesic** is a type of medication that includes **nonsteroidal anti-inflammatory drugs (NSAIDs)** used for acute and chronic pain relief. Other nonopioid analgesics include acetaminophen, anticonvulsants, lidocaine, tricyclic and tetracyclic antidepressants, and serotonin and norepinephrine reuptake inhibitor (SNRI) antidepressants (National Center for Injury Prevention and Control, 2023). Acetaminophen is used to treat mild pain and fever but does not have anti-inflammatory properties. Acetaminophen is often administered orally but can be administered rectally or intravenously. There is a risk of severe liver damage when taking too much acetaminophen or consuming a large amount of alcohol while taking acetaminophen. Nonopioid analgesics have high risks in certain patient populations such as older adults, pregnancy, and patients with liver, cardiovascular, kidney, and gastrointestinal disease (National Center for Injury Prevention and Control, 2023). It is important for nurses to educate these patient populations about the side effects of nonopioid analgesics and the importance of limiting the amount consumed.

NSAIDs provide mild to moderate pain relief while also reducing fever and inflammation by inhibiting the production of prostaglandins. NSAIDs can be used along with opioids for severe pain. Common NSAIDs include ibuprofen,

naproxen, ketorolac, and aspirin (Table 30.3). Ibuprofen and naproxen are commonly prescribed NSAIDs and can be taken several times a day. Ketorolac can help treat breakthrough pain and is indicated for short-term management of moderate to severe acute pain. Common side effects of NSAIDs include nausea and vomiting, gastrointestinal bleeding, and kidney failure. There is an increased risk of heart attack, heart failure, and stroke if patients take more NSAIDs than prescribed or longer than directed.

Drug Name	Administration Considerations	Adverse/Side Effects
Ibuprofen	• Given parenterally and orally • Assess pain prior to and after administration • May take with food or milk if stomach upset occurs • Stay well hydrated to prevent kidney failure • Assess patient for signs of GI bleed • Assess for skin rash • Monitor BUN, serum creatinine, CBC, and liver function test • Do not administer to patients who are allergic to aspirin or other NSAIDs	• Headache • GI bleed • Constipation • Dyspepsia • Nausea • Vomiting • Steven-Johnson syndrome • Kidney failure
Aspirin	• Given orally • Assess pain prior to and after administration • Children under 12 years: do not use unless directed by a provider • Take with a full glass of water and sit upright for fifteen to thirty minutes after administration • Take with food if the patient reports that aspirin upsets their stomach • Do not crush, chew, break, or open an enteric-coated or delayed-release pill; it should be swallowed whole • The chewable tablet form must be chewed before swallowing • Should be stopped seven days prior to surgery due to the risk of postoperative bleeding	• GI upset • GI bleeding • Tinnitus

TABLE 30.3 Commonly Used NSAIDs

Drug Name	Administration Considerations	Adverse/Side Effects
Ketorolac	• Given orally, parenterally and as an ophthalmic solution • Assess pain prior to and after administration • Therapy should always be given initially by the IM or IV route; then use the oral route as a continuation of parenteral therapy • Stay well hydrated to prevent kidney failure • Assess patient for signs of GI bleed • Assess for skin rash • Monitor BUN, serum creatinine, CBC, and liver function tests • Do not administer before any major surgery • Do not administer to patients who are allergic to aspirin or other NSAIDs	• Drowsiness • Headache • GI bleed • Abnormal taste • Dyspepsia • Nausea • Steven-Johnson syndrome • Edema • Kidney failure
Naproxen	• Given orally • Assess pain prior to and after administration • May take with food or milk if stomach upset occurs • Stay well hydrated to prevent kidney failure • Assess patient for signs of GI bleed • Assess for skin rash • Monitor BUN, serum creatinine, CBC, and liver function test • Do not crush, chew, or split open a delayed-release pill; it should be swallowed whole • Do not administer to patients who are allergic to aspirin or other NSAIDs	• Headache • GI bleed • Constipation • Dyspepsia • Nausea • Vomiting • Steven-Johnson syndrome • Tinnitus • Kidney failure

TABLE 30.3 Commonly Used NSAIDs

Adjuvant Analgesics

An **adjuvant analgesic** is a type of medication that is not classified as an analgesic but has been found to have an analgesic effect along with opioids (Table 30.4). Adjuvant medications include antidepressants and anticonvulsants such as gabapentin and amitriptyline. Adjuvant analgesics can be very effective for neuropathic pain but may not be as effective for somatic or visceral pain (Jacques, 2022).

Drug Name	Administration Considerations	Adjuvant Effect	Adverse/Side Effects
Amitriptyline	• Boxed warning: Increased risk of suicidality • Taper dose when discontinuing; do not stop abruptly • Monitor orthostatic blood pressures and consider fall risk precautions	Decrease feelings of chronic pain	• Immediately report signs or symptoms of suicidality • Anticholinergic effects • Hypotension • May lengthen QT interval; risk for arrhythmias • Sedation • Sexual dysfunction • Altered seizure threshold
Gabapentin	• Administer first dose at bedtime to decrease dizziness and drowsiness • Monitor for worsening depression, suicidal thoughts or behavior, and/or any unusual changes in mood or behavior • Taper dose; do not stop abruptly	Decreased neuropathic pain	• Increased suicidal ideation • Immediately report fever, rash, and/or lymphadenopathy • CNS depression: dizziness, somnolence, and ataxia

TABLE 30.4 Commonly Used Adjuvant Analgesics

Drug Name	Administration Considerations	Adjuvant Effect	Adverse/Side Effects
Prednisone	• Never abruptly stop corticosteroid therapy • Use the lowest dose possible to control disorder and taper when feasible • May require concurrent treatment for osteoporosis or elevated blood glucose levels • Regularly monitor for development of symptoms of adrenal suppression • Contraindicated in patients with untreated systemic infections	Reduce inflammation	• Fluid and electrolyte imbalances • Increase in blood glucose • Muscle weakness • Peptic ulcers • Thin, fragile skin that bruises easily • Poor wound healing • Development of Cushing syndrome • May mask some signs of infection, and new infections may appear • Psychic derangements may appear when corticosteroids are used, ranging from euphoria, insomnia, mood swings, personality changes to severe depression

TABLE 30.4 Commonly Used Adjuvant Analgesics

Drug Name	Administration Considerations	Adjuvant Effect	Adverse/Side Effects
Baclofen	• Given parenterally and orally • Administer orally with milk or food to minimize gastric upset • Assess for muscle spasticity before and during therapy • Observe patient for drowsiness • For intrathecal administration, monitor patient closely during test dose and titration and have resuscitative equipment available	Relieve muscle spasms and spasticity	• Drowsiness • Confusion • Dizziness or lightheadedness • Nausea • Constipation • Muscle weakness
Lidocaine topical	• Given topically on the skin; can be in the form of a cream, ointment, or patch • Patches should not be worn for more than twelve hours in a twenty-four-hour period	Relieve local pain	• Headache • Vomiting • Irritation at site • Numbness • Sudden dizziness or drowsiness • Confusion • Speech or vision problems • Tinnitus • Severe allergic reaction, such as hives, dyspnea, and angioedema of the face, lips, tongue, or throat

TABLE 30.4 **Commonly Used Adjuvant Analgesics**

Antidepressants can help control how pain signals are delivered to and processed by the brain. Amitriptyline is a tricyclic antidepressant that can help treat neuropathic pain. Amitriptyline can cause sedative effects, so it is usually administered at bedtime. Anticonvulsants can block certain types of pain signals and help decrease neuropathic pain (Jacques, 2022). Gabapentin is an anticonvulsant that can also treat neuropathic pain and restless leg syndrome. Side effects of gabapentin include mental health changes, drowsiness, and weakness.

Other medications such as corticosteroids, muscle relaxants, and topical agents can also help reduce pain. Corticosteroids decrease inflammation and topical agents can be directly applied to the skin to decrease pain (Jacques, 2022). Adjuvant analgesics can help reduce pain in a variety of ways but are not always effective on their own.

Nonpharmacological Therapy

A type of therapy called **nonpharmacological therapy** can be very effective when used in conjunction with pharmacological therapy. The Joint Commission recommends that healthcare providers use at least one

nonpharmacological pain intervention when creating a pain treatment plan (The Joint Commission, 2020). Nonpharmacological therapy is any intervention that helps reduce pain without using medication. Nonpharmacological therapy can include psychological, emotional, and environmental therapies.

Psychological and emotional therapies can be incorporated into the daily lives of patients and can be especially useful in treating chronic pain. Psychological and emotional therapy can include relaxation techniques, music, breathing, art therapy, distraction, meditation, or cognitive behavioral therapy. Changing the environment can also help patients manage their pain. Adjusting lighting, sounds, and temperature to a more relaxing environment has been shown to reduce pain (Ford, 2019). Exercise and physical therapy can also help reduce pain without the side effects of pharmacological therapy. Patients can easily incorporate nonpharmacological therapy such as physical therapy into their daily lives without risks.

Physical Therapy

Many healthcare providers prefer using **physical therapy** over pharmacological therapy when treating pain (Nall, 2021). Physical therapy involves working with a trained professional to use exercise and movement to improve strength and flexibility. Physical therapy can help chronic conditions such as arthritis, nerve pain, and fibromyalgia (Figure 30.10) (Nall, 2021).

FIGURE 30.10 Physical therapy and movement can help patients feel more relaxed and reduce pain through improved strength and flexibility. (credit: "Naval Hospital Jacksonville Physical Therapy 220926-N-QA097-055" by Navy Medicine/Flickr, Public Domain)

Research shows that physical therapy and exercise improves mobility and overall quality of life (Nall, 2021). Physical therapy and exercise can also lead to weight loss, which can reduce joint and back pain. Exercise can also promote relaxation and stress reduction. Yoga combines movement with breathing and meditation. Yoga can help

improve strength, balance, flexibility, and mental health (Nall, 2021).

Physical therapy and exercise do not need to be intense or complicated to be effective. Nurses should educate patients about easy ways to incorporate movement into their daily lives and can help patients find a level of physical therapy that works for them.

Massage

Massages can help relax patients and provide pain relief by loosening tight muscles. A **massage** is a form of therapeutic touch where a therapist uses touch and pressure to loosen tight muscles and tendons. Touch and pressure block pain signals, which relieves pain and improves the blood flow to tight muscles, which in turn can promote relaxation (Nall, 2021).

Patients should be cautious with massages if they have a skin rash, infection, certain cardiovascular diseases, or are pregnant. Otherwise, there are minimal risks and side effects with massage (Nall, 2021). Sometimes, patients may experience pain during the massage due to the intense pressure of the therapist. Nurses can educate patients to ask their massage therapist to use varying amounts of pressure to provide relaxation and pain relief.

Guided Imagery

A relaxation technique called **guided imagery** can help ease pain and promote relaxation. It is a technique that uses images or scenes to invoke positive and relaxing feelings. The goal of guided imagery is to stimulate natural relaxation responses to reduce pain, slow breathing, decrease blood pressure and heart rate, and decrease feelings of stress (West, 2022).

Guided imagery can be done with or without direction. Once patients are familiar with guided imagery practice, it is easy to incorporate it into their daily lives. Guided imagery consists of imagining anything the patient deems as relaxing or calming. For example, a patient may imagine being on the beach on a warm, sunny day and listening to the ocean sounds. Another patient may imagine their body fighting off cancer or a chronic illness and being able to function without pain. The image can be whatever the patient chooses, but they should try to engage all their senses during guided imagery (West, 2022). Patients can also use a therapist, an audio recording, or an app to direct them through guided imagery.

The process of guided imagery includes the following steps:

1. Choose a quiet place without distractions.
2. Get in a comfortable position and close your eyes.
3. Focus on whatever image you choose and engage all your senses.
4. Continue to add more details to the scene and visualize the scene for as long as is needed.
5. Gradually open your eyes and reengage with the present environment (West, 2022).

Guided imagery can be especially helpful in patients with chronic pain. Patients who experience pain on a daily basis often seek alternative therapies to help manage their pain. Guided imagery can be an easy method for patients to incorporate into their daily lives and on the go.

LINK TO LEARNING

Guided imagery scripts (https://openstax.org/r/77gdimagescpt) can be used to help promote relaxation and reduce pain. Guided imagery scripts can be tailored toward specific scenarios, such as sleep promotion, pain reduction, or reducing panic attacks.

Distraction

Another important tool for nurses to use in pain management is **distraction**. Distraction is a method that moves patients' attention away from pain (Ibitoye et al., 2019). Distraction moves patients' attention away from pain by modifying the nociceptive responses to decrease pain. Methods of distraction include music, videos, conversation, games, interactive toys, and controlled breathing. Music specifically can help reduce pain and relax patients. Music is often used as a pain reduction tool before, during, and after surgery. Research has found that listening to music when having surgical procedures can help reduce anxiety and pain (Nall, 2021).

Distraction can especially help reduce pain in pediatric patients. Blowing bubbles, playing games, and watching videos can help reduce anxiety and pain in children. Younger children are more easily distracted, and more invasive interventions can often be avoided if distraction is used effectively in pain management (Trottier et al., 2019).

Biofeedback

Biofeedback is a technique that uses visual or auditory feedback to control bodily functions such as heart rate and breathing patterns. During **biofeedback** therapy, sensors are used to measure bodily functions and show changes with different adjustment methods. When the body is in pain, physical factors such as heart rate, respiratory rate, and muscle contraction can change. Biofeedback helps a patient recognize these changes and make a conscious effort to relax. Decreasing heart rate and respiratory rate, as well as relaxing muscles, can help stimulate pain reduction in patients. Patients who experience chronic pain are ideal candidates for biofeedback therapy, as patients typically need multiple sessions to see results. Biofeedback is a popular nonpharmacological pain intervention due to its minimal risk and side effects (Mayo Clinic staff, 2023).

Biofeedback machines are available in physical therapy clinics, hospitals, and outpatient clinics. Some biofeedback machines are now available for home use. During biofeedback therapy, electrical sensors will monitor brain waves, body temperature, muscle contraction, heart rate, and respiratory rate. A healthcare provider will monitor these sensors and make suggestions to the patient to try to alter these bodily functions. Over time, the patient can learn to make these alternations without monitoring (Mayo Clinic, 2023).

Patient-Controlled Analgesia

Hospitalized patients with severe pain may receive **patient-controlled analgesia (PCA)**, which allows the patients to safely self-administer opioid medications using a programmed pump. PCA is used to treat acute, chronic, labor, and postoperative pain. A computerized pump contains a syringe of opioid analgesics and is connected directly to a patient's intravenous (IV) line. Doses of medication can be self-administered as needed by the patient by pressing a button. However, the pump is programmed to only allow administration of medication every set number of minutes with a maximum dose of medication every hour. These pump settings, and the design of the system requiring the patient to be alert enough to press the button, are safety measures to prevent overmedication that can cause sedation and respiratory depression. For this reason, no one but the patient should press the button for administration of medication (not even the nurse). In other cases, the PCA pump delivers a small, continuous flow of pain medication intravenously with the option of the patient self-delivering additional medication as needed, according to the limits set on the pump. PCA is useful for patients who have acute pain due to conditions such as trauma, burns, or pancreatitis (Pastino & Lakra, 2023). Patients with mild chronic pain may be good candidates for PCA.

REAL RN STORIES

Managing a PCA Pump for the First Time

Nurse: David, BSN
Clinical setting: Medical ICU
Years in practice: 1
Facility location: Hospital in a small town in Nevada

I had just started working in the medical ICU at my hospital as a new graduate nurse. Our orientation was about ten weeks, and I was almost to the end of my orientation. I was working with my preceptor but was pretty much doing everything on my own at that point.

We would occasionally get postsurgical patients, and that day I was assigned my first postsurgical patient. I was told this patient had undergone surgery to repair a femur fracture and would be in traction and have a PCA. The patient was coming to the ICU from the operating room (OR) in the next thirty minutes. I was very nervous, but my preceptor reassured me that I could handle this patient assignment.

When the patient arrived, they were screaming in pain and had wires and lines everywhere from the OR. Together with my preceptor and charge nurse, we quickly got the patient into the room and connected to the monitors. We

surveyed the lines and verified the medications that were currently running. The OR nurse and anesthesia gave a quick report as they "had to get moving on the next case." I was surprised that I did not get a chance to ask any questions. My preceptor said that often happens with postsurgical patients and we can always call the OR if we have questions later.

I then went to look at my patient's PCA pump. I was nervous because I had never seen a PCA pump and was not sure what it was. I remember hearing about them in nursing school but had no clue what I was supposed to do with it. My preceptor helped me look up the medication dose and rate in the MAR and showed me how to verify that the pump was set to the correct dose. She showed me how to document the dual nurse sign-off and the volume remaining in the pump. She then told me it was important to ensure the patient knew how to use the pump. The patient was fully awake from anesthesia and was able to answer our questions appropriately. My preceptor told me that you cannot let a confused or sedated patient use a PCA pump because they cannot always understand how it works. The patient verbalized our teaching and answered our pain assessment questions.

Throughout the rest of my shift, I frequently checked the PCA and the patient's pain levels. The patient expressed minimal pain throughout my shift and used the PCA periodically. I was shocked that the PCA managed to control the patient's pain so well right after surgery. My preceptor explained that PCA was a common form of pain management after surgery because it works so well. Even though setting up and managing the PCA was scary, I am glad I had the experience and the support of my preceptor to learn a new skill.

Benefits of PCA

The ability of the patient to self-administer pain medication has been shown to increase patient satisfaction and deliver timely pain interventions (Pastino & Lakra, 2023). It also reduces the stress of the nurse and patient of having to adhere to a dosing schedule of PRN analgesics that may not be adequate to treat the patient's pain. PCA may be a good option for patients who are unable to tolerate oral pain medications or for patients who have breakthrough pain and need frequent dosing. The patient can time their own medication according to the pain severity for better pain reduction and control.

Nursing Considerations for PCA

PCA pumps must have certain orders relating to the bolus dose, basal rate, and lockout time. The bolus dose is the dose that the patient receives each time they press the button on the PCA pump and is used for breakthrough pain. The **basal rate** is the continuous rate of the medication that maintains effective pain management. The lockout time is the amount of time after a bolus dose that the pump will not administer medication to the patient, even if they press the button, to prevent overdose. The PCA doses may be dependent on the type of medication, IV site, patient's weight, current research, and facility guidelines (Pastino & Lakra, 2023). It is important to review your facility's guidelines when programming PCA dosing.

There are contraindications for PCA. If the patient cannot understand how the PCA works and follow directions, they would not be good candidates for PCA. Allergies, infection, increased intracranial pressure, chronic kidney failure, and bleeding disorders are also contraindications for PCA (Pastino & Lakra, 2023).

Side effects of PCA use are the same as opioids and include constipation, nausea and vomiting, urinary retention, and pruritus (itching). The most serious potential adverse effect of opioids is respiratory depression. Respiratory depression is usually preceded by sedation. The nurse must carefully monitor patients receiving opioids for oversedation, which results in decreased respiratory rate. Patients at greatest risk are those who have never received an opioid and are receiving their first dose, those receiving an increased dose of opioids, or those taking benzodiazepines or other sedatives concurrently with opioids. If a patient develops opioid-induced respiratory depression, the opioid is reversed with naloxone (Narcan) that immediately reverses all analgesic effect.

Nurses must follow facility guidelines when administering PCA and ensure that the pump is set up correctly. Many facilities have safeguards in place such as a dual nurse sign-off, scanning medications into the electronic medication administration record (eMAR), and guardrails on the pumps to prevent medication errors. To document the amount and frequency of pain medication the patient is receiving, as well as to prevent drug diversion, the settings on the pump are checked at the end of every shift by the nurse as part of the bedside report. The incoming and outgoing nurses double-check and document the pump settings, the amount of medication administered during the previous shift, and the amount of medication left in the syringe.

UNFOLDING CASE STUDY

Unfolding Case Study #4: Part 9

Refer back to Unfolding Case Study #4: Part 8 for a review on the patient data.

Nursing Notes	**1800:** Focused pain assessment performed. Patient reports lower back pain rated 7/10 on numerical pain scale that began last night. Patient states, "I think it's coming from the hospital bed because I can't get comfortable." Patient reports the pain is worse with immobility but improves slightly with ambulation.
Provider's Orders	**1830: New orders** • Ketorolac (Toradol) 15 mg IV Q6 hours PRN severe pain • Physical therapy referral

4. Generate solutions: What is the rationale for each of the provider's orders?
5. Take action: After administering the ketorolac as prescribed, what adverse effects will the nurse monitor for? What assessment findings might indicate the patient is experiencing these adverse effects?
6. Evaluate outcomes: What assessment findings would indicate effectiveness of the interventions performed?

Summary

30.1 The Pain Process

Pain can be classified and described in many different ways. The duration, location, and cause are all important factors when assessing and treating pain. The physiologic process of pain describes how the brain is alerted to painful stimuli and how it can modify and adjust the amount of pain that is felt in the body. Biological, psychological, and social factors can affect the perception of pain and impact how patients react. The central nervous system can also determine which pain signals are allowed through to the brain. This gate control theory can help nurses understand how pain is perceived under different circumstances.

Nurses must be aware of the factors that can affect pain and patients' perceptions of pain. One patient may perceive pain differently than another patient does, but both are right in their assessment. Nurses must accept the pain as whatever the patient says it is and individualize pain management strategies for each patient.

30.2 Responses to Pain

Physiologic, behavioral, and emotional responses to pain are the brain's way of keeping the body safe in signs of danger. The sympathetic and parasympathetic nervous systems allow the body to initiate responses that either fight or run away from a perceived threat. Behaviors, emotions, and vital sign changes such as elevated blood pressure, heart rate, and respiratory rate can all be ways that patients express signs of pain.

Behavioral and emotional responses to pain can vary among patients. Some patients may vocalize their pain or express body movements and social interactions that demonstrate pain. Some patients may experience negative emotions such as fear and anxiety when dealing with pain. Nurses must be aware of all physiologic responses to pain and know that these responses can vary greatly among patients. Physiologic responses to pain are involuntary and are often the first reaction a patient will have to pain. These responses can help healthcare providers assess pain and develop effective strategies for managing pain.

30.3 Factors Affecting Pain

There are many factors that play a role in pain. Psychosocial factors can influence a patient's perspective on pain. A patient who associates pain with trauma may have a hard time coping with chronic pain. Physiological factors such as developmental level and age can change a patient's perception and expression of pain over time. A patient's psychological view of pain can influence how effective pain management strategies can be. A patient who catastrophizes their pain may have worse outcomes than a patient who expects their pain medication to be effective. Nurses play an important role in educating patients about these factors. Patients' awareness of these factors and their effect on pain can make a big difference in pain management outcomes.

30.4 Pain Assessment

A comprehensive pain assessment must include subjective and objective data. Collecting subjective data involves choosing an appropriate pain rating scale, asking open-ended assessment questions, and accepting the pain is whatever the patient says it is. Collecting objective data involves performing a physical assessment, measuring vital signs, and assessing nonverbal behavior. Each pain assessment may have different ways of collecting subjective and objective data. The nurse should choose the pain assessment tools that are appropriate for each patient.

Pain assessments, interventions, and evaluations should be performed and documented in a timely manner to ensure adequate pain relief is achieved. Documentation of pain management ensures the patient receives timely and effective treatment. Pain management strategies cannot be deemed effective without comprehensive assessment and documentation. Pain management is an ongoing concern for patient care, and a quality pain assessment is the first step to effective pain relief.

30.5 Pain Management

There are many different types of interventions that can be used for pain management. Pain management should always include patient involvement and a combination of nonpharmacological and pharmacological interventions. Nurses have a responsibility to provide adequate pain management to all patients and will encounter pain in all types of healthcare settings.

Pharmacological therapy can be very effective in managing pain but must be used with caution. There are many risks and side effects, especially with opioid analgesics. Nurses must be aware of the risks and ensure patients are educated on appropriate dosing and monitoring when taking these medications. Patient-controlled analgesia (PCA) can also be an effective way to manage pain and involve the patient in their care. However, PCA is also not without risks. Nurses must be vigilant when monitoring a patient receiving PCA and ensure the patient meets criteria to be able to understand how to use PCA.

Nonpharmacological therapy can also be an effective pain management strategy, especially when paired with pharmacological therapy. Interventions such as physical therapy, guided imagery, and distraction can be effective pain management strategies without the same risks as pharmacological therapy. Nonpharmacological pain interventions have been shown to be effective in treating all types of pain and allow patients to avoid the side effects and risk of chronic issues such as addiction and overdose from opioid analgesics. Being aware of all types of pain management strategies is essential for all nurses and helps nurses effectively manage pain.

Key Terms

acute pain pain that is short in duration and caused by an acute event
adjuvant analgesic medication that is not classified as an analgesic but has been found to have an analgesic effect with opioids
affective response the emotional interpretation of pain, such as how uncomfortable the pain is
algophobia the extreme fear of pain
analgesic medication used to relieve pain
basal rate the continuous rate of the medication that maintains effective pain management
biofeedback a technique that uses visual or auditory feedback to control bodily functions such as heart rate and breathing patterns
breakthrough pain pain that persists along with chronic pain even with pain interventions
catastrophizing picturing the worst possible outcome for a situation
chronic pain pain that persists for longer than three months
cutaneous pain pain that is perceived from the skin and caused by heat, cold, or mechanical or chemical stimuli
distraction a method that moves patients' attention away from painful stimuli
etiology of pain the specific cause of pain
fight-or-flight response the automatic response from the sympathetic nervous system to a perceived stressful or dangerous situation, which triggers the body to either run away from or fight the perceived threat
first line therapy medical treatment that is recommended as the best option for the initial treatment of a disease or medical condition
guided imagery a relaxation technique that uses images or scenes to invoke positive and relaxing feelings
idiopathic pain chronic pain from an unknown origin
massage a form of therapeutic touch where a professional uses touch and pressure to loosen tight muscles and tendons
McCaffrey Initial Pain Assessment Tool a pain assessment tool that uses visual aids and questions including elements of the PQRSTU mnemonic to provide a comprehensive pain assessment
modification of pain a change by the brain in the intensity of the pain signal based on the situation that originated the pain signal
neuropathic pain pain caused by neurological damage or dysfunction
neurotransmitter a chemical that carries messages between neurons to communicate throughout the body
nociception the process by which painful stimuli are detected by nociceptors and send the pain signals from the peripheral nervous system to the brain
nociceptive pain pain that originates in the peripheral nervous system from stimulation by heat, cold, or mechanical or chemical stimuli
nociceptor a type of sensory receptor in the peripheral nervous system that responds to potentially damaging stimuli by sending nerve signals to the central nervous system
nonopioid analgesic medication, including nonsteroidal anti-inflammatory drugs (NSAIDs), used for acute and chronic pain relief
nonpharmacological therapy interventions that reduce pain without using medication
nonsteroidal anti-inflammatory drug (NSAID) medication that provides mild to moderate pain relief while also

reducing fever and inflammation by inhibiting the production of prostaglandins

opioid analgesic powerful prescription medication that helps reduce pain by blocking pain signals

patient-controlled analgesia (PCA) a form of pain medication administration that allows hospitalized patients with severe pain to safely self-administer opioid medications using a programmed pump

pharmacological therapy the use of medication to treat a disease, illness, or medical condition

physical dependence a condition in which a patient experiences physical symptoms of withdrawal when stopping a medication

physical therapy the use of exercise and movement to improve strength and flexibility

physiologic response the body's involuntary response to a stimulus such as inflammation or changes in heart rate and blood pressure

placebo effect an improvement in a condition, such as the lessening of pain, that occurs due to the patient believing a treatment will be effective

post-traumatic stress disorder (PTSD) a psychiatric disorder in which a person experiences lingering effects triggered by a past traumatic event

referred pain pain perceived at a location other than the site originating the painful stimulus

somatic pain pain that originates in ligaments, tendons, bones, blood vessels, and muscles

tolerance a decrease in the effectiveness of a drug over time due to repeated use

transduction of pain the starting point of the pain process when stimuli activate nociceptors to alert the brain

transmission of pain the second step of the pain process when the pain signal is sent from the peripheral to the central nervous system

visceral pain pain that is activated when internal organs such as the stomach and kidneys are damaged

vocalization the use of sounds, noises, and words to express pain

Wong-Baker FACES Pain Rating Scale a visual pain assessment tool using drawings of different faces exhibiting increasing levels of pain

Assessments

Review Questions

1. What step in the pain process involves the gate control theory of pain?
   a. transduction of pain
   b. transmission of pain
   c. perception of pain
   d. modification of pain

2. The nurse is providing a class to nursing students on chronic pain management. What example describes chronic pain?
   a. a patient admitted to the hospital for a femur fracture
   b. a patient experiencing back pain from a car accident last year
   c. a patient receiving first aid for burning their hand on the stove
   d. a patient experiencing a ruptured aneurysm

3. A patient is complaining of right ankle pain that feels "dull and aching." The nurse documents this as what type of pain?
   a. cutaneous
   b. visceral
   c. somatic
   d. referred

4. The nurse is providing a class to nursing students about pain. How would the nurse define pain to the students?
   a. an unpleasant sensory and emotional experience associated with actual or potential tissue damage
   b. an objective experience that is defined by a pain rating scale
   c. an unpleasant sensation that can only be treated with medications

d. an unpleasant sensation for a short duration and in a specific location

5. The nurse is caring for an older adult patient who has been experiencing back pain. The nurse asks the patient to rate their pain and the patient states "I am not in pain. I am fine." The nurse knows the patient could have what factor impacting their perception of pain?
   a. medical diagnosis
   b. culture
   c. age
   d. cognitive function

6. The nurse is explaining the sympathetic response to pain to a student who has just started their orientation in the emergency department. What statement does the nurse make about the sympathetic response to pain?
   a. "It is an involuntary reaction to pain that keeps the body safe from danger."
   b. "It helps the body relax and rest after perceived pain."
   c. "It involves facial expressions and vocal expressions of pain."
   d. "It can include emotions such as fear and anxiety in connection to pain."

7. The nurse is caring for an infant patient and knows what physical response or sign is most likely going to be present in an infant in pain?
   a. increased blood pressure
   b. decreased heart rate
   c. crying
   d. withdrawal from touch

8. The nurse is caring for a patient experiencing chronic pain due to bladder cancer treatment. The nurse knows the patient is at risk for what type of behavioral response to pain?
   a. vocalization of pain
   b. social withdrawal
   c. algophobia
   d. catastrophizing

9. A patient dealing with chronic pain is seeking help with their anxiety. The patient states "My anxiety has gotten so much worse since this pain began." The nurse can make what recommendation to the patient to treat anxiety in chronic pain?
   a. cognitive behavioral therapy
   b. opioid analgesics
   c. avoiding potential painful situations
   d. treating the chronic pain

10. The nurse is teaching a class on pain management and is discussing the physiologic response to pain. What would the nurse state is a sign of the sympathetic response to pain?
   a. lowering blood pressure
   b. directing the pancreas to create insulin
   c. slowing digestion
   d. constricting pupils to limit light

11. The nurse is caring for a patient who is struggling to cope with their chronic pain from cancer treatment. The nurse knows what factor can make a positive difference in the patient's perception of pain?
   a. strong social support
   b. quitting their job
   c. avoidance
   d. catastrophizing

12. The nurse is caring for a preschool-aged patient who is admitted for abdominal pain. How would the nurse expect the patient to express their pain?
   a. catastrophizing
   b. accepting the pain is normal
   c. physical resistance and anger
   d. appear quiet and reserved

13. What is the definition of the placebo effect?
   a. when a patient thinks of the worst possible outcome for their pain
   b. when pain intervention proves to be effective because the patient believed it would be
   c. when the patient experiences extreme physical or mental suffering
   d. when the patient experiences pain because they expect it

14. The effect of trauma on the perception of pain is what type of factor?
   a. psychological
   b. psychosocial
   c. physiological
   d. cultural

15. The nurse is caring for an 80-year-old patient who has come into the emergency room to be monitored after a fall at home. The nurse knows the patient is at risk for what factor impacting their pain?
   a. age
   b. trauma
   c. distress
   d. expectation

16. A 40-year-old patient diagnosed with congestive heart failure is laughing and eating dinner with his visiting family. When asked to rate his pain on a numeric rating scale, the patient rates his pain as an 8 out of 10. What would the nurse conclude is the patient's pain rating?
   a. It is what the patient says it is.
   b. It is less severe due to the patient's behaviors.
   c. It is in anticipation of future pain.
   d. It is not accurate and the patient is exhibiting drug-seeking behaviors.

17. A patient comes to the emergency department with reports of decreased physical mobility, nausea, lack of appetite, and a "strange ache" in her back. What is the nurse's initial focus?
   a. starting IV fluids for dehydration
   b. performing a comprehensive pain assessment
   c. ordering a physical therapy evaluation
   d. administering antiemetic medications

18. The nurse notices a 6-year-old patient grimacing and moaning as he walks to the bathroom. The patient does not respond when the nurse asks the patient to rate his pain on the numeric rating scale. What is the nurse's response?
   a. Accept the patient's lack of response as an indication of no pain.
   b. Clarify the patient's pain rating using the FACES Pain Scale.
   c. Ask the patient's parents to rate his pain.
   d. Ask the patient to rate his pain using the same scale again.

19. For a patient who is cognitively impaired and cannot use a pain scale, what vital sign changes may indicate the patient is experiencing pain?
   a. decreased blood pressure
   b. decreased respiratory rate

c. increased heart rate
d. increased oxygen saturation

20. What should the nurse document when evaluating an intervention for pain?
a. current pain level and any symptoms
b. vital signs
c. head-to-toe assessment
d. skin assessment

21. What is biofeedback therapy used for?
a. controlling bodily functions such as heart rate to decrease pain
b. controlling pain using a programmed pump
c. decreasing pain through exercise and movement
d. decreasing pain through positive imagery

22. The nurse is caring for a patient who was recently prescribed opioids following surgery. What is the best nursing intervention to prevent the side effect of constipation?
a. increasing fluids and exercise
b. monitoring for respiratory depression
c. using stool softeners as needed
d. increasing the patient's diet to promote motility

23. The nurse is caring for a patient with pancreatitis that has been unable to take oral pain medications. What is the best action for the nurse?
a. administering antiemetic medication
b. using massage as a pain intervention
c. initiating biofeedback therapy
d. requesting a PCA order from the practitioner

24. The patient states they have been consuming acetaminophen frequently for the past several days to reduce their back pain. What side effect would the nurse be concerned about?
a. gastrointestinal bleeding
b. liver damage
c. respiratory depression
d. constipation

25. What safeguard should the nurse initiate to prevent medication errors when caring for a patient receiving a patient-controlled analgesic?
a. checking the pump settings with the oncoming nurse
b. decreasing the patient's dose to prevent side effects
c. monitoring the patient for respiratory depression
d. ensuring the pump alarms are at full volume

Check Your Understanding Questions

1. Describe the steps of how a pain stimulus travels to and is perceived by the brain.

Review the following examples of behavioral responses to pain and identify which type of behavioral response is being demonstrated.

2. An infant crying in their mother's arms after being fed and changed.
3. A patient sitting in the waiting room with their eyes closed and jaw clenched.
4. A patient complaining of knee pain but refusing to let the nurse examine the knee.

5. When conducting a thorough pain assessment, what questions should be asked in addition to using a numeric rating scale?

Reflection Questions

1. Using the gate control theory of pain, what nursing interventions would be effective for a patient with back pain?
2. What background information might you want to know about your patient who is a veteran complaining of chronic pain?
3. What information would the nurse need to determine pain in a patient who is unable to state their pain rating?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #4: Part 8.
   What changes to the patient's vital signs might indicate pain?
2. Refer to Unfolding Case Study #4: Part 9.
   What other nonpharmacological interventions could the nurse use to improve the patient's pain?

What Should the Nurse Do?

The nurse is caring for a patient who has arrived in the emergency room complaining of pain. The nurse brings the patient into an exam room to begin the assessment. The patient is frowning and is guarding their stomach. The patient states their pain began two hours ago and is "killing me."

1. What information would the nurse want to know to identify the type of pain the patient is experiencing?
2. What tools and questions could the nurse ask to get more information about the patient's pain?
3. Based on this information, what type of pain do you think the patient is experiencing?
4. The nurse is caring for a patient who is admitted for abdominal pain. The patient's 0800 vital signs were as follows: heart rate 70 bpm, respiratory rate 14 bpm, blood pressure 110/75, oxygen saturation 98 percent on room air. The nurse enters the room for the 0900 assessment and the patient is complaining of pain. The nurse notes the patient's vital signs are now: heart rate 118 bpm, respiratory rate 20 bpm, blood pressure 164/80, oxygen saturation 96 percent on room air. What should the nurse do next?
5. The nurse is caring for a patient who is admitted for ongoing abdominal pain. The patient has just been diagnosed with pancreatic cancer and has a history of high blood pressure, diabetes, and depression. The patient has been in the hospital for several days and has just started chemotherapy. The nurse is educating the patient on the possible side effects of the medication and notes the patient appears quiet and withdrawn. The nurse notes that there is no family at the bedside. The nurse asks the patient if there is anything wrong. The patient starts crying and states "I just don't know how I am going to survive all of this." What psychosocial factors might affect the patient's perception of pain?

The nurse is caring for an older adult patient with a history of arthritis who is complaining of chronic joint pain in their knees.

6. What pharmacological interventions could the nurse recommend for this patient?
7. What nonpharmacological interventions could the nurse recommend for this patient?

Competency-Based Assessments

1. Describe how the nurse would recognize the patient is demonstrating a physiologic pain response.
2. Develop a comprehensive pain assessment, including subjective assessment questions and objective assessment criteria, for an adult patient with a history of pancreatitis who is admitted for abdominal pain.
3. Describe the process of the dual nurse sign-off when verifying the patient-controlled analgesic (PCA) pump and how to monitor a patient on a PCA pump for side effects.
4. Describe the appropriate procedure for administering opioid analgesics to a patient.

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CHAPTER 31
Perioperative Nursing Care

FIGURE 31.1 Perioperative nursing involves providing safe, competent quality care throughout all stages and phases of the surgical experience to improve patient outcomes. (credit: “Making the cut: Aviano's surgical team” by Airman 1st Class Ryan Conroy/US Air Force, Public Domain)

CHAPTER OUTLINE

31.1 Surgical Concepts
31.2 Preoperative Phase
31.3 Intraoperative Phase
31.4 Postoperative Phase

INTRODUCTION Surgery is an exciting, transformative field that can save lives and improve the quality of a patient’s life. As a nurse providing perioperative care to people undergoing surgery, your most critical responsibility is to work with the other members of the perioperative team to provide a safe and positive surgical outcome for the patient. Another important role is to ensure that the perioperative process is as efficient as possible for all members of the healthcare team.

To provide the best possible care, you need to understand the art and science of surgery. This chapter provides an overview of surgical concepts as well as a discussion of the three stages of perioperative nursing care: preoperative, intraoperative, and postoperative. In this chapter, you learn the important role of the perioperative nurse in providing safe and effective care throughout all stages of the patient’s experience in collaboration with the surgical team.

It is also important to keep in mind that surgery can be a very emotional experience for patients. Often, you will encounter patients who are anxious or afraid. By providing care that is compassionate, competent, and culturally aware, you can help put your patients at ease while ensuring positive surgical outcomes.

31.1 Surgical Concepts

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify classifications of surgical procedures
- Recognize surgical advancements and trends in today's health care
- Describe the types of anesthesia used in surgical procedures

The **perioperative period**, which includes the time before, during, and after a surgical procedure, is a busy time for nurses. While each point in the patient's surgical journey has its own tasks, needs, and expectations, there are some general concepts related to nursing that the nurse must understand to effectively navigate through each period.

Surgical techniques and technology have advanced at a rapid pace over recent decades. Nurses certainly do not need to be experts on surgical techniques, but keeping a finger on the pulse of surgical innovation is key to staying current with the ever-evolving perioperative landscape. This chapter provides an overview of several important surgical concepts, including classifications of surgical procedures, types of anesthesia used in surgery, and some recent advancements and trends to consider.

Surgery can be broadly classified into four main types: emergent, urgent, expedited, and elective. Performed immediately to save a life, limb, or organ, an **emergent surgery** often requires resuscitation simultaneously with surgery. An **urgent surgery** is not necessarily immediate but is performed as soon as possible to treat a condition with acute onset or clinical deterioration of life or limb or for organ survival. When a patient is stable, an **expedited (scheduled) surgery** requires early intervention for a condition that is not an immediate threat to life or limb or to save an organ but can lead to significant complications and impair quality of life if left untreated. Scheduled in advance, an **elective surgery** is performed to repair injuries or enhance appearance and function.

The types of anesthesia that can be used during surgery also vary. The choice of anesthesia usually depends on the needs of the individual patient, the requirements of the procedure, and the preferences of the surgical team. The most common types of anesthesia include general, monitored anesthesia care (MAC)/moderate sedation, regional, and local. In **general anesthesia**, a patient receives a potent cocktail of intravenous (IV) and inhalation medications that induce a state of controlled, reversible unconsciousness, amnesia, and analgesia with or without reversible muscle paralysis so the patient does not feel any pain during the surgery. General anesthesia induces amnesia (temporary or permanent loss of memory). In **monitored anesthesia care (MAC)/moderate sedation**, a state of drowsiness is induced and anxiety is reduced while allowing the patient to respond to basic commands and breathe on their own during surgery. In **regional anesthesia**, only the area of the body where the surgery is being performed is numbed through spinal or epidural anesthesia; sedation may also be provided. In **local anesthesia**, only a small, specific area of the body where a procedure will be performed is numbed while allowing the patient to remain fully conscious.

Among the many advancements and trends that are currently taking place in the field of surgery, there are a few in particular that warrant discussion. One surgical advance is the increasing use and refinement of **minimally invasive surgery (MIS)**, a technique that uses one or more small incisions or natural body openings, which causes less pain and scarring. It typically has a shorter recovery time; however, MIS still carries some of the risks of traditional surgery.

Another emerging trend is **robotic-assisted surgery**, which is performed with a computer-controlled robot that allows surgeons to make more precise movements. This technique can improve accuracy and reduce the risk of complications but also has limitations and risks. Technological advances (e.g., telesurgery, artificial intelligence [AI]) are also reaching the operating room (OR) and have the potential to change surgical case workflows. With **telesurgery**, surgeons are able to remotely perform surgical procedures from a distance using robotic systems and telecommunication technology. Using **artificial intelligence (AI)** allows a robot or other computer system to perform tasks that typically require human intelligence.

Classification of Surgery

The world of surgery is a dynamic and multifaceted realm, encompassing a diverse range of procedures aimed at addressing a wide variety of medical conditions. Understanding the nuances of surgical classifications is paramount for healthcare professionals, ensuring precise and tailored patient care.

The **surgeon**, alongside a multidisciplinary team, considers factors such as patient health, urgency, and the complexity of the procedure when determining the most appropriate surgical approach. Moreover, patient education plays a crucial role in the decision-making process. Transparent communication regarding the nature of the surgery, potential risks, and expected outcomes empowers patients to actively participate in their healthcare journey.

Emergent Surgery

Imagine a scenario in the emergency department in which a patient presents with a life-threatening hemorrhage that requires immediate intervention or a pregnant person presents with fetal distress. These are situations in which the clock ticks relentlessly, where minutes or even seconds can mean the difference between life and death. Emergent surgery is performed without delay to address critical situations. Emergent surgeries require rapid decision-making and seamless collaboration between all members of the perioperative team. In these uncertain situations, nurses must be prepared to respond immediately to get the patient into the **operating room (OR)** as rapidly as possible. The focus is on immediate stabilization and survival, with little room for delay or meticulous planning. Examples of emergent surgeries include the following:

- Trauma surgery: This field encompasses a range of interventions to repair injuries sustained in accidents, violence, or other traumas, often requiring immediate action to prevent further complications and preserve vital functions.
- Emergency cesarean delivery: When vaginal delivery is deemed unsafe for the birthing parent or child because of complications (e.g., fetal distress, placental abruption), an emergency cesarean delivery becomes the lifesaving intervention for both birthing parent and child.

Balancing the nurse's role as a member of the care team with their responsibilities to the patient during this time-intensive process can be challenging. However, it is integral that the nurse participates in clear, effective, transparent communication with the team, the patient, and the family members. One responsibility of the nurse is to provide support to the patient's loved ones during this confusing and uncertain period, if at all possible. With compassion and clarity, the nurse can guide a patient's family through the whirlwind they are experiencing. If critical patient care precludes the nurse from providing this support, the nurse should call for administrative nursing support.

Urgent Surgery

An urgent surgery is when an acute condition has occurred, or there is clinical deterioration of life or limb, or organ survival is at risk. Typically, urgent surgery occurs within hours of the decision to operate, and if resuscitation was required, it has been performed and resolved. Examples of urgent surgery include wound debridement plus fixation of a fracture or an exploratory **laparotomy** (a surgical procedure where a large incision is made in the abdomen to expose the abdominal cavity) for bowel perforation or other injuries.

REAL RN STORIES

Every Second Counts

Nurse: Cheri, BSN
Clinical setting: Emergency department
Years in practice: 4
Facility location: New York City

A few weeks ago, I was working in the emergency department (ED) when a teenager was brought in after a motor vehicle accident (MVA). Trying to obtain the pertinent details about the MVA from the emergency medical services (EMS) team was difficult because the patient was screaming as they rolled him in on the stretcher. His leg was visibly deformed and obviously fractured. I also observed the patient appeared to be in excruciating pain, terrified, and possibly in shock. Trying to listen as EMS gave me the information I needed while simultaneously assessing the patient was challenging. In those hectic moments, I recalled my father's advice to "stay cool as a cucumber." In the ED, you see a lot of life-and-death situations, but there are also moments when you know that even if a patient survives a trauma, their life may never be the same again.

I didn't know if the surgical team would be able to save the teenager's leg, but I knew that my job was to get him

stable enough for them to try. I quickly assessed him and got IV fluids started, then made sure we communicated to the OR that an orthopedic surgical consult was urgently needed and that we were prepping the patient for transfer to the OR. I knew those minutes would feel agonizingly slow for the young man. I tried to reassure him, but I could see the fear in his eyes and wasn't sure he was processing what I was saying.

When we transferred him to the OR and provided the patient handover, I knew it was up to others to do their work at that point. I felt grateful for my team, but knew I had to let go of the urge to keep helping and accept not knowing what was going to happen next. As I headed back to the ER, I tried to keep positive thoughts about the patient in my mind. Later, I did find out that he survived, and his leg was saved, though his recovery was going to be very long and challenging. Although it was the skilled work of the surgeon and surgical team that ultimately led to that positive outcome, I know the part I played in caring for the patient also mattered.

Surgery to perform an appendectomy for appendicitis is an interesting case because traditionally it was considered an emergent procedure. An **appendectomy** involves surgically removing an appendix. The goal is to remove the appendix before it ruptures and spills infectious material into the abdominal cavity, potentially leading to life-threatening peritonitis. While complicated cases can certainly be emergent, there is some disagreement about whether all cases of appendicitis require immediate surgery. Some research suggests that delaying surgery for up to twenty-four hours may not adversely affect the outcome of either adult or pediatric patients with appendicitis (van Dijk et al., 2018). Considering appendicitis as urgent rather than emergent allows for more efficient identification of a surgeon, **anesthesia provider**, perioperative personnel, and available OR time (Salem, n.d.).

Expedited (Scheduled) Surgery

Not all surgeries are performed in the face of immediate danger. Some address chronic or progressive conditions that, while not life-threatening in the immediate term, can lead to significant complications and impair quality of life if left untreated. The goal of expedited surgery is to prevent future harm and improve long-term well-being. Examples of expedited surgeries include the following:

- Tumor removal: Excising cancerous or precancerous growths to prevent their spread and improve patient survival.
- Joint reconstruction: Repairing joints damaged by injury may offer temporary relief and stabilization until a more definitive treatment (like replacement) can be undertaken.
- Open-heart surgery: Repairing damaged heart valves or bypassing blocked coronary arteries to improve blood flow and address cardiovascular issues.

Expedited surgeries are often scheduled in advance, allowing for careful planning, preoperative optimization of the patient's health, and detailed discussions of potential risks and benefits. These procedures, while not as time sensitive as emergent or urgent cases, still play a vital role in preventing future health problems and improving long-term quality of life.

Elective Surgery

Beyond lifesaving interventions requiring emergent or urgent surgery and addressing pressing medical needs requiring expedited interventions, surgery also offers options for repairing injuries or enhancing appearance and function, allowing individuals to make informed choices about their well-being. An elective surgery is one chosen by a patient to improve their quality of life, address cosmetic concerns, or manage specific health conditions that are not immediately life threatening. Elective surgery is planned and scheduled in advance of routine admission to a hospital or surgery center. The timing of the elective surgery is determined to suit the patient and also the availability of perioperative personnel and an appropriate surgical facility. Examples of elective surgery include the following:

- Elective orthopedic surgery: Repairing sports injuries, correcting deformities, or relieving chronic pain can improve mobility, function, and quality of life.
- Joint replacement: Replacing damaged or diseased joints with artificial implants can restore mobility, alleviate pain, and improve function.
- Cosmetic surgery: Procedures (e.g., breast augmentation, liposuction, facial rejuvenation) can help individuals achieve desired aesthetic enhancements and boost self-confidence.
- Weight-loss surgery: Gastric bypass or other procedures can address obesity and its associated health risks,

leading to improved physical and mental well-being.

Elective surgeries are often personal decisions, requiring careful consideration of potential benefits and risks, long-term implications, and recovery time. These procedures, while not essential for survival, can significantly enhance a patient's physical and emotional well-being, contributing to a better quality of life.

Surgical Advancements and Trends

In recent years, the field of surgery has experienced a remarkable transformation propelled by a convergence of cutting-edge technologies and pioneering research. These advancements are revolutionizing traditional surgical practices, offering new avenues of treatment, and significantly enhancing the capabilities of healthcare professionals in the OR.

Minimally invasive techniques are at the forefront of innovation in surgery. The shift toward procedures that use smaller incisions, specialized instruments, and advanced imaging technologies has not only reduced the physical impact on patients but has also led to quicker recovery times and decreased postoperative discomfort.

Robotic Surgery

Minimally invasive surgery (a technique that uses fewer and smaller incisions than traditional open procedures) and robotic-assisted surgery (a procedure performed with robotic systems controlled by surgeons) offer many benefits for both patients and surgeons (Figure 31.2). The advantages of robotic-assisted surgery include the following:

- Enhanced dexterity: Imagine nimble fingers navigating tight spaces with unmatched precision. Robotic arms transcend human limitations, providing tremor-free movements and 7-degree freedom (the number of independent movements the robot can make), mimicking the natural dexterity of the human wrist. This translates to precise dissection and manipulation of delicate tissues. Surgeons can access and operate on hard-to-reach areas, minimizing collateral damage and preserving healthy structures.
- Intricate suturing and reconstruction: Robotic arms provide unmatched needle control, enabling meticulous closure and faster healing.
- Magnified vision: Robotic systems boast high-definition cameras with three-dimensional (3-D) capabilities, offering surgeons a panoramic view of the surgical field where even the tiniest nerve is brought into sharp focus. With the aid of robotics, surgeons can identify anatomical landmarks clearly, minimizing the risk of complications and enhancing surgical decision-making.

FIGURE 31.2 Robotic-assisted surgery has not replaced the human operating room team, but the innovation has given surgeons new techniques for many common procedures. (credit: "Keesler MDG Airmen perform first robotic surgery in AF" by Senior Airman Jenay Randolph/Air Education and Training Command, Public Domain)

Common robotic-assisted procedures include laparoscopic prostatectomies, hysterectomies, and mitral valve repairs. For instance, a robotic-assisted laparoscopic prostatectomy is a minimally invasive approach for prostate cancer removal. It offers shorter operative times, increased precision, reduced pain, less scarring, shorter hospital

stays, reduced blood loss, and faster recovery compared to traditional open surgery (Chuchulo & Ali, 2023).

That said, there are also very real challenges associated with robotic surgery, including the cost to implement and maintain the systems, the need for specialized training for all team members, a "learning curve" for surgeons to gain experience, and the potential for technical issues that could compromise the efficiency of a procedure or even put patient safety at risk (Chuchulo & Ali, 2023).

Telesurgery

Robot-assisted remote surgery, or telesurgery, uses advanced robotic technology that allows surgeons to operate on patients from a remote location in real time. This empowers surgeons to provide specialized care to underserved areas, overcome geographical barriers, and potentially reduce healthcare disparities. During telesurgery, the surgeon works in a control room equipped with high-definition 3-D screens and **haptic interfaces** that provide real-time feedback to the surgeon. Haptic interfaces are a type of human-computer interaction technology that is created by using force feedback, or the application of forces or vibrations to the user's skin, via movement of a limb or the head to simulate bodily tactile sensations and movements, which can mimic the feel of touching natural objects. The surgeon operates a "slave robot" (a robotic system that is directly controlled by the surgeon, often from a console) that mimics the surgeon's movements with precise dexterity.

Telesurgery is already making strides in various specialties. It is used for brain surgery, where remote neurosurgeons have performed tumor resections and stroke interventions, potentially improving access to specialized care for patients in remote locations. Other examples of common telesurgeries include laparoscopic cholecystectomies, joint replacements, and fracture repairs (Patel et al., 2024).

REAL RN STORIES

Like Science Fiction

Nurse: Liliana, BSN
Clinical setting: Surgery
Years in practice: 8
Facility location: A teaching hospital in Boston, Massachusetts

I'll admit it, I was very uncertain about the first telesurgery case I worked. Maybe even more than uncertain—nervous. Really nervous! I mean, it sounded like science fiction, and when you actually see it happening . . . well, it kind of looks like science fiction too. But it's a modern marvel, and not so much science fiction as a balance of science and art. It takes a really special kind of surgeon to do remote procedures. They need to be able to communicate like they're in Mission Control and also need to have a real knack for technical problem-solving—doing all this while not being in the room with the team or the patient.

And I think on that first case, it was that realization that really helped me see my role more clearly. It's always my job to be there for the patient, but in a telesurgery setup, it is even more important. It's not enough to be present, you have to have "presence." And that feels even more crucial when you're one of the only people who is physically in the OR with the patient.

During that first case, the patient was also nervous, and I needed to make sure that I didn't let my jitters affect the patient at all. The truth was, the surgeon on the case was one of the best in the country, and the fact that this patient could be treated by that surgeon despite the distance was incredible. I could never have fathomed that even ten years ago this was not possible. But your mind starts to run with all the what-ifs. What if the internet goes out? Or the connection intermittently goes in and out? Or the computer decides to do an update and restart right after the first incision? Now, rationally, I understood there were safeties in place for telesurgery just like there would be for an in-person surgery. But since I'd never seen it play out in anything other than a simulation lab, my mind was running wild. However, our on-site surgeon had done so many of the procedures at that point that he remained calm and composed. I think his demeanor helped me feel a little more assured—and it definitely helped me reassure the patient when they groggily asked me if it was time for "lift off."

The procedure itself was . . . well, actually almost routine. The voice of the specialist surgeon miles away came

through the speakers as though they were in the room with us. The image on the video wasn't quite high definition (HD); however, it was on the higher end of video calls I've been on, that's for sure.

And whether the voice was coming from across the room or across the country, it didn't really change my job. I was still monitoring the patient, communicating with the team, and thinking through my tasks with the same focus that I have every time I'm in the OR.

When it was over, I almost forgot it had been anything new! But when the patient woke up in recovery and made a groggy reference to *Star Trek*, I was happy to report to them that the mission had been a success.

In many ways, the role of perioperative nurses in telesurgery is no different from that in any other surgery. The **RN circulator** (a registered nurse whose primary responsibilities include managing the overall environment of the OR to ensure it remains safe, sterile, and efficient) must have **cognitive awareness** during any procedure; however, it is particularly essential when the surgeon is not physically in the room. Cognitive awareness may be defined as an increased level of attention that results in a "positive presence" by being consciously aware of all the components of an interaction. It is more than hearing what the surgeon is saying. Rather, the nurse learns to anticipate what the surgeon is thinking in order to determine what the surgeon needs in the moment and help the surgeon achieve the desired result even though the surgeon is not physically in the room.

Despite its immense potential, telesurgery presents risks and challenges that need to be addressed. For example, any delays in the transmission of data within communication networks, limited touch-based (haptic) feedback, and potential robot malfunctions can be catastrophic for the patient. Delays in data transmission could affect real-time control, and technical glitches or poor connectivity could adversely affect communication. Regulatory requirements may vary between regions, and there could be risks to security and patient privacy. Legal and ethical concerns also need to be addressed, which would include the liability related to remote surgeries. Additionally, implementing and maintaining telesurgery infrastructure requires costly investments, necessitating cost-effective solutions, and resource allocation strategies.

Artificial Intelligence

Robotic surgery and telesurgery have become far safer and more practical because of advances in AI. These computer systems are trained with algorithms designed to perform tasks that require human intelligence. The effect of AI is multifaceted, encompassing various aspects of surgical care. Examples include the following:

- Preoperative planning: There are AI algorithms that can analyze medical images and patient data to predict potential complications, optimize surgical planning, and even suggest the most suitable surgical approach. Certain AI algorithms can analyze patient data to predict individual responses to surgery, allowing surgeons to provide more personalized surgical techniques and optimize treatment plans. For instance, AI has been used with great success in detecting and identifying tumors. This is because AI can analyze medical images to detect cancer cells with higher accuracy than human eyes, potentially leading to earlier diagnoses and better treatment options.
- Intraoperative assistance: There are AI-powered systems that can provide real-time feedback during surgery, guiding surgeons by highlighting critical structures, identifying anomalies, and even predicting potential bleeding risks.
- Postoperative care: Some AI algorithms can analyze surgical data to monitor patient recovery, predict potential complications, and suggest personalized care plans.

Although the field is constantly evolving and much remains unknown or theoretical, we do have some clear indications of the overarching pros and cons of using AI in health care. From a clinical standpoint, the possible benefits of using AI in medical settings such as the OR include the following:

- Increased accuracy: Artificial intelligence can help surgeons make more accurate incisions and reduce the risk of complications.
- Improved efficiency: Artificial intelligence can help automate tasks, freeing up surgeons to focus on more complex aspects of the procedure.
- Reduced risk of human error: Artificial intelligence can help to prevent human errors, acting as a "safety check" against human factors like fatigue and inattention.
- Better patient outcomes: The combination of increased accuracy and precision, efficiency, and safety could

ultimately improve surgical outcomes for patients.

However, there are also some potential risks and challenges associated with the use of AI in surgery:

- Reliability: Artificial intelligence algorithms must be thoroughly validated for accuracy, and large language models must be fine-tuned with appropriate, accurate, relevant datasets.
- Lack of human intuition: Artificial intelligence cannot exercise the nuanced judgment of experienced surgeons in challenging situations that are not "textbook" or that require "in the heat of the moment" decisions.
- Data bias: Artificial intelligence algorithms can be biased based on the data on which they are trained (e.g., garbage in, garbage out).
- Security: It may be difficult to protect patient data or even proprietary data from cybersecurity threats introduced by AI.
- Integration: Integrating AI seamlessly into existing workflows presents unique challenges and high up-front costs as well as the costs for maintaining the systems to keep up with a quickly evolving industry.
- Regulation: It is necessary to establish clear regulations for AI broadly across all industries, particularly in health care.

Healthcare professionals must ensure that AI is ethically, responsibly, and effectively developed to balance the gains with the risks. Artificial intelligence must ensure that patient safety and privacy remain the priority, and patient outcomes are the ultimate guiding force behind implementing new technology.

Multi-Angle Rear-Viewing Endoscopic TooL

Developed by researchers at NASA's Jet Propulsion Laboratory, the **Multi-Angle Rear-Viewing Endoscopic tooL (MARVEL)** is a thin, flexible endoscope equipped with a unique single-lens system and complementary multi-band-pass filters. This innovative combination allows the endoscope system to achieve 3-D imaging without the bulky need for dual cameras. This offers several key advantages (Shearn et al., 2012):

- Enhanced visualization: Unlike traditional endoscopes that offer a limited field of view, MARVEL can bend and rotate its tip, providing surgeons with a panoramic view of hidden anatomical structures, especially in confined spaces like the brain or spine. This improved view reduces the risk of accidental damage to critical structures and improves surgical precision.
- Minimized tissue trauma: The small diameter and flexible nature of MARVEL minimize tissue disruption during surgery. This leads to faster recovery time, less pain, and potentially fewer complications for patients.
- Improved access: Compared to traditional endoscopes, MARVEL can navigate through complex anatomical pathways with greater ease, reaching previously inaccessible areas and expanding the possibilities for minimally invasive procedures.

Practitioners in several surgical specialties are exploring MARVEL's versatility and potential advantages. For example, neurosurgeons are using MARVEL for brain tumor resections, aneurysm clipping, and other delicate procedures, gaining improved access to deep and narrow brain regions. The tool's maneuverability is proving valuable for minimally invasive spinal surgeries, allowing surgeons to see and access spinal structures with minimal tissue disruption. In the area of otolaryngology, MARVEL's ability to reach hidden areas in the ear, nose, and throat makes it ideal for sinus surgery, tumor removal, and other endoscopic procedures.

Although MARVEL is a promising new technology with a number of potential benefits for surgeons and patients, there are also some potential risks and challenges that must be considered:

- High cost: The expense of acquiring and maintaining MARVEL can be financially prohibitive for many facilities.
- Steep learning curve: A substantial amount of training and expertise is required to use MARVEL skillfully, and it can be time-consuming to put in the time and effort to learn how to use it.
- Image quality constraints: While MARVEL provides better visualization, the actual clarity and detail of the images it produces may fall short when compared to the high-quality images generated by traditional endoscopic equipment.
- Seamless integration: Incorporating MARVEL into established surgical workflows could hinder widespread adoption.
- Patient acceptance: Some patients may be hesitant or even unwilling to consent to undergoing procedures with new technology like MARVEL.

- Regulatory oversight: Currently, there is a lack of comprehensive regulations for new tools like MARVEL. Frameworks need to be developed to ensure that the technology is safe and effective.

Even if they do not yet have the technology at every facility, nurses should be familiar with MARVEL and its potential benefits and have a clear understanding of how it differs from traditional endoscopes. Having a baseline understanding of MARVEL will help nurses provide optimal preoperative care, facilitate efficient intraoperative surgical workflow, and provide excellent postoperative care and patient education.

3-D Printing

From printing custom implants to creating lifelike anatomical models for use in surgical planning, **3-D printing** or a manufacturing process that creates 3-D objects from digital files, is becoming more common in surgical practice because it offers several key benefits (Sun, 2018). For example, anatomical models printed from patient data allow surgeons to visualize complex structures, practice surgical approaches, and identify potential challenges before entering the OR. This improved planning leads to reduced surgical time, enhanced surgical precision, and real advancements in personalized implants and surgical tools.

Certain applications for 3-D printing in surgery seem especially promising. These include the following:

- Orthopedic surgery: Custom-printed implants for joint replacements or bone fractures ensure a perfect fit, leading to faster healing, improved function, and reduced risk of complications.
- Craniofacial surgery: Reconstructive surgery can benefit from patient-specific implants that restore facial features and functionality, improving both physical appearance and self-esteem.
- Vascular surgery: In vascular surgery, 3-D-printed stents and other vascular implants can be customized to the specific needs of each patient's blood vessels, enhancing the success and safety of these procedures.

However, the integration of 3-D printing in surgical settings is not without its potential downsides and risks, such as the following:

- Financial and economic investment: The initial setup costs and materials can be expensive, and printing complex structures can be time-consuming.
- Safety and suitability: Ensuring the safety and biocompatibility of printed materials as well as making sure that printed models accurately represent an individual patient's anatomy are critical areas of challenge that must be addressed.
- Regulations and standards: There also need to be clear, evidence-based guidelines for the approval of 3-D-printed medical devices. This may prove difficult because advancements in materials for improved biocompatibility remain ongoing challenges in a field that is changing quickly.

Ongoing research and development are essential for advancing 3-D-printed materials that offer enhanced biocompatibility and open new possibilities for patient-specific treatment.

Types of Anesthesia

Modern surgery requires not only surgical precision but also sophisticated pain management with anesthesia. The variety of anesthesia types each offer a unique blend of unconsciousness, pain relief, and controlled depth of anesthesia. These include general anesthesia, monitored anesthesia care (MAC)/moderate sedation, regional anesthesia, and local anesthesia (Table 31.1). The choice of anesthesia is a delicate decision, tailored to the specific needs of the surgery, the patient's health, and the medical team. In addition to the type of surgery being performed, anesthesia providers (e.g., anesthesiologists, certified nurse anesthetists [CRNAs]) carefully evaluate each patient, considering factors such as age, medical history (including bleeding risk), and anxiety levels, to determine the most appropriate approach for a safe and comfortable surgical experience.

Factors to Consider	General Anesthesia	Monitored Anesthesia Care (MAC)/Moderate Sedation	Regional Anesthesia	Local Anesthesia
Pros	• Complete unconsciousness: The patient is completely unaware and feels no pain during the procedure, nor will they remember anything about it afterward. • Muscle relaxation: Inducing muscle relaxation is necessary for the surgery to be performed to prevent involuntary movements and muscle contractions that could interfere with the surgical procedure and/or cause injury. • Controlled: Anesthesia providers can precisely control the depth of anesthesia, allowing them to keep a patient unconscious until the procedure is over and bring the patient out of sedation.	• Less disruptive: It allows patients to remain conscious but relaxed. • Quick recovery: The recovery time is shorter compared to general anesthesia. • Versatile: It is suitable for various procedures and diagnostic tests.	• Selective numbing: It numbs a large region while allowing the patient to remain conscious. • Reduced systemic effects: It limits effects to a specific region, reducing overall systemic impact. • Postoperative pain control: It provides extended postoperative pain relief. • Types: ◦ Spinal anesthesia: a one-time injection of numbing medication. ◦ Epidural anesthesia: injected through a catheter placed in the epidural space. ◦ Nerve blocks target specific limbs or areas: offer precise pain control with no effect on consciousness unless sedation is added.	• Minimal systemic effects: It acts only on the specific area where it is administered. • Quick recovery: Patients can often resume normal activities shortly after the procedure. • Fewer side effects: It is typically associated with fewer systemic side effects.

TABLE 31.1 **Summary of Types of Anesthesia**

Factors to Consider	General Anesthesia	Monitored Anesthesia Care (MAC)/Moderate Sedation	Regional Anesthesia	Local Anesthesia
Cons	• Recovery time: The patient needs to fully regain consciousness after general anesthesia, which can prolong recovery time. • Potential side effects: Nausea, vomiting, and respiratory issues can be side effects of anesthesia medications and protocols. • Postoperative disorientation: Some patients may experience confusion or disorientation after waking up from general anesthesia, while others have different reactions, such as tearfulness or agitation.	• Limited depth: It may not provide enough depth of anesthesia for more complex or painful procedures that require a patient to be unconscious. • Potential respiratory depression: Some patients may experience reduced breathing rate with sedation. • Patient cooperation: It requires patient cooperation because the patient will remain conscious during the procedure.	• Potential complications: There are risks associated with nerve blocks or epidurals (e.g., hypotension, bleeding, infection, potential respiratory complications, paralysis). • Limited area of effectiveness: It may not cover all areas for certain complex surgeries. • Monitoring challenges: It requires careful monitoring of the patient's neurological status.	• Limited area: It is effective only in a specific localized area. • Discomfort during administration: It may cause temporary discomfort (e.g., burning, stinging) during injection. • Not suitable for all procedures: It is not suitable for more extensive or deeper surgeries.

TABLE 31.1 **Summary of Types of Anesthesia**

Factors to Consider	General Anesthesia	Monitored Anesthesia Care (MAC)/Moderate Sedation	Regional Anesthesia	Local Anesthesia
Duration and recovery	• These vary based on surgery type and medications used. • Typically, this stage lasts for the duration of surgery, and the patient will emerge or "wake up" gradually as the medications wear off.	• Effects are typically short lived, lasting only for the procedure and not lingering for long, although drowsiness may last for a while afterward.	• Spinal: This takes effect almost immediately and may last up to two hours. • Epidural: This takes ten to twenty minutes to provide relief but lasts as long as necessary by repeated injections through the catheter. • Nerve blocks: Pain relief can vary from a few hours, to a few days, to several weeks, months, or even years.	• Duration is generally limited to the time needed for the procedure. • Recovery is rapid, and effects wear off relatively quickly.

TABLE 31.1 Summary of Types of Anesthesia

Factors to Consider	General Anesthesia	Monitored Anesthesia Care (MAC)/Moderate Sedation	Regional Anesthesia	Local Anesthesia
Effectiveness and safety monitoring	• Basic anesthetic monitoring includes (1) oxygenation (e.g., pulse oximetry), (2) ventilation (e.g., capnography, partial pressure of carbon dioxide in exhaled air over time), (3) circulatory function (e.g., heart rate, blood pressure, electrocardiogram), and (4) temperature. • Depth of anesthesia is assessed by patient response to stimuli (e.g., nociception). • Continual observation of respiratory parameters and end-tidal CO_2 levels is necessary.	• Consciousness level and responsiveness to verbal stimuli (e.g., asking their name) are assessed. • Continuous respiratory rate and oxygen saturation monitoring is performed. • Vital signs (e.g., blood pressure, heart rate, pulse oximetry) are evaluated.	• Neurological function in the targeted region is assessed. • Vital signs (e.g., blood pressure, heart rate) are continuously monitored. • Patient comfort and pain levels are evaluated.	• Pain control and absence of sensation in localized area are assessed. • The patient's comfort level during the procedure is observed.

TABLE 31.1 Summary of Types of Anesthesia

Factors to Consider	General Anesthesia	Monitored Anesthesia Care (MAC)/Moderate Sedation	Regional Anesthesia	Local Anesthesia
Potential side effects and management	• Nausea and vomiting: Antiemetic medications and essential oil aromatherapy (Fearrington et al., 2019) may be used. • Temporary cognitive changes: These typically resolve within a few days with supportive care and reassurance. • Respiratory issues: Respiratory function and mechanical ventilation are closely monitored, if necessary. • Sore throat: Over-the-counter throat lozenges may be recommended.	• Respiratory depression: Breathing issues may occur, particularly in higher doses, requiring continuous monitoring of vital signs; supplemental oxygen may be provided if needed. • Drowsiness: Patients may feel excessively sleepy, requiring observation until the effects wear off. • Hypotension: Decreased blood pressure may require fluid administration or vasoactive medications.	• Hypotension or bradycardia: These are possible effects of spinal or epidural anesthesia due to sympathetic blockade requiring administration of fluids and medications to support blood pressure and heart rate. • Nerve damage or irritation: These are rare but potential complications, especially with nerve blocks, caused by needle/catheter placement; they require close monitoring for any signs of neurological issues.	• Localized pain or discomfort: Topical anesthetics may be applied. The patient may require reassurance during local administration and during the procedure. • Allergic reactions: Immediate treatment of allergic reactions is necessary; alternative anesthetics may have to be used. • Local anesthetic systemic toxicity: Prompt recognition and treatment is necessary; supportive care is administered.

TABLE 31.1 Summary of Types of Anesthesia

General Anesthesia

For major and complex procedures, general anesthesia takes center stage. This potent cocktail of IV and inhalation medications induces a state of controlled unconsciousness, **amnesia** (a temporary or permanent loss of memory), and **analgesia** (pain relief so the patient does not respond to painful stimuli, with or without reversible muscle paralysis). The process of **intubation** involves inserting an endotracheal tube into the mouth or nose and into the trachea to maintain an open airway, support breathing and ventilation, and provide oxygen delivery. This, in addition to monitoring vital signs, remains paramount throughout the procedure. General anesthesia offers complete pain relief, keeping the patient unarousable to painful stimuli during surgery, which provides optimal surgical conditions. However, general anesthesia has potential side effects (e.g., postoperative nausea and vomiting, temporary cognitive changes after surgery) (American Society of Anesthesiologists, n.d.).

Monitored Anesthesia Care/Moderate Sedation

For shorter and less-invasive procedures, a patient may not need to be completely unconscious. Monitored anesthesia care (MAC)/moderate sedation induces a state of drowsiness and reduces anxiety while allowing patients to respond to basic commands and breathe on their own. This approach offers a balance between pain relief and awareness, making it ideal for procedures like endoscopies and biopsies. However, some patients may still experience some discomfort or remember fragments of the procedure (American Society of Anesthesiologists, n.d.).

LIFE-STAGE CONTEXT

Age-Related Anesthesia Considerations

Some considerations for the use of anesthesia are based on the patient's life stage, from newborn infants to the oldest patients who need surgery.

Infants and Young Children

- Underdeveloped organ systems: Reduced metabolism and medication clearance in infants can lead to prolonged medication effects and unexpected responses to anesthesia. Weight-based dosing of anesthetic medications in children can help ensure that the safest, most effective therapeutic doses of anesthetic agents and pain medication are given while minimizing risks and medication side effects.
- Thermoregulation challenges: Infants are more susceptible to hypothermia during surgery, requiring careful temperature monitoring and warming techniques to prevent complications.
- Potential for airway obstruction: Careful attention to airway management is crucial for infants and babies who have smaller and more pliable airways.

Pregnancy

- Fetal safety: The type and timing of anesthesia could affect the developing fetus. Careful medication selection and monitoring are essential to minimize risks to both the pregnant patient and the unborn baby.
- Physiological changes: Pregnancy alters the pregnant patient's cardiovascular, respiratory, and gastrointestinal systems, which requires special attention throughout anesthesia management.
- Pain management: Balancing pain relief for the pregnant patient as well as the safety of the unborn baby is a priority. Regional anesthesia is often preferred, when possible, to reduce fetal risk.

Older Adults (65 years old and older)

- Cardiovascular changes: Decreased cardiac reserve makes older adults more vulnerable to hypotension and arrhythmias. Careful titration of anesthetic agents, close monitoring, and consistent fluid management are essential.
- Respiratory decline: Reduced lung function and oxygenation capacity in old age can contribute to a higher risk of hypoxia and postoperative respiratory complications. Preoperative optimization of lung function and careful oxygen management are important for older adults who will be undergoing surgery.
- Neurological considerations: Older patients may have preexisting cognitive changes or conditions and, therefore, can be more sensitive to the effects of anesthetic medications. Lower doses with titration to effect and careful monitoring can mitigate the risk of emergence delirium (also known as postoperative delirium) and cognitive dysfunction in older surgical patients (Ramroop et al., 2019).
- Altered drug metabolism: Decreased kidney and liver function are common in older adult populations and can prolong the effects of medications and increase the risk of toxicity. Dosage adjustments may be needed to help prevent these risks.
- Polypharmacy: Older adults are more likely to be on multiple medications to manage chronic diseases, many of which may interact with anesthetic medications. Preoperative medication reconciliation is essential, particularly if a medication may need to be held for a specified time period before a procedure to help avoid interactions or altered effects.

Regional Anesthesia

When the surgical procedure is on a specific region of the body, regional anesthesia may be the best anesthetic option. This approach blocks nerve signals in targeted areas, leaving patients awake and aware during the procedure. Spinal and epidural anesthesia provide partial or complete analgesia by numbing the lower body. Nerve blocks target specific limbs or areas, offering precise pain control with no effect on consciousness unless sedation is added. Regional anesthesia often leads to faster recovery times and fewer side effects compared to general anesthesia but may not be suitable for all procedures or patients with certain medical conditions. Common uses for regional anesthesia include orthopedic surgeries, procedures on extremities, labor and delivery, and some abdominal surgeries (American Society of Anesthesiologists, n.d.).

PATIENT CONVERSATIONS

Teaching the Patient about Regional Anesthesia

Scenario: The nurse midwife is preparing an obstetrical patient in labor who will be receiving regional anesthesia for pain relief.

Nurse Midwife: Hi, Kayla. How are you feeling?

Patient: Hurts . . . a lot.

Nurse Midwife: We are about to start your epidural to help with the pain. I'd like to talk to you about what to expect, is that okay?

Patient: Yes . . . please.

Nurse Midwife: An epidural is a kind of regional anesthesia. It's not like the general anesthesia that puts you to sleep before a surgery; it just numbs part of your body to help with pain relief.

Patient: So, it won't . . . knock me out?

Nurse Midwife: Nope, you'll be completely awake. When the anesthesia provider comes in, we will have you sit up or lie on your side and they will use a needle to put a tube into your lower back at the bottom of your spine. It might pinch a little, but they usually put a little numbing medicine in your skin first to help it hurt less.

Patient: Does the needle stay in my back?

Nurse Midwife: No, the needle is just used to poke through your skin. Then they put in a flexible tube called a catheter. They remove the needle but leave the catheter in place. The catheter allows the anesthesia provider to put in numbing medicine. It will probably take about twenty minutes for the medicine to take effect.

Patient: Will I be totally numb?

Nurse Midwife: No, the medicine will only numb you from about the waist down. While you will be numb, it is normal to still feel some pressure as the baby moves down the birth canal. You can still move your legs a bit, but you won't feel them like you normally would.

Patient: Will I still be able to push?

Nurse Midwife: Yes, the muscles you use to push will still work, even with the epidural.

Patient: Is it safe?

Nurse Midwife: Epidurals are safe; however, all treatments have risks, so I'm glad you asked. We will watch you and your baby closely to make sure that things like heart rate and blood pressure are what we want them to be. Some people take longer to get feeling back than others. It is very important that you remain in your bed. Your legs will be numb so you would fall down. Please ring your bell, it's right here, if you need anything.

Another possible risk is that sometime people get headaches from having the epidural placed. There is also a risk of more serious complications, like blood clots and nerve damage, but these are rare, and we will be monitoring you closely for any signs of a problem. We will help you manage any of these side effects if they happen, and we'll make

sure that adjustments are made if necessary.

Patient: What if I end up needing a C-section.

Nurse Midwife: Well, if you need a C-section, you'll be one step closer to being ready, since the epidural will already be done. If that happens, we'll talk more about what next steps will take place.

Patient: When does it come out? The tube, I mean.

Nurse Midwife: After delivery, the catheter can be removed. You'll probably start to notice feeling coming back within a couple of hours, but like I said, it might take a little longer or shorter time. You might have some back pain, and it might feel a little weird to try to pee at first, but this will get better as the numbness goes away.

Patient: Thanks . . . so, can we get started?

Nurse Midwife: Yes, the anesthesia provider should be here any minute now.

Local Anesthesia

Local anesthesia is a technique that temporarily numbs only a small, specific area of the body. It is administered either topically or via injection near the site of the procedure. This form of anesthesia is commonly used for minor surgical procedures, dental work, skin biopsies, or wound repairs. Although it is not as complex as other forms of anesthesia, there are still potential downsides and risks to consider along with the benefits (American Society of Anesthesiologists, n.d.). Side effects may occur if too much local anesthesia is administered or if the medication is inadvertently injected into a vein instead of tissue. This reaction is called local anesthetic systemic toxicity. The patient may experience ringing in the ears, headache, dizziness, confusion, twitching, heart rhythm and blood pressure disturbances, metallic taste in your mouth, or rarely have a seizure. It is also possible to have an allergic reaction to an anesthetic, which is also rare.

31.2 Preoperative Phase

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the tasks involved in the preoperative stage of patient care
- Explain the role of the perioperative nurse

The **preoperative stage** is a critical component of the surgical road map, and it includes all the activities and preparations from the time surgery is decided on until the patient is transferred to the OR. This section covers the tasks involved in the preoperative stage of patient care that include, but are not limited to, conducting preoperative assessments, verifying surgical consents, performing risk assessments for anesthesia, educating the patient about the procedure, and preparing the patient physically and emotionally for surgery. This stage is essentially a touchstone for ensuring patient safety, optimizing surgical outcomes, and minimizing the risk of complications.

The preoperative nurse functions as the patient's advocate and primary point of contact throughout the preoperative period, making sure that all preparations are completed accurately and that the patient is educated and emotionally supported in the time leading up to their surgery. Each task is necessary for identifying potential issues that could affect the surgery or recovery and ultimately ensuring that the patient is in the best possible condition to undergo the procedure. By understanding the tasks and responsibilities involved in preoperative care, nurses can effectively prepare patients for surgery, addressing both their physical and psychological needs.

Preoperative Care

The journey through surgery does not begin with the first incision; it starts long before, in the crucial stage of preoperative care. To ensure the safest possible surgical experience, preoperative care begins with a comprehensive assessment of the patient's health. The preoperative nurse reviews the patient's medical history, noting any preexisting conditions, allergies, and current medications. The nurse then performs a thorough physical examination or reviews the medical preoperative history and physical (H&P), which helps identify any potential issues that could affect the surgical procedure or influence recovery (American College of Surgeons, n.d.).

Preoperative care also goes beyond just physical preparation. Addressing psychological well-being and identifying

the patient's coping mechanisms and available emotional support can significantly contribute to a positive surgical experience. By meticulously laying the groundwork, preoperative care sets the stage for a smoother surgery and a faster, more successful recovery.

Based on the data collected, the nurse formulates a baseline understanding of the patient's status and determines what appropriate preoperative testing is required. The nurse confirms that all required preoperative documents are present. The nurse also ensures the patient has undergone preoperative bowel preparation if required. Finally, the preoperative nurse performs surgical skin preparation and provides prehabilitation and postoperative instructions.

Completing Preadmission and Preoperative Testing

Before being admitted for surgery, patients may need certain preadmission and preoperative tests. These assessments unveil vital information about the patient's health, which may influence outcomes and can present challenges to a successful procedure. The **preadmission testing** (or preoperative testing) encompasses a range of examinations, laboratory or diagnostic tests, and procedures (e.g., electrocardiogram [ECG], bloodwork) to evaluate a patient's health status. This testing is completed before a procedure or surgery.

The benefits of preadmission testing are multifaceted. Tests may reveal underlying medical conditions that could pose risks during surgery, allowing for adjustments to the surgical plan or even postponement if necessary. Information gleaned from preoperative tests helps the surgeon tailor the approach to the patient's specific anatomy and health, leading to more precise and effective procedures. Testing that identifies potential issues beforehand can ultimately enhance patient safety (American College of Surgeons, n.d.). Some common tests include the following:

- Blood work:
  - Complete blood count can identify a low red blood cell count (e.g., anemia) and high white blood cell count (e.g., infection).
  - Serum electrolytes (e.g., sodium, potassium) help regulate heart rhythms and other body functions. Identifying serum electrolyte abnormalities in advance of surgery allows time to rectify the problem.
  - Serum glucose levels provide insights into the body's ability to heal, among other things.
  - Coagulation studies (e.g., prothrombin time partial thromboplastin time) help prevent bleeding complications by measuring the activity of the clotting cascade.
- Imaging tests:
  - Chest x-rays help diagnose causes of shortness of breath, chest pain, cough, certain fevers, and abnormal heart and lung appearance.
  - Computed tomography (CT) and magnetic resonance imaging (MRI) scans offer detailed images of organs, bones, and tissues, assisting the surgeon in surgical planning and identifying potential anatomical variations.
- Electrocardiogram and echocardiogram (Echo): Assessing heart function is crucial for surgeries involving anesthesia with the goal of minimizing the risk of cardiac complications.
  - An ECG may identify abnormal rhythms (e.g., arrhythmias, dysrhythmias), heart muscle damage, and causes of chest pain, fluttering heartbeats (palpitations), and heart murmurs.
  - An Echo uses high-frequency sound waves to produce pictures of the heart. Among other things, an Echo can help diagnose heart attack, heart failure, valvular problems, and blood clots.
- Urinalysis is an important aspect of preadmission testing.
  - A urinalysis can help diagnose or rule out certain urological conditions (e.g., kidney and bladder infections). Urinalysis can also determine a patient's hydration status and identify illegal drugs in the body.
  - Urine pregnancy tests are required for women of childbearing years who have not undergone a hysterectomy. This helps ensure patient safety and that of an unborn baby.

Confirming the Presence of Preoperative Documents

Before surgery, patients must complete a set of preoperative documents. These forms may seem daunting to patients; however, they play a vital role in ensuring a safe and successful procedure. Preoperative documents typically cover various aspects of the patient's health and surgical plan. Some common forms include the following:

- Medical H&P: This form details past surgeries, medications, allergies, and any existing medical conditions. Family and social histories are also obtained, which helps in identifying potential risks and ensuring the

patient is optimized for surgery. The professional completing the H&P also performs a physical examination.

- Informed consents: These are crucial legal documents that provide a detailed overview of the surgery, including its risks, benefits, and alternatives.
  - An informed consent (see 16.3 Legal Dimensions of Care) is a crucial legal process that goes beyond merely signing a form. It requires a thorough discussion between the healthcare provider and the patient (or their legal guardian) to ensure a complete understanding of the procedure and its risks, benefits, and alternatives. This crucial communication allows the patient to make an informed decision about their care. Although nurses may witness the signing of consent forms, the legal responsibility of obtaining informed consent and confirming the patient's understanding lies with the professional who will perform the procedure (i.e., surgeon, anesthesia provider).
- Anesthesia assessment: This form gathers information about the patient's tolerance for anesthesia and potential risks. The anesthesia provider completes this assessment.
- Advance directives: These documents specify the patient's wishes regarding life-sustaining measures in case of complications.

Taking the time to carefully review and complete preoperative documents is essential for a smooth and successful surgical journey. By providing accurate information and fostering open communication, these forms pave the way for safer procedures, faster recoveries, and ultimately, improved patient outcomes.

Preparing the Bowel

The medical procedure of **bowel preparation (bowel prep)** is designed to clean the colon and rectum before certain medical or surgical procedures (e.g., colonoscopy, colorectal surgery). The goal of bowel prep is to remove stool and debris from the digestive tract, allowing for better visualization of the intestinal lining and reducing the risk of complications (e.g., infection) during the procedure. Bowel preparation typically involves a two-pronged approach:

- Dietary modifications: The day(s) leading up to surgery often require a low-fiber diet or clear liquid diet to minimize stool production. Clear liquids may include water, broth, clear juices, and gelatin. This reduces the volume of material that needs to be removed and lowers the risk of blockages during surgery.
- Medications: Laxatives or enemas may be prescribed to stimulate bowel movements and remove remaining stool.
  - Laxatives are medications that promote bowel movements and help clear the colon. They may be in the form of pills, powders, or liquids. Common laxatives include polyethylene glycol (PEG), magnesium citrate, sodium phosphate, or other prescribed medications.
  - Enemas involve introducing a liquid solution into the rectum to stimulate bowel movements and aid in cleaning the lower part of the colon. Types of enemas may include saline enemas or commercially available bowel prep solutions.

The specific timing of when to start the bowel prep and when to complete it depends on the type of preparation prescribed and the timing of the scheduled procedure. Healthcare providers give the patient clear instructions regarding when to start and complete each component of the bowel prep. It is crucial for patients to follow the provided instructions diligently to ensure effective bowel preparation. While bowel prep can be uncomfortable and may cause temporary diarrhea, its benefits in terms of improved visualization and safety during medical procedures outweigh the temporary inconvenience. Patients should communicate any concerns or difficulties with their healthcare providers, who can provide guidance and potentially adjust the bowel prep regimen based on individual needs.

Preparing the Skin

Preparing for surgery also involves prepping the skin on and around the incision site to minimize the risk of infection and ensure optimal healing. This meticulous process involves both preoperative and intraoperative measures.

Patients may be instructed on things they need to do at home before arriving at the surgical facility for surgery. For example, patients may be given specific instructions for cleansing the skin or showering before surgery and may be advised to avoid lotions and creams. The preoperative instructions often include using a special antiseptic solution to wash the skin. Common antiseptic solutions used for this purpose include alcohol-based chlorhexidine gluconate or iodine-based solutions. These antiseptics help reduce the number of microorganisms on the skin, decreasing the risk of a **surgical site infection (SSI)**, an infection that occurs at or near surgical incisions within thirty days of the

procedure or within one year in the case of organ or space infections with an implant. When choosing a product, the provider will take the requirements and location of the planned procedure as well as any patient allergies into account. Patients should be provided with clear instructions on how to use the product and know who to contact if they have questions about performing the preoperative routine.

Patients are instructed not to remove hair at the surgical site. Shaving the incision site and the area around it within twenty-four hours before surgery is no longer recommended. Instead, healthcare providers may trim or clip hair if necessary after the patient arrives at the facility, minimizing skin irritation and potential infection risk.

Just before surgery, a healthcare professional will meticulously clean on and around the incision area with specialized antiseptic solutions like chlorhexidine gluconate. This further reduces bacterial burden and prepares the skin for the sterile environment of the OR. Sterile drapes are then used to create a barrier between the surgical site and the surrounding nonsterile areas, minimizing the risk of contamination during the procedure.

Providing Preoperative Instructions

Preoperative instructions have several important roles:

- Enabling active patient participation: Patients become empowered partners in their care and are directly contributing to positive surgical outcomes by following the instructions.
- Empowering through knowledge: Patients are provided with the information they need to make informed decisions about their care and feel confident that they will be able to follow the instructions before and after surgery.
- Minimizing risk: Closely adhering to preoperative guidelines, such as fasting before surgery and stopping certain medications, reduces the risk of complications during and after surgery.
- Alleviating anxiety: Clear explanations about what to expect before, during, and after surgery help ease patients' anxieties and give them more of a sense of control over the situation.
- Promoting optimal outcomes and patient health: Preoperative instructions may include guidance on lifestyle changes, medication adjustments, and hygiene practices that will help position patients to be in the best possible shape for their surgery and recovery.

Preoperative instructions cover many topics. These include fasting guidelines, medication management, hygiene practices, clothing and personal items, transportation arrangements, and arrival time:

- Fasting guidelines: Clear instructions on when to stop eating and drinking before surgery help minimize the risk of aspiration during anesthesia and decrease the severity of pulmonary complications if aspiration occurs. Historically, patients were instructed to fast after midnight the night before surgery. However, many patients experience problems (e.g., dehydration) with extended fasting, especially if surgery is scheduled for the afternoon (Chon et al., 2017). These guidelines have been updated (Apfelbaum et al., 2017). A common instruction for the timing of preoperative fasting includes the following:
  - Two hours: Simple or complex carbohydrate–containing clear liquids are encouraged up to two hours before surgeries requiring general anesthesia, regional anesthesia, or procedural sedation.
  - Four hours: Infants may consume breast milk up to four hours before surgery.
  - Six hours:
    - A light meal (e.g., toast and clear liquids) may be eaten six hours before surgery.
    - Nonhuman milk and formula should be stopped six hours before surgery.
  - Eight hours: Fried or fatty foods and milk may require additional fasting time.
- Medication management: The nurse performing the preoperative phone call should use facility guidelines and physician-specific orders to determine whether to continue or discontinue certain prescription and over-the-counter medications in the days leading up to surgery. The goal is to help lower risks associated with bleeding or interactions with anesthetic medications. While each facility and surgeon may have specific protocols, here are a few common examples:
  - Anticoagulants (blood thinners) (e.g., aspirin, warfarin, clopidogrel, nonsteroidal anti-inflammatory medications such as ibuprofen) and all vitamins, supplements (fish oil), and herbals should be discontinued for a specified period of time before surgery (e.g., five to ten days before surgery).
  - Antihypertensive medications: Certain antihypertensive medications as listed should be held before surgery. If the patient takes the medication at night, instruct the patient to hold the evening dose the

night before surgery. Also, have the patient hold the medication the day of surgery (Wagner et al., 2019). The following should be held before surgery:
    - angiotensin converting enzyme inhibitors (ACE-I): benazepril (Lotensin), lisinopril (Prinivil), enalapril (Vasotec)
    - angiotensin II receptor blockers: losartan (Cozaar), valsartan (Diovan), irbesartan (Avapro)
  - Patients with diabetes:
    - Insulin: Nurses should refer to facility protocol for perioperative management of patients with diabetes. A finger-stick blood sugar should be performed on arrival at the facility on the day of surgery if the patient has diabetes. The nurse should notify the anesthesia provider if surgery start time is delayed for guidance on blood sugar monitoring and IV placement (Khan et al., 2024).
    - Oral antidiabetics: Patients should hold on the day of surgery.
  - Weight-loss/central nervous system (CNS) (e.g., phentermine) stimulant medications: Patients should stop taking seven days before surgery (Adams, 2023).
  - Anti–attention deficit hyperactivity disorder agents: Agents such as dextroamphetamine (e.g., Adderall) should not be taken the day of surgery (Engelman & Cramer, 2023).
- Hygiene practices: The nurse should instruct the patient on preoperative bathing and skin preparation with antimicrobial soap to help reduce the microbial load on the skin, which can help prevent SSIs.
- Clothing and personal items: The nurse should instruct the patient on what clothing to wear on the day of surgery and to leave valuables at home to prevent the loss or contamination of these items. The patient should be told not to wear cosmetics or use lotions before surgery. The nurse should instruct the patient to remove all jewelry and accessories. This includes removing rings and all body piercings to prevent patient injury from burns, pressure-related tissue injury, and SSIs. Nurses should understand that simply placing tape over the jewelry does not eliminate the risks of wearing them in surgery.
  - When electrosurgery is used during a procedure, body jewelry may conduct the electrical current and cause electrical burns to the surrounding tissue.
  - Metal body jewelry may interfere with ultrasound, CT, and MRI and cause injury to the patient during the procedure.
  - Nursing personnel should learn techniques for safe jewelry removal and to maintain patent piercing tracts. Facilities should ensure the availability of tools needed to safely remove body-piercing jewelry. Nose, tongue, or lip jewelry make airway management and visualization of the airway during intubation difficult and dangerous to the patient. Genital piercing can pose problems during urinary catheter insertion and may result in urethral tears that could require cystostomy or surgical closure.
- Transportation arrangements: To give patients time to plan, the nurse making the preoperative call should gather information about transportation to and from the surgical facility, including any restrictions on driving after certain types of anesthesia. If the patient is having same-day surgery and is undergoing general or regional anesthesia or conscious sedation, a driver is required to take the patient home. Patients may ask if they can take a rideshare (e.g., Lyft, Uber, taxi). However, the rideshare driver cannot be held responsible for transporting the patient into and out of the vehicle. Therefore, rideshares are prohibited unless an adult accompanies the patient and assumes responsibility for the patient.
- Arrival time: Specific instructions on when to arrive at the surgical facility or hospital for preoperative assessments and preparations are needed to guide patients through the schedule for the day. Adequate time ensures steps are completed without rushing.
- Documentation: The nurse should remind the patient to bring essential documents, including photo identification, insurance information, and any preoperative paperwork and consent forms. This helps make the process go more smoothly on the day of the surgery and decreases the likelihood that something important will be forgotten or incomplete.
- Contact information: Emergency contact information should be obtained from the patient as well as instructions on whom to contact if the patient has questions or concerns before the surgery.

Providing Postoperative Instructions

Providing postoperative instructions is crucial to help prepare the patient in advance for self-care on discharge. Instructions may include the following:

- General information about what to expect after surgery (e.g., postoperative pain management, activity

restrictions and recommendations, potential side effects) helps the patient feel more prepared.
- Instructions for wound care are also important, and patients need to be aware of their responsibility for taking care of their wound after the procedure. This may involve changing bandages regularly or leaving them undisturbed until the follow-up appointment. Patients should also be instructed on how to recognize a potential wound infection as well as what signs and symptoms would warrant calling their provider.
- Additional instructions may include general advice for maintaining good personal hygiene (e.g., hand hygiene before and after touching the wound), adhering to dietary and nutritional instructions, and staying adequately hydrated and well rested. Instructions should be provided for the safe application of ice or heat after surgery if ordered.
- The nurse should provide personalized guidelines to help the patient manage pain and ensure that the patient is knowledgeable about the prescribed pain medications ordered for home use.

Formats Used for Preoperative Instructions

Using a combination of communication methods helps address the needs of diverse patient learning styles and preferences.

- Written instructions: Printed or electronic documents are often given to patients from the surgeon's office during preoperative visits or via online patient portals.
  - Whenever possible, the nurse should ensure that instructions are written at no greater than a sixth-grade reading level. Stress and fear greatly inhibit learning. Even people with advanced education may have difficulty understanding and remembering surgical information.
  - Visual aids: Infographics, videos, or visual aids can enhance patient understanding and are useful for offering clarification or answering questions.
  - Foreign language: Facilities should be prepared to provide written instructions in the patient's primary language.
- Verbal communication: Healthcare providers, including nurses and surgeons, will verbally reinforce instructions during preoperative assessments or consultations. Patients are encouraged to ask questions, clarifying any concerns and ensuring full comprehension.
  - Facilities should be prepared to provide interpreters in the patient's primary language.
  - As an alternative to in-person translators, nurses should be aware of and prepared to use one of the many online, real-time interpretation services that are now available.

The Role of the Perioperative Nurse

Nurses are the patient's primary advocate serving as a trusted resource and ensuring patient safety throughout the surgical journey. They explain procedures, address concerns, provide emotional support, ease anxieties, and foster a sense of security. The perioperative nurse may work in any of the three areas of perioperative services:

- Preoperative preparation: A few of the steps of care provided by the preoperative nurse are assessing patients, managing anxieties, and ensuring informed consent has been completed by the surgeon.
- Intraoperative care: The **scrub person** (nurse, surgical technologist) sets up the sterile field and assists the surgeon by passing instruments. The RN circulator manages the overall environment to ensure safety, prepares the patient, and provides necessary supplies. A **perioperative first assistant** (e.g., **registered nurse first assistant [RNFA]**, certified surgical first assistant [CSFA], surgical physician's assistant [PA], perioperative nurse practitioner [NP]) with advanced education and training helps the surgeon with tasks such as holding retractors and suturing.
- Postoperative recovery: Perioperative nurses assess and care for patients in the postanesthesia care unit (PACU) (formerly referred to as the recovery room), manage pain, monitor vital signs, anticipate and treat postoperative complications (e.g., airway management, cardiovascular interventions), and provide essential early postoperative care.

The perioperative nurse's role is not merely technical; it is deeply human. The nurse navigates the emotional tides of patients and families, offering reassurance and compassion during a vulnerable time. Their expertise, adaptability, and unwavering dedication are the bedrock of safe and successful surgery.

Performing the Preoperative Assessment

The nurse's role in **preoperative assessment** includes conducting a comprehensive physical and psychosocial

evaluation. The nurse is responsible for reviewing past surgeries, medications, allergies, and any preexisting conditions and identifying potential risks. The nurse then tailors a patient-specific nursing care plan.

The nurse assesses the patient's overall health, pain levels, and potential anatomical variations that might affect the procedure. It is also the responsibility of all surgical team members at every step of the process to confirm the patient's identity and the type and site of the surgery to be performed to ensure that the correct location is established before the patient goes to the OR. The nurse should also recognize the emotional weight of surgery. Addressing anxieties, providing emotional support, and ensuring informed consent are crucial aspects of a holistic assessment.

CULTURAL CONTEXT

Cultural Considerations During the Preoperative Assessment

The nurse should be aware of the unique individual needs of each patient and pay particularly close attention to how a patient's culture may influence their beliefs and practices about surgery and recovery. Providing culturally aware care during the preoperative stage helps build trust, establishes therapeutic rapport, improves understanding, and contributes to better patient outcomes. Here are a few ways that nurses can incorporate a patient's cultural considerations into their assessment.

Language and communication:

- Identify the patient's primary/preferred language: Ask, "What language do you prefer to speak?" Never make assumptions about a patient's language based on appearance or name.
- Provide interpreters: When possible, use certified medical interpreters for patients with limited proficiency in the primary language of the healthcare setting. Translating medical and legal language requires specific skills. Therefore, do not have patient family members translate because this can lead to misunderstandings. If a medical interpreter is not available, assistive technology that helps translate in these situations may be useful.
- Translate materials: Give instructions and documents in the patient's preferred language, if possible. Check with your facility to see if they have a trusted translation service for medical documents or if documents can be printed in multiple languages.

Health beliefs and practices:

- Be open to learning from patients: Ask, "Are there any cultural or religious beliefs I should be aware of regarding your health or upcoming surgery?" For example, a patient might request a moment of prayer or a ritual cleansing before surgery.
- Respect traditions: Some patients may use traditional remedies or have specific beliefs about illness and healing. For example, a patient from a culture that uses traditional medicine might be apprehensive about conventional surgical procedures or anesthesia. Acknowledge these beliefs with respect, and find ways to incorporate them into the care plan.

Decision-making and family:

- Identify decision-makers: In some cultures, decisions are made collectively with their family or specific people within the family. Ask the patient who should be involved in discussions.
- Support family involvement: Facilitate family participation in the preoperative process, if desired by the patient. If not, make sure you have a clear understanding of who should not be involved in the patient's care.

Religious practices:

- Spiritual needs: Ask about any religious practices or rituals that the patient would like to be accommodated before, during, or after surgery. For example, some patients may refuse blood transfusions because of their religious beliefs, and this must be considered in surgical planning. Nurses should be prepared to discuss alternatives to blood transfusion that may be available, for instance, implementing options for preoperative optimization of hemoglobin levels, employing cell salvage (a procedure whereby blood lost during or after surgery is collected and then transfused back to the patient) intraoperatively and postoperatively, and

supporting hematopoiesis (the process by which blood cells are produced to maintain the levels of circulating blood cells in the body) throughout perioperative care.
- Dietary restrictions: Be knowledgeable of any fasting practices (e.g., Ramadan) or dietary restrictions (e.g., kosher, halal) that may need to be factored into preoperative and postoperative instructions.

Modesty and privacy:

- Respectful draping: Provide options for gowns or draping that align with cultural preferences and norms around modesty.
- Gender considerations: Some patients may have a clear preference to be treated by healthcare providers of the same gender identity, if possible. Nursing managers should make every effort to facilitate these interactions in accordance with patient preferences.

Nonverbal communication:

- Observe cues: Be aware that nonverbal cues (e.g., eye contact, body language) may have different meanings across cultures. Do not assume that your perception based on your cultural background is the same for your patient. For example, in American culture, avoiding eye contact may be seen as shyness or even evasiveness. However, for Muslim patients, it may be a sign of deference and respect.
- Avoid assumptions: Do not assume that a patient's silence implies agreement or understanding. It is critical that you create a safe space for questions and clarification.

Complementary and alternative medicine (CAM):

- Ask about CAM use: Ask patients if they use herbs, supplements, or traditional healing practices. Do this not only so you can include them in care, when possible, but also so you can be alert for how they might interact or affect traditional treatments or medications used during surgery.
- Prioritize collaboration, not judgment: Work with patients, families, and other healthcare providers to integrate any safe and beneficial CAM practices into the patient's care plan.
- Cultural sensitivity: When providing care, cultural sensitivity requires open communication, respect, and a willingness to learn. What is considered acceptable in some cultures may be considered abhorrent in others. Nurses cannot look at the norms of one culture through the lens of their own culture.

The nurse's keen observation skills and ability to build rapport with patients are invaluable assets. They can detect subtle cues of discomfort, unearth hidden concerns, and ensure the patient feels heard and understood. The preoperative nurse then communicates this information to the surgeon, anesthesia provider, and RN circulator to ensure a collaborative approach to care.

Implementing Preoperative Nursing Interventions

Although the facility and surgical team will have specific requirements for the nurse to follow to prepare patients for surgery, there are some items that are expected components of the preoperative nursing assessment checklist (Table 31.2) (Stony Brook Medicine, n.d.).

Stage	Nurse's Role	Things to Consider
General information	Confirm patient identification, reason for surgery, allergies, medications, and advance directives.	Direct patient to appropriate resource if insurance questions arise.
Medical and surgical history	Document chronic and acute medical conditions, past surgeries, anesthesia history, and family history.	Determine which, if any, conditions may affect the perioperative course.

TABLE 31.2 Components of the Preoperative Nursing Assessment Checklist

Stage	Nurse's Role	Things to Consider
Physical assessment	Assist with gowning, confirm surgical site, establish IV access, obtain baseline vitals, and perform relevant system assessments (cardiovascular, respiratory, neurological, skin, musculoskeletal). Encourage voiding.	Ensure patient's personal belongings are secure.
Psychosocial assessment	Assess anxiety levels, support systems, coping mechanisms, and understanding of the procedure.	Consider cultural, spiritual, and religious beliefs/practices that may be relevant to surgery and postoperative care.
Preoperative preparation	Verify NPO (nothing passed orally) status (no eating or drinking for a set period of time before surgery), review laboratory/diagnostic tests, perform skin preparation if needed, document prostheses/devices, and confirm removal if necessary.	Ensure hair removal from linen and surgical garments if applicable.
Education and discharge planning	Reinforce preoperative instructions, demonstrate postoperative exercises, discuss postoperative expectations (pain management, recovery, wound care, activity restrictions, follow-up), and identify patient's support system.	Preoperative exercises (e.g., have the patient demonstrate correct use of the incentive spirometer) can improve postoperative compliance and recovery.

TABLE 31.2 Components of the Preoperative Nursing Assessment Checklist

LINK TO LEARNING

This document provides an example of a task checklist (https://openstax.org/r/77taskchecklist) that preoperative nurses may encounter.

Providing Pain Management

While pain medication plays a crucial role in preoperative care, the nurse's involvement in pain management extends far beyond simply administering medications. They take a patient-centered approach, employing various interventions to minimize discomfort and promote a calmer, more positive surgical experience.

When possible, nurses may recommend medications or nerve blocks before the onset of significant pain. As the patient's advocate, the nurse may be called on to collaborate with providers to determine if this proactive approach is appropriate for the patient and would help reduce postoperative discomfort and improve recovery time. It is important for nurses to recognize that anxiety and fear can exacerbate pain perception. Nurses should provide emotional support, address concerns, and employ relaxation techniques like guided imagery or deep breathing to manage anxiety and reduce pain (Stanford Medicine, n.d.).

Nurses should educate patients about nonpharmacological pain management techniques that can be used both before and after surgery. These strategies can reduce pain, decrease how much pain medication is needed, and alleviate stress. While pain management must be tailored to the patient, there are some general nonpharmacological pain management strategies the nurse should be aware of and able to suggest to patients:

- Deep breathing and relaxation techniques: Practicing deep breathing exercises, mindfulness techniques, or guided meditation may help manage anxiety and may even decrease sensitivity to pain.
- Distraction methods: Distraction techniques such as listening to music, watching a favorite show, or engaging in light conversation may help divert attention from pain or discomfort.
- Cold and heat therapy: The safe use of cold packs or heating pads can help reduce inflammation and pain, depending on the specific procedure and surgeon's recommendations.

- Proper positioning: Positioning that supports the body, reduces pressure on surgical sites, and promotes comfort can go a long way to helping patients be more at ease physically and mentally. Provide pillows or other positioning aids for comfort as well as to help prevent pressure sores.

What works for one patient may not work for another, so it is up to the nurse to work with the patient and advocate on their behalf to ensure their pain is managed and to adapt to changing needs for pain management throughout the surgical journey and on to recovery.

Teaching Coping Strategies

A key aspect of preoperative interventions involves teaching patients coping strategies to navigate the anxiety and stress associated with the upcoming procedure (Stanford Medicine, n.d.; Tsegaye et al., 2023). Nurses should take a personalized approach, tailoring guidance to each patient's individual needs and preferences. They may do the following:

- Identify coping mechanisms: Encourage patients to explore their existing coping skills, whether it is deep breathing, mindfulness techniques, spending time with loved ones, or engaging in hobbies.
- Introduce new strategies: Introduce relaxation techniques like guided imagery, progressive muscle relaxation, or visualization exercises if a patient lacks coping mechanisms.
- Promote positive self-talk: Encourage the patient to challenge their own negative thoughts and replace them with affirmations; this can significantly reduce anxiety and pain levels and improve preoperative well-being.
- Provide resources: Connect patients with additional resources, such as support groups, educational materials, or online resources to enhance their coping toolbox.

The effectiveness of these strategies is backed by research. Studies have shown that educational conversations between the patient and healthcare providers can help prepare surgical patients and significantly reduce anxiety (Aust et al., 2016). By facilitating or providing teaching, nurses not only lessen the emotional burden of surgery but also play a crucial role in optimizing the overall surgical experience.

PATIENT CONVERSATIONS

Coping with Pain

Nurse: Hi, I'm Maria. I will be your preoperative nurse this morning. Can you tell me your name, birthday, and the surgery you are having today?

Patient: Yes, I'm Veronica LaBate and my birthday is July 6, 1972. I am having a right knee replacement.

Nurse: Thank you. How are you feeling? Do you have a few minutes to talk with me about your surgery?

Patient: Sure. Honestly, I'm a little bit nervous. Well, maybe a lot nervous. I've heard the recovery can be . . . pretty rough.

Nurse: Feeling nervous is normal. That's why having a chat now is helpful. We want to make sure that any concerns or questions you have get answered. By "rough," are you worried about how long it will take to heal? Or that you'll be in pain?

Patient: Oh, I'm scared of the pain. I know it's going to hurt some, but what if I wake up and it hurts a lot?

Nurse: Managing pain is a very important part of what the team will do for you, and it starts before we even get to the OR. We can talk about it now, actually. Let's start by talking about how to measure your pain. We use a pain scale to help you tell us about your pain. It goes from zero, which is no pain at all, to ten, which is the worst possible pain you could ever imagine. When I had surgery last year, I reminded myself that ten pain is like standing on a sidewalk and a car runs over you. That helped me be objective about my pain so I could compare the pain number I gave my pain before surgery with the pain number I gave the pain after surgery. Does that make sense?

Patient: Yes, I think I understand.

Nurse: So, how would you rate your pain or discomfort right now?

Patient: My knee just aches right now. I guess I would say it's a two out of ten.

Nurse: OK. When you wake from surgery, your recovery nurse will ask you to rate your pain. Remember what it felt like now and what ten might be like compared to your postoperative pain. So, let's get back to your fear of pain after surgery.

Patient: Well, I know you'll give me medicine, but I don't even like taking a Tylenol for a headache. I'm pretty nervous about those painkillers people get addicted to, and I think I'll try to tough it out without them.

Nurse: Medicine is part of pain management, and it has an important role in helping keep your pain controlled during the surgery and afterward. It's important that you're not in so much pain that you can't rest and heal properly, but we want to balance that with the side effects and risks that come with medicine. Luckily, you don't just have to rely on pain medicine alone to cope. Can you think of any nonmedical ways you deal with pain?

Patient: Well, when my knee aches a heating pad usually helps.

Nurse: Heat therapy is what we call a nonpharmacological pain management technique. There will be some techniques that you can use after your surgery to help you cope with the pain, and sometimes they work well enough that you don't need as much pain medicine. For example, deep breathing exercises and relaxation techniques can significantly help with pain and anxiety.

Patient: Really? How?

Nurse: Well, deep breathing gets more oxygen flowing through your body and brain and can help you relax and loosen your muscles, which can naturally ease pain. Mindfulness or guided imagery can help distract your mind from the pain, which can sometimes make it more manageable. Some people find that listening to music or watching movies also helps distract them.

Patient: Will I be able to use my heating pad?

Nurse: Cold or heat therapy can be very effective. Cold therapy is great for reducing swelling and inflammation, while heat therapy can relax muscle tension and improve blood flow, helping with pain relief. We'll find out for sure from your surgeon whether these will be appropriate options for you, depending on your surgery.

Patient: That all sounds fine, but what if I do all those things and I'm still in a lot of pain?

Nurse: Well, if at any point the pain is worse or not something you feel you can manage, we want you to let us know right away. It's important for your recovery that we manage your pain. At that point, we may want to adjust the amount or type of your medicine so that it helps more. It can also help to change positions and move around to avoid putting extra pressure on your wound, which can hurt and delay healing.

Patient: How will I remember all this after I get home?

Nurse: Before you're discharged, we'll give you detailed instructions on managing your pain at home, including how to take your medicine safely and a list of these other techniques we talked about that you might want to try. Plus, we will make sure it's clear how and when you should contact your surgeon if you have any concerns about your pain levels.

Patient: That makes me feel a bit better, actually. Not just knowing I have options but that I can call someone if I get home and am hurting and don't know what to do.

Nurse: We definitely want you to feel informed and empowered, but don't worry—you won't be going through this alone.

Attending to Family Needs

The preoperative stage is often a whirlwind of emotions for not only the patient but also their family members. Navigating anxieties, managing logistics, and providing support all fall within the scope of the preoperative nurse's role, ensuring a positive experience for both the patient and their loved ones.

Nurses should employ active listening and open communication, addressing specific fears and questions to create a foundation of trust and understanding. It is also important to explain the procedure, potential complications, and

recovery process, which empowers families to be active participants in their loved one's care. Clear communication reduces anxiety and facilitates informed decision-making. Family members often grapple with their own anxieties. Nurses can offer emotional support, provide resources like support groups, and connect them with other families facing similar experiences.

By attending to both the emotional and practical needs of families, nurses play a crucial role in creating a supportive environment for patients during preoperative interventions. This holistic approach not only fosters a positive experience for the entire family but also contributes to a smoother and more successful surgical journey for the patient.

Initiating the Perioperative Records

Perioperative nurses, acting as guardians of information, play a critical role in initiating and maintaining accurate and comprehensive patient records. These records are not mere paperwork; they are the vital narratives of a patient's surgical journey, informing future care, ensuring safety, and contributing to medical advancements. From the moment the patient arrives at the facility to when they go to the OR, preoperative nurses meticulously record every step of the process, including vital signs, medications administered, procedures performed, and unexpected events. This detailed record serves as a real-time account of the preoperative stage, allowing for immediate adjustments and ensuring accurate communication between the different perioperative stages.

The RN circulator continues to maintain the patient's record by documenting intraoperative activities (e.g., time-outs performed, position and positioning aids used, hypothermia interventions, counts, medications on the sterile field, wound irrigation, electrosurgical dispersive pad placement) and patient outcomes (e.g., surgical procedures performed, skin integrity, wound status, final count status). As the patient recovers, PACU nurses continue to document vital signs, pain levels, interventions provided, and any complications.

This ongoing record tracks the patient's progress, identifies potential issues early, and helps tailor recovery plans for optimal outcomes. Maintaining consistent formats and adhering to established documentation protocols ensures clarity, completeness, and legibility of records. This allows for efficient information sharing between healthcare providers and facilitates accurate data analysis for research and quality improvement initiatives. By meticulously documenting every aspect of the perioperative journey, nurses play a crucial role in safeguarding patient safety, informing future care, and advancing the field of medicine. Their dedication to accurate and comprehensive records ensures that every scalpel stroke, every suture, and every heartbeat is not just witnessed but also remembered for the benefit of patients now and in the future.

Administering Preanesthetic Medication

Preoperative nurses, acting as medication safety champions, ensure the safe and effective delivery of preanesthetic medications. These critical medications promote a safe, comfortable surgical experience. Nurses conduct thorough patient reviews, considering factors like allergies, medical history, and medication interactions. This comprehensive analysis ensures the selection of the most appropriate preanesthetic medication for each individual patient, minimizing risks and optimizing outcomes. Preanesthetic medications serve several purposes, including the following (Aegis Anesthesia, 2023):

- Anxiolysis: An **anxiolytic**, like benzodiazepines (e.g., midazolam), reduces anxiety and promotes a calming effect. This can help alleviate preoperative fears and create a more relaxed state.
- Sedation: Certain medications (e.g., benzodiazepines, opioids) induce a state of relaxation and sedation. This helps minimize distress and discomfort during the induction of anesthesia.
- Amnesia: Some preanesthetic medications, particularly benzodiazepines because of their rapid onset and short duration of action, are used to promote temporary memory loss or amnesia. This helps patients forget the events surrounding the induction of anesthesia and the procedure itself.
- Analgesia: Opioid analgesics like fentanyl may be administered preoperatively to provide pain relief and reduce the perception of pain during the preoperative process, surgery, and postoperative recovery period.
- Antisialagogue and anticholinergics: Medications called **antisialagogues** and anticholinergics, like glycopyrrolate, reduce salivation, minimizing the risk of aspiration during the procedure and preventing bradycardia.
- H2 blockers or proton pump inhibitors: These medications (e.g., omeprazole [Prilosec]) are given to reduce gastric acid secretion and minimize the risk of aspiration in patients at risk.

- Antiemetic: Medications can be administered intravenously (ondansetron [Zofran]) and transdermally (scopolamine patches) for their antiemetic properties to prevent postoperative nausea and vomiting.

It is essential to administer preanesthetic medications according to the appropriate schedule to ensure the medication has sufficient time to take effect before the induction of anesthesia. Continuously monitoring the patient's vital signs, including blood pressure, heart rate, respiratory rate, and oxygen saturation, is crucial during and after the administration of preanesthetic medications to make sure they remain a safe and effective treatment. Prior to the administration of preanesthetic medications, it is also important for the patient to sign the necessary consent forms and to urinate, ensuring they are physically and legally prepared for the procedure.

Nurses follow strict protocols and guidelines for medication administration, adhering to the eight rights of medication administration: right patient, right medication, right dose/concentration, right route, right time, right documentation, right reason, and right patient response (Comerford & Durkin, 2021). Meticulous adherence to the eight rights helps to prevent errors and helps ensure the intended effects of the medication are realized. Nurses proactively address any emerging issues, adjusting medication regimens or notifying the surgical and anesthesia team, if necessary.

31.3 Intraoperative Phase

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the roles of the surgical team
- Identify key components of the surgical environment
- Analyze potential intraoperative complications

The **intraoperative stage** begins as soon as the patient is transferred to the OR and concludes when the patient is transferred to the PACU. This stage is a highly coordinated effort by a multidisciplinary professional team that includes surgeons, anesthesia providers, perioperative nurses, and surgical technologists, with each member playing a unique and equally vital role.

Perioperative nurses are fully aware of their surroundings and understand the space in which they will be working. The OR environment is a carefully controlled and sterile setting that is designed to minimize the risk of infection and optimize patient outcomes. From the specialized equipment, the design and layout of the space, and the intricate protocols and procedures, every aspect of the perioperative space is carefully orchestrated to optimize patient care and team efficiency.

However, even the most well-designed OR with advanced tools and strict protocols cannot make up for the presence of skilled providers who can work together. The surgical team must be vigilant and responsive to potential complications. Effective communication with informed and swift decision-making and a deep understanding of the patient's unique circumstances are crucial for mitigating risks and addressing any unforeseen challenges that may arise.

The nurse must understand the roles and responsibilities of the surgical team, understand the key components of the surgical environment, and recognize potential intraoperative complications that can occur. Nurses must understand the dynamic and complex nature of surgical care and be equipped with the knowledge necessary to contribute effectively to the surgical team.

Surgical Team and Assigned Roles

Each member of the surgical team contributes to how a surgery unfolds, and it is their actions that will ultimately ensure patient safety and optimal patient outcomes. The RN circulator orchestrates the flow of the OR. They manage supplies and equipment, ensure sterile technique, anticipate the surgeon's needs, coordinate communication, document the surgery's progress, and advocate for the patient's well-being throughout the procedure. The surgeon is trained to perform surgical procedures and bears the ultimate responsibility for the surgery and the actions of the other surgical team members. The skilled experience of the scrub person (e.g., scrub nurse, surgical technologist) allows close collaboration with the surgeon by preparing and organizing surgical instruments, anticipating the surgeon's next move, and maintaining a sterile field. The anesthesia provider ensures the patient's comfort and safety throughout the procedure by administering anesthesia and monitoring vital signs.

Perioperative first assistants are specifically trained to assist the surgeon directly by retracting and suturing tissues, providing additional instrumentation, and anticipating needs, among other things.

Each member of this surgical team, with their unique skills and expertise, contributes to the harmonious performance of a successful operation. By understanding and appreciating their roles, nurses can better collaborate with the team, ensuring the highest quality of care (Table 31.3).

Surgical Team Role	Responsibilities	Key Points
RN circulator	• Assesses and educates preoperative patients • Prepares and maintains the sterile operating room (OR) environment • Collaborates with the scrub person, anesthesia provider, and surgeon • Monitors the sterile field to prevent contamination • Ensures an accurate **surgical count** to prevent **retained surgical items (RSIs)** • Manages the intraoperative "**time-out**" • Tracks surgical progress and provides supplies as needed • Collects and processes specimen, applies dressings, and transfers the patient to the postanesthesia care unit	• Acts as patient's primary advocate • Orchestrates the flow of the surgical environment • Collaborates with the surgical team • Acts as a vigilant guardian intraoperatively • Tracks progress • Ensures transition to postoperative care
Scrub person	• Assists the RN circulator in OR setup • Assembles and passes instruments and supplies to the surgeon • Labels medications and fluids on sterile field • Manages specimens on the sterile field	• May be an RN or a surgical technologist • Scrubs in during surgery
Surgeon	• Performs preoperative evaluation, discusses surgical options with the patient, and determines the surgical approach • Obtains informed consent • Leads surgical team and makes critical decisions during surgery • Maintains communication with anesthesia provider and other team members • Monitors patient's recovery and provides follow-up care	• Retains ultimate responsibility for surgery • Leads a diverse team • Ensures clear communication

TABLE 31.3

Surgical Team Role	Responsibilities	Key Points
Anesthesia provider	• Conducts preoperative medical history and physical examination • Discusses anesthesia options and obtains informed consent • Administers anesthesia and monitors vital signs during surgery • Provides postoperative pain management orders	• May be a physician (anesthesiologist) or certified nurse anesthetist • Manages perioperative care • Monitors vital signs • Ensures postoperative pain management
Perioperative first assistant	• Assists surgeon during surgery by handling tissues, retracting, and using instruments • Anticipates surgeon's needs and provides technical support • Collaborates with surgeon to plan procedure and may meet patient preoperatively • Assists with wound closure, specimen collection, and patient transfer	• May be certified surgical first assistant, registered nurse first assistant, surgical physician's assistant, or perioperative nurse practitioner • Anticipates needs of the surgeon • Facilitates informed consent (surgeon responsible) • Assists with closure and transfer

TABLE 31.3

CLINICAL SAFETY AND PROCEDURES (QSEN)

National Patient Safety Goals and Surgery

The Joint Commission established National Patient Safety Goals (NPSGs) to promote patient safety and minimize risks in healthcare settings. There are several NPSGs that the nurse will need to consider that are of particular relevance to surgical care (The Joint Commission, 2024).

- Correct site, correct procedure, correct patient: This goal emphasizes the crucial steps taken to verify the exact surgical site, procedure, and patient identity before the surgery begins. This is often achieved through a "time-out" during which the entire surgical team pauses and confirms all the pertinent details at three points during the surgical process: before induction of anesthesia, before the first incision is made, and before the patient leaves the OR (World Health Organization, n.d.).
- Prevention of wrong-site surgery: Specific protocols and checklists are used to ensure that every surgery is performed on the intended body part, thereby greatly reducing the chances of a surgery being performed on the wrong site or the wrong procedure being done on the wrong patient. The nurse must be aware of the protocols and procedures at their facility that promote a culture of safety, such as marking the surgical site preoperatively and confirming the site several times before the surgery begins.
- Communication: Effective communication between surgeons, anesthesia providers, nurses, and other team members is one of the most essential components of patient safety during surgery. Clear communication ensures that all team members know and understand the surgical plan, are prepared for any potential issues, and are equipped to make necessary adjustments throughout the procedure.
- Safe medication practices: Adhering to safe medication practices, such as accurate medication labeling, proper dosage administration, and heightened vigilance for potential medication interactions, is essential to patient care before, during, and after surgery.
- Infection prevention: Maintaining a sterile environment is one of the most vital features of surgical safety. The

NPSGs emphasize the importance of practicing proper hand hygiene, using sterile technique, and administering antibiotics, when appropriate, to minimize the risk of SSIs.

Key Components of the Surgical Environment

The OR is a meticulously controlled environment designed to minimize patient risk during surgical procedures. To keep this environment highly effective, it is important to be conscious of proper practices and protocols for maintaining **sterility** (state of being free from living microorganisms), mitigating fire hazards, and preventing occupational health risks.

FIGURE 31.3 The operating room is designed and run in a manner that prioritizes safety and efficiency. (credit: "Clinical Center Operating Room" by National Institutes of Health Clinical Center/Flickr, CC BY 2.0)

Surgical Asepsis and Sterile Technique

Surgical site infections are potentially serious infections that may occur in surgical wounds or around incisions within thirty days of the procedure or within one year in the case of organ or space infections with an implant. These serious infections remain a persistent adversary, jeopardizing patient recovery and adding a significant economic burden. Microorganisms lurk on patient skin, in the air, and on instruments, posing a constant threat to the vulnerable surgical wound. Meticulous adherence to aseptic techniques and rigorous sterilization protocols are crucial to minimizing this risk (Anderson & Sexton, 2024; WHO, n.d.).

The absence of all living microorganisms within any type of invasive procedure is **surgical asepsis**; this is achieved through rigorous sterilization processes and meticulously maintained through sterile technique. A set of specific practices and procedures employed to maintain sterility of the sterile field (e.g., equipment, instruments, drapes) is **sterile technique**.

Individual responsibility is paramount in preventing SSIs, which is demonstrated through having a **surgical conscience**. A surgical conscience is a moral code of integrity that compels a person to speak up when an infraction has or is thought to have occurred, to prevent patient harm (e.g., contamination increasing the risk of an SSI). Possessing a surgical conscience means that any time doubt exists about a product's sterility or whether a behavior resulted in contamination, the person speaks up and takes appropriate action without fear or concern of embarrassment or criticism, even when no one else is watching. (Holm, 2023, p. 116)

Maintaining a sterile environment requires the following:

- Hand hygiene: The cornerstone of aseptic practice is thorough handwashing and gloving prior to surgery, which is crucial for minimizing microbial transfer.
- Sterile field creation: Designated areas draped with sterile barriers define the sterile field where instruments and supplies are being used and are kept free from contamination.
- Maintaining sterile field integrity: Movements within the sterile field are restricted and controlled to avoid

accidental breaches. Instruments are transferred using specific techniques like “no-touch” or hands-free technique methods. This also helps minimize the risk of sharps injuries during surgery.
- Constant vigilance: Continuous awareness of potential contamination risks and immediate corrective actions is essential to maintain sterility throughout the procedure.

Rigorous adherence to sterile technique significantly lowers the risk of SSIs, which can lead to prolonged hospital stays, increased healthcare costs, and even patient death. By minimizing the risk of infections, sterile practices contribute to faster healing times, better surgical results, and overall improved patient safety and satisfaction. This requires constant vigilance, meticulous attention to detail, and unwavering adherence to established protocols.

Surgical Attire and Surgical Zones

Typical **surgical attire** is part of personal protective equipment (PPE) and includes scrubs, surgical gowns, gloves, masks, head coverings, shoes, and face shields that are worn to prevent personal and environmental contamination. Scrubs are loose-fitting garments made of tightly woven material, designed to prevent shedding of lint. The material may be made of an antimicrobial fabric that may help decrease bacterial contamination of scrubs. Scrub caps cover hair completely; beard coverings are used when necessary. Shoe covers are not required if the shoes are worn only in the surgical suite. If the shoes come from outside the surgical suite, shoe covers are worn that enclose footwear. Impervious shoe covers may be worn if exposure to fluids is anticipated, such as procedures with copious amounts of irrigation (e.g., arthroscopy). Surgical gowns are sterile disposable garments worn over scrubs to provide an additional barrier against contamination. Different levels of sterile and impermeable gowns exist for various procedures and risk levels. Hands should be covered by sterile, single-use gloves. Double gloving is advised when scrubbed in for all procedures because pinpoint holes occur caused by wear and tear during the procedure. Double gloving also may be employed for high-risk procedures, such as intubation. Masks filter microorganisms, while face shields prevent splashes and splatter.

Personal items (e.g., jewelry, stethoscopes, ID badges, lanyards, briefcases) can become contaminated with bacteria so should be cleaned regularly according to facility policy. Scrubbed personnel must not wear rings, watches, bracelets, or necklaces that can fall outside the sterile scrubbed attire.

The OR is segmented into **surgical zones**, each with distinct functions and attire requirements. This serves to safeguard against the silent threat of infection. This stratification orchestrates a flow of sterility, protecting the vulnerable surgical site from the outside world. The zones are as follows:

- The **unrestricted zone** is the outer layer of the OR, where nonsterile activities like patient admission and transport occur. Street clothing is allowed, with personnel donning scrubs and shoe covers for basic hygiene before entering the semirestricted zone. The unrestricted zone includes the admissions area, offices, changing areas, break rooms, and supply receiving and storage.
- The **semirestricted zone** is an intermediate zone between the unrestricted and restricted zones, where personnel are clothed in surgical attire. This area includes the preoperative and postanesthesia care units and medication rooms.
- The **restricted zone** is the innermost sanctum encompassing the OR suite itself where surgery is performed and includes the actual OR rooms, the scrub sink areas, substerile rooms, central core, and steam sterilization areas. Access is strictly limited to personnel in at least surgical attire plus head covering and mask.

Health Hazards Linked to the Surgical Environment

While the OR evokes images of sterile precision and lifesaving interventions, it also harbors its own share of hidden health hazards. From fire risks, exposure to invisible anesthetic gases, and ergonomic and psychological stresses to surgical smoke, laser risks, and exposure to blood and body fluids, these risks demand proactive management to ensure the well-being of both patients and healthcare personnel.

Fire Risks and Prevention

Understanding and mitigating fire risks in this high-stakes environment is paramount, demanding constant vigilance and proactive measures. Any fire requires three elements: fuel (e.g., surgical drapes, alcohol-based cleaning agents), an oxidizer (e.g., oxygen, nitrous oxide), and an ignition source (e.g., electrosurgical equipment, lasers). All three elements of the fire triangle are readily available in the OR, creating a potentially volatile mix. Electrosurgical units and lasers can generate sparks sufficient to ignite nearby fuel sources. A technique or device to stop bleeding by burning tissue, typically with electricity, is called **electrosurgery**. Electrosurgery can be monopolar, bipolar,

argon-enhanced coagulators, or ultrasonic. Faulty equipment, electrical malfunctions, and static discharge further contribute to the potential ignition sources.

LINK TO LEARNING

This algorithm demonstrates the steps required for mitigating fire risks in the OR (https://openstax.org/r/77ORfirerisks) using a multipronged approach.

Anesthetic Gases

Anesthetic gases and vapors, while essential for surgery and pain management, can pose health risks when personnel are exposed over time. Chronic exposure to an **occupational anesthetic gas (OAG)** has been linked to reproductive issues, neurological disturbances, and even cancer in some studies (Occupational Safety and Health Administration, 2000). Critical control measures include implementing closed-circuit anesthesia systems designed to minimize the release of gases and vapors into the room, using scavenging devices that help capture and remove gases and vapors that escape the closed system, and promoting proper ventilation.

Ergonomic Stress

Repetitive movements and standing for long periods of time in the OR can take a cumulative toll on perioperative personnel. Musculoskeletal disorders, particularly in the neck, back, and shoulders, are prevalent among surgeons and OR personnel. Ergonomically designed furniture, adjustable equipment, and promoting frequent postural changes are vital for mitigating these risks.

Psychological and Emotional Stress

Witnessing trauma and dealing with patient mortality can take a psychological toll on healthcare personnel in the OR. Compassion fatigue, burnout, and post-traumatic stress disorder (PTSD) are not uncommon experiences. Offering access to mental health resources, fostering a supportive work environment, and implementing resilience training are crucial in safeguarding the well-being of perioperative personnel.

Surgical Smoke

During surgery, **surgical smoke** is generated by thermal destruction of tissue via electrosurgical and radio-frequency devices, lasers, ultrasonic scalpels, power tools, and other heat-destructive devices during surgery. Surgical smoke harbors a hidden threat of potentially harmful chemicals (e.g., bioaerosols, hydrogen cyanide, benzene, formaldehyde) and particulate matter (e.g., dead and live cellular material [e.g., blood fragments, viruses]). Nanoparticles, which make up 80 percent of surgical smoke, can transmit viable bacteria and human papillomavirus (HPV) when inhaled, entering the person's bloodstream and traveling to organs (The Joint Commission, 2020). Patient exposure to surgical smoke is short-term and relatively low-risk. However, daily exposure of surgical personnel to surgical smoke causes multiple health problems. These include headaches, watering of the eyes, upper respiratory tract irritation (e.g., cough, sore throat, sneezing, rhinitis), nausea, drowsiness, dizziness, ocular and visual problems, and also increased pregnancy complications for female scrubbed personnel (The Joint Commission, 2020). This hidden threat underscores the urgency of implementing effective smoke evacuation systems and employing smoke plume management techniques like smoke shields and suction devices to protect both patients and perioperative personnel from the unseen dangers lurking within surgical smoke.

Laser Risks

With their concentrated beams of light for cutting or cauterizing tissue, the **laser** has revolutionized surgery, enabling minimally invasive procedures with greater precision and reduced blood loss. To avoid danger, lasers must be used while following meticulous safety protocols and with a deep understanding of potential risks in the surgical environment. Laser hazards in the OR include the following:

- Direct tissue damage: Unintentional exposure to the laser beam can cause severe burns to skin, eyes, and internal organs, for both patients and perioperative personnel.
- Fire hazards: Laser contact with drapes, instruments, or flammable materials can spark fires, posing a significant threat in the oxygen-rich surgical environment.
- Eye injuries: Accidental laser reflections off instruments or even patient skin can cause permanent eye damage to anyone not wearing proper eyewear.

- Airborne contaminants: Lasers vaporize tissues during surgery, creating plumes containing potentially harmful particles and chemicals that can be inhaled by the patient and perioperative personnel.

Exposure to Blood and Body Fluids
Blood and body fluids can be vectors for viruses, bacteria, and parasites. Some major threats include the following:

- Hepatitis B virus: This causes liver inflammation and damage, with chronic infection potentially leading to cirrhosis and liver cancer.
- Hepatitis C virus: Although often asymptomatic initially, chronic infection can lead to liver cirrhosis, liver failure, and even increased risk of liver cancer.
- Human immunodeficiency virus (HIV): This can lead to AIDS, significantly weakening the immune system and leaving individuals at-risk for opportunistic infections.

Sharps injuries (e.g., needlesticks, scalpel cuts) and other injuries from contaminated instruments pose a direct route of pathogen transmission. Even without needles, blood and body fluids can splash or become aerosolized, increasing the risk of inhalation or contact with mucous membranes. Broken or damaged skin on healthcare workers can provide another entry point for pathogens. Exposure to blood and body fluids remains a significant occupational hazard in the surgical environment. However, a safer environment can be created for perioperative personnel by prioritizing universal precautions, consistently using proper PPE, implementing guidelines for sharps safety (e.g., exposure control plan, engineering controls, work practice controls, administrative controls, PPE, sharps disposal), and promoting education and training to minimize the threat posed by these silent, infectious agents (Association of periOperative Registered Nurses [AORN], 2021b).

Addressing health hazards in the OR demands a comprehensive approach. Implementing best practices for fire safety minimizing OAG exposure, promoting ergonomic principles, prioritizing mental health support, and adhering to infection control practices are vital for safeguarding the health and well-being of those who safeguard others. By acknowledging and proactively managing these challenges, we can ensure the OR remains a safe environment for both patients and healthcare team members.

Potential Intraoperative Complications

Despite meticulous planning and skilled surgeons and perioperative personnel, the inherent unpredictability of human biology can introduce challenges during surgery. These intraoperative complications, while not the norm, are a reality for which surgeons and patients must prepare. These complications include hemorrhage, anesthesia awareness, aspiration, allergic reactions and anaphylaxis, cardiac arrest, hypoxia, hypothermia, malignant hyperthermia, and positioning injuries.

Hemorrhage

One common operative concern is excessive bleeding, which may turn into hemorrhage. This can be caused by various factors (e.g., traumatic injury requiring surgery, unexpected anatomical variations, intraoperative tissue damage, preexisting medical conditions). To manage bleeding, surgeons employ a range of techniques, including electrosurgery and sutures, working swiftly to maintain stable blood pressure and ensure oxygen delivery to vital organs. Excessive bleeding may be treated with administration of fluid or one or more of a variety of blood products.

Should blood and blood product administration become necessary, the RN circulator and anesthesia provider work together to ensure patient safety. Before blood product administration, the nurse confirms that typing and compatibility screening have been performed within the past seventy-two hours. The RN circulator obtains the supplies and equipment necessary for blood administration (e.g., blood tubing with a blood filter, a mechanical blood delivery pump or pressure bag for rapid, emergent blood administration). Blood is administered via an 18-gauge or larger catheter along with normal saline to avoid clot formation. Microdrip tubing is never used because it destroys red blood cells. Nothing else may be administered through the same IV line. The anesthesia provider and RN circulator perform the mandatory two-person verification process for blood product transfusions before blood is administered (Holm, 2023).

Anesthesia Awareness

The experience of consciousness and even pain during surgery with possible recall of events while under general anesthesia is called **anesthesia awareness**. While estimates vary, this unsettling occurrence affects roughly 1 in

1,000 to 1 in 15,000 patients undergoing general anesthesia. This spectrum of awareness can range from vague sensations and muffled sounds to vivid memories of the surgical process and excruciating pain (Kim et al., 2021).

The precise causes of anesthesia awareness remain complex and multifaceted. Factors like genetics, individual variations in medication metabolism, inadequate medication dosing, and interactions with specific medications can all contribute to this unwanted awakening during general anesthesia. Additionally, certain patient characteristics (e.g., obesity, pregnancy) and certain medical conditions (e.g., lung disease) may increase the risk. The psychological effect of anesthesia awareness can be profound. Patients often grapple with feelings of fear, vulnerability, and betrayal of trust. Vivid memories of the surgery can lead to anxiety, depression, and PTSD, significantly affecting their quality of life.

Anesthesia awareness is rare, and although its cause may not be fully understood, anesthesia providers employ interventions to help prevent its occurrence. Interventions to prevent anesthesia may include addressing the varying anesthetic requirements for different patients, ensuring that sufficient anesthetic medication is administered, and ensuring that the anesthesia machine has undergone appropriate preventive maintenance to help prevent malfunction.

LIFE-STAGE CONTEXT

Anesthesia Awareness in Children

Any patient can experience anesthesia awareness, which is the experience of consciousness and even pain during surgery while under general anesthesia. However, it can be particularly challenging when it occurs in children. Although some studies have suggested young patients might be more at risk for experiencing anesthesia awareness, assessing it in children also presents unique challenges because of communication barriers, trauma and stress, and a child's limited understanding.

Children have unique needs during surgery related to the state of their physical and emotional development. It is crucial for the surgical team to understand that anesthesia awareness may be a possibility in a pediatric patient and take steps to decrease the risk of it occurring.

It is also critical that a child's accounts of anesthesia awareness not be dismissed, even if it may not have truly occurred. The child's experience of confusion, disorientation, and fear can still be traumatizing. It is vital that the anesthesia provider and RN circulator report any incidence to the PACU nurse assigned to recover the patient after surgery. When the parent is brought into the PACU to be with the patient, the PACU nurse should carefully, and with sensitivity, explain to the parent the anesthesia awareness incident and help them speak to the anesthesia provider if necessary.

Aspiration

Instructing patients to be NPO (nothing by mouth) before surgery helps reduce the risks associated with vomiting and aspiration during surgery. However, sometimes patients may not have fasted according to instruction, and in emergencies, a patient may not have had the opportunity to fast at all before the procedure. Although antiemetics can help reduce nausea and vomiting during surgery, it is still possible and carries the serious risk of aspiration. The surgical team must be aware of patient- and surgery-related factors that can contribute to the risk of aspiration and be prepared to respond appropriately to keep the patient safe. For instance, the RN circulator must stand beside the head of the patient with gloves on and be prepared to assist the anesthesia provider during induction of anesthesia and intubation. Furthermore, during local or sedation procedures, the nurse should monitor the patient for signs of nausea (e.g., swallowing, sweating) that could precede an episode of vomiting. The nurse may need to turn the patient's head or suction the patient's oral cavity to keep the patient safe if intraoperative nausea and vomiting occur. The nurse may also be responsible for documenting the occurrence and the steps taken in response; the event should be communicated during the handover report so that appropriate postoperative follow-up care can be provided.

Allergic Reaction and Anaphylaxis

Allergic reactions in the surgical environment can range from mild discomfort to life-threatening emergencies (e.g., anaphylaxis) posing a significant challenge for both patients and healthcare professionals. Surgical allergies

encompass a range of reactions, triggered by various substances encountered during surgery. These can include the following:

- Anesthetic medications: Certain medications used for general anesthesia (e.g., neuromuscular blockers, muscle relaxants) can trigger allergic responses.
- Latex: Gloves, drapes, and other equipment and supplies made of latex can cause itchy rashes, wheezing, and even anaphylaxis in sensitized individuals. Many perioperative departments in the United States have put together a latex-free cart to be used for patients with diagnosed latex allergies. However, to avoid this risk in patients with undiagnosed latex allergies, many perioperative departments have removed all latex products to completely eliminate this surgical risk.
- Antibiotics: Preoperative and intraoperative antibiotics are crucial for infection prevention, but some individuals may have allergic reactions to specific types of antibiotics.
- Iodine: Some contrast agents contain iodine, as does povidone iodine 10 percent, a common skin preparation solution. Historically, practitioners have believed that patients with an allergy to shellfish (which normally harbor iodine) should not be exposed to iodine to minimize the risk of an iodine reaction. However, recent evidence indicates that a seafood allergy actually may be related to fish protein, not iodine (AORN, 2021a).
- Blood products: Transfusions used during surgery might trigger allergic reactions in some patients, especially those with preexisting sensitivities.

REAL RN STORIES

A Lesson about Latex

Nurse: Celia, RN
Clinical setting: Operating room at a community hospital
Years in practice: 12
Facility location: Outside Orlando, Florida

I tell this story to all the new nurses on the surgical floor because I truly believe it could save a life. Or, if not a life, then a lot of itching. A few years ago, I was on a pretty routine case—a 17-year-old with ovarian torsion who was having a laparoscopy. During the preoperative assessment, the patient had denied allergies, but her mother had piped up and said, "Well, kiwi makes her mouth itchy, so she won't eat them anymore." I noted it in the chart and didn't think too much about it—oral allergy syndrome is pretty common, especially with fruit.

But throughout the process of getting her prepped, she just seemed to be getting more and more uncomfortable. She was in a lot of pain but had some medications in the ED before she came to us. The anesthesia provider thought she'd feel better when the sedative kicked in. She'd never had surgery before, not even stitches for a bumped knee as a kid, so she was very nervous.

It wasn't until we wheeled her into the OR and were scrubbed in that things took a turn, though. By then, she'd had a lot of gloved hands on her body—around her mouth, on her abdomen. I was focused on the checklist and time-out, so I didn't see the redness at first. As the surgery got going and the anesthesia provider was monitoring her vital signs, we noticed her heart rate accelerating a little. I looked her over and noticed that what might have started out as faint redness on her abdomen was spreading and looking more like welts and hives. Just as I was about to speak up, the anesthesia provider did, because he'd noticed that her nose had started to run a bit, and her eyes were tearing.

The anesthesia provider clicked into her chart just as the surgeon asked, "What does her chart say about allergies?" "None known," I offered, "Well, except her mother says kiwi makes her mouth tingle." I knew almost as soon as I'd said it that I must have missed something, because the anesthesia provider immediately said, "Kiwi is highly cross-reactive with latex. She's having an allergic reaction to the gloves, I'd bet on it!"

Well, we got lucky. The reaction was pretty mild and easy to control when everyone's gloves were changed out. The patient had a successful procedure and uneventful recovery. But I made a big note in her chart that she had very likely had a latex allergy and ensured that the PACU nurse was aware of the allergic response and was prepared to include it in the patient's discharge teaching to include suggesting seeking out latex allergy testing. And like I said,

it's the first tidbit I give to new nurses!

Cardiac Arrest

Cardiac arrest is sudden cessation of heartbeat and cardiac function, caused by an electrical disturbance or a lethal rhythm resulting in the loss of effective circulation. Causes of cardiac arrest that occurs perioperatively include myocardial infarction, dysrhythmias, anaphylaxis, malignant hyperthermia (MH), respiratory arrest, and massive blood loss. In most facilities, the RN circulator is required to have Basic Life Support, Advanced Cardiac Life Support, and/or Pediatric Advanced Life Support certification. If a cardiac arrest occurs, the RN circulator calls for assistance, requests the code cart, and directs another team member to begin compressions. Compressions circulate the blood until someone arrives with the defibrillator. Defibrillation stuns the heart and briefly terminates its electrical activity. This is the most likely intervention that will resuscitate the patient because it allows the normal intrinsic heart pacemakers to resume electrical control of the heart.

Roles in the OR are assigned depending on who and the number of people who arrive to help. Often, the ACLS-trained anesthesia provider assumes the role of team leader. However, if the patient requires airway or cardiac intervention (e.g., intubation, medications) immediately, another person may take over as leader. As soon as the defibrillator is brought to the room, the nurse applies the defibrillator pads and prepares to deliver a shock when instructed to do so by the team leader. Two other roles are to administer medications and document medication administration and other events with times and the patient's responses. Another nurse continues the role of RN circulator by providing supplies and maintaining the counts if surgery continues during resuscitation (Holm, 2023).

Hypoxia

A state in which the body's tissues are deprived of adequate oxygen is known as hypoxia. It can pose a significant challenge during surgery, with potentially devastating consequences if left unrecognized. Hypoxia in the surgical setting can manifest in various ways, depending on its cause and severity. Some potential presentations include the following:

- Decreased alertness and responsiveness: Patients might appear drowsy, confused, or disoriented.
- Rapid or shallow breathing: The body attempts to compensate for the oxygen deficit by increasing respiratory rate.
- Changes in vital signs: Heart rate and blood pressure may rise initially, followed by a drop in severe cases.
- Skin discoloration: Bluish or grayish skin tone, particularly around the lips and nail beds, can indicate a critical lack of oxygen.

Preventing hypoxia is fundamental in safeguarding patients in the OR. Strategies include the following:

- Preoperative assessment: Preoperative nurses can help by identifying patients at risk based on medical history and respiratory function tests.
- Optimizing oxygenation: After identifying the risk of hypoxia, the preoperative nurse can initiate oxygen therapy and introduce incentive spirometer use preoperatively. This helps ensure adequate preoperative oxygen levels and facilitates use postoperatively in the PACU.
- Standardized protocols: Nurses in all perioperative settings should understand and implement airway management guidelines, monitoring for and responding to hypoxic events.
- Continuous training: Regularly educating on hypoxia recognition and management is particularly important for perioperative personnel.

Hypothermia

A drop in core body temperature below 96.8°F (36°C), or hypothermia, can have significant consequences during surgery and potentially affect patient outcomes. Hypothermia in the surgical setting is not merely an issue of discomfort. Hypothermia triggers a cascade of physiological changes that can affect vital functions. In an attempt to conserve heat, the body constricts blood vessels, reducing blood flow to vital organs. The body's involuntary attempt to generate heat through muscle contractions (shivering) can increase oxygen demand and metabolic rate. Low temperature can disrupt the heart's electrical rhythm, leading to irregular heartbeats and potentially jeopardizing blood circulation. Additionally, impaired blood flow and reduced oxygen delivery to tissues can hinder wound healing and increase the risk of infection.

Several factors can contribute to hypothermia in the OR:

- Exposure: Cold OR temperatures, inadequate patient warming, and open surgical sites can lead to significant heat loss.
- Anesthesia: Certain anesthetic medications can cause vasodilation, lower the cold threshold in the hypothalamus, and suppress the body's shivering response and temperature regulation.
- Fluid administration: Large volumes of cool IV fluids can rapidly cool the body core.
- Underlying medical conditions: Patients with preexisting conditions like thyroid disorders or malnutrition may be more susceptible to hypothermia.

Actions to prevent hypothermia that the perioperative team can implement include passive insulation and active warming methods. Passive insulation includes blankets, drapes, and surgical garments. Active warming methods include forced-air warming devices; water-circulating devices; conductive/resistive warming; radiant warming; and using warmed anesthesia gases, IV fluids, insufflation gases, and irrigation fluids. Some of these measures should be implemented by the preoperative nurse as prewarming actions.

Malignant Hyperthermia

A rare, inherited, hypermetabolic disorder of skeletal muscles called **malignant hyperthermia (MH)** can be fatal if not identified and treated quickly. It is triggered by certain anesthetic medications, most commonly inhalant medications and muscle relaxants. During the preoperative assessment, the RN circulator should ask the patient if they or any immediate family member has ever had a problem with anesthesia. A family or personal history of a "bad reaction to anesthesia" or statements such as "my uncle died in surgery, but no one knows why" indicate the need for further questioning by the anesthesia provider. Another indication of MH susceptibility is a history of a muscular or neuromuscular disorder (e.g., muscular dystrophy).

The MH reaction presents with a cascade of symptoms, including masseter muscle rigidity, hyperkalemia, and muscle breakdown (rhabdomyolysis). This results in a hypermetabolic reaction during which body heat can reach beyond life-sustaining temperatures (e.g., 106°F [41.1°C]), which can quickly lead to organ damage and death if not recognized and treated immediately. The first action if MH is suspected is for the anesthesia provider to discontinue the triggering agent. The scrubbed team should rapidly finish surgery or pack the surgical wound. Meanwhile, other perioperative team members should quickly obtain the MH cart and begin reconstituting dantrolene sodium (e.g., Dantrium, Ryanodex), the specific antidote for MH. Other team members institute prompt cooling measures: administer cold IV fluids; pack the patient's neck and head, groin, axilla, and any open cavities with ice; change the forced-air blanket to cool air; and provide supportive care, which is crucial for successful MH management. Patient stabilization is demonstrated by a decrease in end-tidal carbon dioxide (CO_2), muscle rigidity, and heart rate.

Intravenous dantrolene sodium is continued for at least twenty-four hours and titrated to alleviate symptoms. The surgeon and anesthesia provider inform the patient and family members of the event and counsel first-degree family members to undergo genetic testing for MH susceptibility. While rare, MH awareness and appropriate OR protocols remain critical for ensuring patient safety during surgery.

CLINICAL JUDGMENT MEASUREMENT MODEL

A Patient Experiencing Malignant Hyperthermia

Malignant hyperthermia is a rare, potentially life-threatening genetic predisposition to uncontrolled muscle breakdown (hypermetabolism) typically triggered by certain anesthetic medications, most commonly inhalant medications and muscle relaxants. This crisis can quickly cause organ damage and death if steps are not swiftly taken to correct it. The nurse can use the Clinical Judgment Measurement Model framework to assess for and respond to cases of MH.

1. Recognize cues: Identify the key signs and symptoms of MH (e.g., masseter muscle rigidity, metabolic acidosis, and extremely high temperature [e.g., 106°F {41.1°C}]).
2. Analyze cues: Interpret clinical data, including muscle contractions while under general anesthesia, rapidly elevating temperature, and patient and family history (e.g., problems with anesthesia; family member died during surgery, but the cause is not remembered; a history of a muscular or neuromuscular

disorder), to assess the severity of the condition and potential for complications.
3. Prioritize hypotheses: Determine the most immediate threats to patient health, such as the unsustainably high temperature. By prioritizing, the nurse can focus on providing immediate care interventions to prevent life-threatening complications and death.
4. Generate solutions: Develop a treatment plan: The RN circulator should immediately notify the charge nurse to obtain additional support while the anesthesia provider stops the flow of the triggering agent, the surgeon and scrubbed team stop surgery if at all possible (e.g., close or pack the wound), the RN circulator assigns another nurse to reconstitute and administer dantrolene sodium according to the anesthesia provider's orders, and other team members institute rapid cooling actions (e.g., providing the anesthesia provider cold IV fluids, pack the patient in ice).
5. Take action: Clearly communicate the plan and implement steps until the patient is stabilized. The nurse provides a handover report to the receiving PACU nurse of the patient's need for additional or higher-level care. The surgeon and anesthesia provider notify the patient's family members about the event and counsel them regarding genetic testing for MH susceptibility.
6. Evaluate outcomes: The PACU nurse takes over monitoring the patient's response to treatment, adjusting the plan as necessary based on the possibility of symptom reoccurrence.
7. Reflect on the process: Reflect on your clinical decision-making process, outcomes, and what could be improved if you encounter the situation again in the future. Think about the appropriateness and effectiveness of the interventions and the timeliness of the response.

Positioning Injuries

Positioning injuries are unintended complications that arise from patient positioning during surgery, which could lead to nerve damage, pressure sores, or compartment syndrome. The human body is a complex network of nerves, blood vessels, bones, muscles, and soft tissue, all susceptible to pressure and strain. During surgery, prolonged or improper positioning can compress these structures, leading to the following:

- Nerve damage: Nerve compression can cause tingling, numbness, weakness, and even paralysis in the affected area. Common sites of nerve injury include the arms, legs, and head.
- Pressure sores: Prolonged pressure on bony prominences like the heels, elbows, and back can disrupt blood flow and lead to tissue breakdown, forming painful and potentially infected sores.
- Compartment syndrome: In severe cases, prolonged pressure can lead to compartment syndrome, a life-threatening condition where blood flow is so restricted that tissue damage and even muscle death can occur.

Recognizing the potential for positioning injuries is crucial to preventing them. A proactive approach includes identifying patients at risk via a thorough physical examination and medical history review, selecting the most appropriate surgical position based on the procedure and patient factors, regularly checking for signs of pressure, and repositioning the patient as needed throughout the surgery.

The nurse will take steps to prevent positioning injuries, such as the following:

- Carefully padding and supporting bony prominences with positioning devices (e.g., gel pads) to distribute pressure evenly.
- Assessing skin integrity regularly and monitoring for signs of pressure, discoloration, or impaired circulation during long procedures as well as during the postoperative and recovery period.
- Repositioning the patient at regular intervals, adjusting positioning devices, and relieving pressure points as often and as much as possible.
- Ensuring adequate padding and support for the head, neck, and extremities as much as possible to maintain proper body alignment and avoid nerve compression given the positional requirements of the surgical procedure.
- Communicating concerns about positioning or potential pressure points to the surgical team as soon as possible and collaborating to identify solutions that ensure patient comfort and safety. Documenting steps taken to prevent or mitigate pressure injury should also be detailed and thorough to assist with recovery care planning.

31.4 Postoperative Phase

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe the phases of postoperative care
- Summarize the role of nurses in postoperative care
- Recognize special considerations when providing postoperative care

The phases of postoperative care start when the patient leaves the OR, arrives in the **postanesthesia care unit (PACU)**, previously known as the recovery room, and continues through to the completion of their recovery. Ongoing nursing management during postoperative care includes maintaining the patient's airway and ensuring cardiovascular and CNS stability. The PACU nurse must monitor the patient for signs of hypotension and shock, hemorrhage, hypertension, and arrhythmias. The nurse also must manage the patient's pain, resolve any problems with postoperative nausea and vomiting (PONV), and implement measures to prevent infection. Special considerations when providing postoperative care include considerations for older adult patients, patients with a higher weight, and patients who have developmental needs.

Stages and Phases of Postoperative Care

Postoperative recovery is broken down into three stages: immediate, intermediate, and convalescence.

- The **stage 1—immediate** postoperative stage is the period of time the patient is in the PACU, which may last a few hours or up to a day depending on the type of surgery and the patient's health and response to surgery and anesthesia. There are two phases of care in the immediate postoperative stage:
  - The **phase I recovery** stage is the immediate postanesthetic period during which the PACU nurse ensures the patient's full recovery from anesthesia and return of vital signs to near baseline.
  - The **phase II recovery** stage focuses on preparing patients for discharge from the facility, which includes providing education regarding the postoperative instructions and prescribed discharge medications.
- The **stage 2—intermediate** postoperative stage begins when the patient is transferred out of the PACU, whether it be to another location in the hospital, to the home, or to a convalescent facility. The focus of this stage is on wound management, physical therapy for regaining mobility, and ongoing pain management. This stage can range from days to weeks depending on the surgery and healing progress.
- The **stage 3—convalescence** postoperative stage begins at home, where the focus shifts to gradual rehabilitation and resumption of normal activities, following the surgeon's instructions for wound care, medication, and activity limitations. This stage can take weeks or months, varying greatly based on the individual.

Admission to the Postanesthesia Care Unit

Admission to the PACU marks a critical stage in the continuum of care, where seamless communication and comprehensive assessments play a pivotal role. The handover process involves the transfer of essential patient information from the surgical team to the postoperative care team. When surgery is complete, the RN circulator and anesthesia provider transport the patient to the PACU. The RN circulator performs a face-to-face, handover report directly to the PACU nurse. The handover report during admission to the PACU is crucial to ensure accurate and timely communication of critical details. This includes information about the surgical procedure, anesthesia administered, intraoperative events, and any immediate postoperative concerns. Effective communication during handover facilitates continuity of care, allowing the postoperative care team to promptly address the patient's needs and ensure a smooth transition from the OR to the recovery unit.

In addition to the handover process, medication review is a crucial component of admission to the PACU for ensuring appropriate postoperative pain management and addressing any medication-related concerns. Further, a **medication reconciliation** should occur before discharge. This comprehensive review of the patient's medication history should include medications being taken at home, including ones that the patient should have been taking but may not be, as well as any medications administered in the preoperative area, OR, and PACU. This medication review is compared with any newly prescribed medications with the goal of identifying potential problems and resolving discrepancies. The medication reconciliation process aligns with the goals of patient safety and is in line with recommendations from the American Society of Anesthesiologists and the American Society of PeriAnesthesia

Nurses.

LINK TO LEARNING

Review the statement of the American Society of PeriAnesthesia Nurses for medication management (https://openstax.org/r/77MedMgmtPreOP) during the perioperative period.

Family updates form an integral part of the recovery process, fostering transparency and emotional support. Keeping families informed about the patient's status, the outcome of the surgical procedure, and any postoperative care plans helps alleviate anxiety and enhances collaboration between healthcare providers and the patient's support system. Family-centered care is increasingly recognized as an essential aspect of the perioperative experience, contributing to improved patient satisfaction and outcomes.

Immediate Postoperative Assessment

The first moments after surgery, the patient is contending with the fading effects of anesthesia and taking the initial steps toward recovery. The immediate postoperative assessment holds immense significance for guiding the course of healing and identifying potential complications (Table 31.4).

Focus Area	Assessment Points
Airway	Clear airway, adequate oxygenation, signs of obstruction, respiratory rate and effort, hypoxia
Breathing	Rate, depth, rhythm of breaths, abnormal breath sounds, oxygen saturation levels
Circulation	Heart rate, blood pressure, capillary refill time, bleeding, compromised circulation to surgical site or extremities
Consciousness and neurological status	Level of consciousness, orientation, responsiveness, neurological function, signs of delirium or confusion
Pain	Pain assessment using appropriate scales, location, intensity, characteristics of postoperative pain
Temperature	Monitoring for hypothermia, hyperthermia, malignant hyperthermia
Surgical site	Redness, swelling, abnormal discharge, infection prevention, wound healing, intact dressings, presence of drains, amount of drainage from wound and/or drain
Gastrointestinal function	Bowel sounds, postoperative nausea and vomiting, tolerance of oral intake
Urinary function	Urinary retention, urine output, color, discomfort indicating bladder distension
Psychosocial status	Emotional state, anxiety, support and coping strategies, open therapeutic communication

TABLE 31.4 Immediate Postoperative Assessment

Effective communication plays a crucial role in this process. The patient's voice becomes an invaluable tool, providing insights into their experience and any emerging concerns. Open communication between the patient, nurses, and physicians fosters a collaborative environment, ensuring timely and appropriate interventions. Based on the findings, the healthcare team determines the appropriate level of care, be it continued monitoring in the PACU, transfer to a hospital room or to a rehabilitation or skilled nursing facility, or discharge home (American Society of

Anesthesiologists, n.d.).

Determine Readiness for Discharge

Determining readiness for discharge after a surgical procedure is a critical aspect of postoperative care, ensuring that patients can safely transition from the hospital to home and continue their recovery with minimal complications. A comprehensive assessment that considers various factors is crucial in making informed decisions regarding discharge. The nurse should assess these key criteria (Alper et al., 2023):

- Vital signs: The patient should have stable vital signs including heart rate, blood pressure, respiratory rate, temperature, and oxygen saturation levels.
- Pain management: Effective pain control demonstrates understanding of the pain management plan (e.g., oral medications, nonpharmacological strategies).
- Gastrointestinal function: The patient should have return of typical bowel function, tolerance of oral intake, and ability to maintain hydration.
- Urinary function: The patient should be able to void independently and maintain adequate urine output and does not exhibit urinary retention or discomfort.
- Surgical site: The patient's surgical site should show no signs of infection, dressings should be intact, and there should be no wound complications or issues with skin integrity (e.g., dehiscence, evisceration) noted.
- Mobility and activity: The patient should be mobile, ambulating with minimal dizziness, and demonstrate understanding of activity restrictions during recovery.
- Respiratory status: The patient should demonstrate adequate respiratory function without distress and effective coughing and deep breathing.
- Psychosocial and mental well-being: The patient should display mental clarity, signs of coping with recovery, and adequate social support.
- Medication management: The patient should be provided education on prescribed medications and side effects and ability to self-administer (or a caregiver who can administer) medications.
- Follow-up plan: Postdischarge follow-up appointments are scheduled and instructions have been provided regarding when to call the provider or seek care for questions or concerns before a follow-up appointment.
- Discharge instructions: Patient and caregivers demonstrate understanding of postoperative care instructions, such as wound care, activity, and dietary restrictions if required.
- Transportation arrangements: The patient has safe transportation home and availability of assistance for the first twenty-four to forty-eight hours.
- Home environment: The patient has a safe home environment for recovery with necessary medical supplies and equipment.
- Patient education: The patient or caregiver has knowledge of postoperative wound care, dietary recommendations including fluid requirements, therapeutic activity, pain management, signs of complications, and clear understanding of when to contact the provider or seek medical care if concerns emerge during recovery.
- Help from caregiver: The patient has a responsible support person available who has been educated on patient care needs.
- Emotional and psychological well-being: The patient shows emotional readiness for discharge and connection to appropriate support services.

The nurse also needs to consider the broader spectrum of postdischarge care options beyond sending a patient home. If patients are being discharged to another level of care or even temporarily to a skilled nursing facility, the nurse will need to collaborate with other professionals to ensure that the patient's transition to the next phase of recovery is smooth. Considerations for the nurse include the following:

- Case management and social workers: These professionals will assess the patient's social, emotional, and financial needs and then develop a comprehensive discharge plan. They coordinate with the patient's physician, other healthcare providers, and the patient's family to ensure that the plan addresses all aspects of the patient's recovery, including transportation, medical equipment needs, and follow-up care. They also act as liaisons that connect patients with community resources and ongoing support.
- Home health services: Patients may be returning home but still require medical care, in which case, home health services can offer a continuum of care. Home health includes nursing services, physical therapy,

occupational therapy, and other rehabilitative services that are delivered at the patient's home. This option may suit a patient who is well enough to leave the hospital but would benefit from continued healthcare support at home.
- Rehabilitation facilities: Patients who require intensive rehabilitation before they can safely return home are often discharged to a rehabilitation facility. They will receive focused therapy and care that helps restore functional independence and mobility. This level of care is often necessary after orthopedic surgeries or neurological procedures.
- Skilled nursing facilities (SNFs): Some patients, especially older adults and those with several comorbidities, may need extended care services at an SNF. In this setting, the patient can receive both medical care as well as help with daily living activities. An SNF can be an important "bridge" between the hospital and home or, in some cases, a transition to long-term care.

The nurse should carefully consider the patient's needs in the discharge planning process to ensure patient satisfaction and recovery and optimize resource utilization and decrease the chances of hospital readmission. Patients have unique needs when they leave the hospital, and personalized care planning that is comprehensive and takes a coordinated approach is key to making sure the patient gets the appropriate level of care and support necessary for their recovery.

Ongoing Nursing Management during Postoperative Care

Ongoing nursing management is crucial during postoperative recovery. This includes maintaining the patient's airway; monitoring for changes in cardiovascular and CNS status; and treating hypotension, shock, hemorrhage, hypertension, or arrhythmias if they should occur. The PACU nurse is responsible for managing pain, preventing PONV, and implementing steps to prevent infection. Continuous assessment, effective communication, and proactive interventions to promote optimal outcomes during this critical period can ensure early identification and prompt management of any complications that may arise postoperatively.

Maintaining the Patient's Airway

Maintaining a patent airway is a critical component of postoperative care, ensuring that patients can breathe effectively and minimizing the risk of respiratory complications. A significant concern following surgery is **atelectasis**, the partial or complete collapse of one or more areas of the lungs. Postoperatively, patients often experience reduced respiratory effort due to the effects of anesthesia and pain medications, which can lead to shallow breathing and inadequate lung expansion. This diminished effort, combined with immobility and discomfort that limit deep breathing and effective coughing, increases the risk of atelectasis. Additionally, the inflammatory response triggered by surgery can cause the accumulation of fluid or mucus in the airways, obstructing proper lung inflation.

Continuous monitoring of respiratory parameters (e.g., respiratory rate, oxygen saturation) is important to promptly detect any signs of airway compromise in the postoperative period. The nurse must carefully document the findings, including baseline levels, significant variations or changes, and any interventions required. The nurse must document according to facility protocols and should always initial and date/time their assessments when added to the patient's chart.

REAL RN STORIES

An Organized Room Saves a Life

Name: Matt, RN
Clinical setting: Postanesthesia care unit at an urban hospital
Years in practice: 5
Facility location: Chicago, Illinois

I was working an evening shift in the PACU a few months ago and had just finished my initial assessment on Mrs. Frank, a 68-year-old patient who had undergone major abdominal surgery earlier in the day. Her vital signs were stable, and she seemed to be recovering well from the anesthesia. I was just about to step away from the bed to document my assessment findings when I heard a faint moan from the bed.

Mrs. Frank's eyes were full of alarm, and I noted that her oxygen saturation levels were rapidly dropping. I immediately recognized the signs of airway compromise and raced back to her bedside.

First, I positioned Mrs. Frank upright to help her airway stay open, then grabbed the suction equipment that I had ensured was set up and easily within reach at the beginning of my shift. Using the suction catheter, I was able to clear the thick secretions that were blocking her airway, and she was able to start breathing easily again. I administered supplemental oxygen and monitored her to make sure that her oxygen saturation levels were improving.

As I was debriefing with myself and reflecting on the situation, I was thankful that the suction equipment had been available at the bedside. I was glad that diligently preparing the room to make sure that everything had a place and was in its place was an ingrained habit that I had learned early in my career. It's easy to overlook the importance of having a properly organized patient room, but in those moments when every second counts, being able to get what you need without delay can make a huge difference to a patient.

Nurses are crucial in assessing and addressing airway challenges, and their competence in using appropriate interventions is extremely important. To ensure optimal respiratory function in the postoperative period, nurses must prioritize maintaining a patient's airway patency through proper positioning, suctioning as needed, and monitoring respiratory rate. Elevating the head of the bed (if appropriate) and encouraging early ambulation can further promote a patient's recovery. When necessary, respiratory support devices like continuous positive airway pressure or bilevel positive airway pressure devices should be considered, and nurses must prepare for emergencies by familiarizing themselves with airway management procedures and equipment.

Ensuring Cardiovascular Stability

Cardiovascular stability is a crucial aspect of postoperative care. Nurses should understand cardiovascular parameters and early detection of complications (e.g., arrhythmias, hemodynamic instability). Nurses should be prepared to implement prompt interventions (e.g., administering prescribed medications, titrating vasoactive medications) when cardiovascular instability occurs. A multidisciplinary approach, involving nurses, physicians, and other relevant healthcare providers, is vital for timely decision-making and intervention in response to changes in the patient's cardiovascular status.

Monitoring Central Nervous System Status

Monitoring the CNS status during postoperative care is essential to ensure patient safety and detect any neurological complications early in the recovery process. Nurses should conduct regular neurological assessments (e.g., level of consciousness, pupillary response, motor function) to promptly identify any signs of CNS dysfunction.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Safety: When and How to Perform a Central Nervous System Examination

Performing a CNS examination postoperatively is critical for detecting early signs of neurological deterioration. The assessment gives the nurse the information they need to initiate interventions and prevent complications. Following are several circumstances in which a CNS examination would be performed for a patient after surgery:

- baseline assessment: at admission to the preoperative area before surgery to establish a baseline for the patient's neurological function
- postoperatively: to monitor for neurological changes after surgery, particularly after surgery involving the CNS
- change in neurological status: any reported or observed change in a patient's level of consciousness, motor function, sensory function, or cognitive ability
- head injury: to monitor for complications in a patient with a traumatic brain injury (TBI)
- neurological disorders: ongoing monitoring of patients with previously diagnosed neurological conditions

The components of a CNS examination vary on the patient's needs and the facility where surgery is being performed, and whether the nurse needs to perform a more comprehensive or focused assessment. In general, the nurse will assess the following:

- level of consciousness: using a standardized scale (e.g., the Glasgow Coma Scale [GCS])
- pupillary response: size, shape, reactivity to light, and accommodation
- motor function: muscle strength, coordination, and the presence of abnormal movements
- sensory function: sensation to light touch, pain, temperature, and vibration
- cranial nerves: function of the twelve cranial nerves
- reflexes: deep tendon reflexes, other reflexes
- coordination and gait: balance, coordination, and gait (if patient is ambulatory)

Proper documentation of the findings facilitates ongoing monitoring and improved continuity of care, which are key to patient safety in the postoperative stage.

Recognizing changes in cognitive function or motor abilities is paramount, as is collaborating with other healthcare providers to address any emerging issues promptly. This collaborative approach is crucial for preventing and managing complications related to the CNS. Additionally, educating patients and their caregivers on what to observe and report helps in the early detection of neurological complications, facilitating timely intervention.

Preventing Hypotension and Shock

Nurses working in the PACU are eagle-eyed observers, constantly attuned to the subtle shifts in a patient's physiology. Through regular blood pressure checks, pulse oximetry monitoring, and meticulous fluid balance charting, they can detect early signs of impending hypotension (e.g., altered consciousness; cool, clammy skin). Normal blood pressure is considered 120/80 mm Hg. Nurses are alert to a blood pressure below 90/60 mm Hg, which might be a concern depending on the patient's intraoperative course and status of recovery.

Identifying the cause of postoperative hypotension is fundamental in treatment. Typical causes of postoperative hypotension include intraoperative anesthetic medications that were administered or hypovolemia as a result of severe blood or fluid loss. Preventive measures include careful monitoring of fluid balance, administration of fluids or blood products as needed, and appropriate management of anesthetic medications. Fluid management begins by accurately monitoring intake and output. This guides the administration of IV fluids, ensuring enough circulating volume throughout the body. Early mobilization and pain management play crucial roles as well, because stagnant patients and unchecked pain can trigger blood vessel dilation, which worsens hypotension.

Intervening in Hemorrhage

In the aftermath of surgery, during which the body mends itself from the incisions, preventing hemorrhage is especially important. From the moment the patient arrives in the PACU, the PACU nurse begins observing and monitoring the patient's vital signs for any hint of trouble. Blood pressure, heart rate, and oxygen saturation can give clues to bleeding. Frequent wound checks are vital for identifying swelling, redness, or drainage that can reveal bleeding (e.g., pooling of blood under the patient).

After determining that a patient may be hemorrhaging, the PACU nurse prepares to intervene. The nurse notifies the charge nurse who reaches out to the surgeon and anesthesia provider while the PACU nurse remains with the patient. The nurse prepares to administer additional fluids or blood products and anticipates a return to the OR.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues and Take Action: Postoperative Internal Hemorrhage

Mrs. Yen, a 54-year-old postoperative patient, has been in the PACU for thirty minutes after having undergone an abdominal hysterectomy. Based on your assessment findings, you use the Clinical Judgment Measurement Model to analyze and take action to provide care for the patient.

Recognize Cues

- restlessness, slight agitation
- increased heart rate compared to the patient's baseline
- blood pressure low to normal and dropping
- pale, cool skin
- surgical dressing or drains with moderate amount of fresh, bright red blood

- tight abdomen

Analyze Cues

- You recognize the cues in your assessment as potential signs of early hemorrhage.
- Based on your knowledge of postoperative complications, your experience as a nurse, and what you know about abdominal surgery, you analyze the cues to see which ones may have important implications for the patient's care.

Prioritize Hypotheses

- Your priority hypothesis is that Mrs. Yen could be experiencing internal bleeding at the surgical site. You know that immediate action is required, so you will use this hypothesis to come up with a plan.

Generate Solutions

- Notify the surgeon immediately.
- Closely monitor vital signs.
- Prepare for potential interventions (e.g., blood tests, fluids, return to OR).

Take Action

- You contact the surgeon and communicate your assessment findings clearly and efficiently.
- You continue to monitor the patient's vital signs.
- You prepare for additional interventions as ordered by the surgeon.

Evaluate Outcomes

- The surgeon arrives and assesses Mrs. Yen and confirms a bleed. The patient will return to the OR for treatment.
- As you reflect on your role in the patient's care, you understand that your recognition of cues, analysis, and actions may have prevented more serious complications for the patient.

The PACU nurse implements measures to help prevent hemorrhage by ensuring postoperative pain is appropriately managed. By maintaining optimal pain control, the nurse helps stabilize the patient, enabling the patient to participate in early mobility and pulmonary hygiene exercises that are vital for preventing blood clots and other postoperative issues. The nurse provides a pillow or blanket for the patient to press on the abdomen when performing pulmonary hygiene exercises (e.g., turn, cough, deep breathing, use of an incentive spirometer). While necessary to help prevent postoperative pulmonary complications, excessive coughing, particularly without splinting, may dislodge clots. Early mobilization, getting patients up and moving, promotes blood flow and prevents complications of inactivity, while meticulous attention to fluid balance ensures optimal blood volume.

Treating Hypertension and Arrhythmias

Hypertension and arrhythmias during postoperative recovery are critical issues that require careful monitoring and management to prevent adverse outcomes. Nurses should watch subtle shifts in a patient's physiology. Regular blood pressure checks, pulse oximetry monitoring, and meticulous ECG interpretations are potential clues to cardiovascular complications. Increasing blood pressure readings and changes in consciousness may be signs of distress; variations in pulse regularity may indicate arrhythmias.

Fluid management with accurate intake and output monitoring informs the need for IV fluid administration to ensure optimal blood volume without taxing the heart. Postoperative pain can trigger hypertensive episodes, so pain management is critical. Early mobilization encouraging movement aids in venous return, and maintaining electrolyte balance ensures the electrical stability of the heart.

Managing Pain

Effective pain management during postoperative care is crucial for ensuring patient comfort, promoting recovery, and minimizing complications associated with inadequate pain control. Patients in phase I of recovery may be unable to tell the nurse that pain is becoming intolerable. The PACU nurse watches for early signs of unmanaged pain (e.g., grimacing, guarding, sighing, clenched fists, furrowed brows, changes in vital signs).

Intravenous pain medications are often used in the immediate postoperative period because they provide fast relief and can be used before the patient is able to tolerate food and fluids. Titration of pain medicines based on the patient's individual response is important to prevent overly sedating the patient, which can result in respiratory depression. Even with regular pain medication administration, patients can have breakthrough pain. It is important to have a plan to remedy the situation quickly. This may include as-needed (PRN) or shorter-acting medications until a more effective schedule can be achieved.

Intravenous pain medications may be delivered via **patient-controlled analgesia (PCA)** for postoperative pain management. This method allows patients to self-administer small doses of IV pain medication within safe, preprogrammed limits that are based on patient-specific factors (e.g., age, health). Nurses must educate patients on how to use the PCA device and about the safety features that help prevent overdose. The nurse closely monitors the PCA device for safety and effectiveness and watches for potential side effects (e.g., oversedation, respiratory depression), especially in the early stages of patient use. Regular assessment of pain levels and PCA usage patterns informs the nurse on needed adjustments to the pain management plan and helps the nurse evaluate the effectiveness of the intervention (Pastino & Lakara, 2023).

As the patient stabilizes and can tolerate oral intake, the nurse transitions the patient to oral pain medications. Oral medications are a key step in preparing for discharge because these are the pain relief medications the patient will be self-administering when they are at home. However, the nurse needs to ensure that the transition is carefully managed to maintain adequate pain control.

The nurse should also discuss nonpharmacological pain management strategies with the patient, which will be integral to their long-term pain management. These include positioning and splinting techniques; deep breathing, meditation, guided imagery, and self-hypnosis exercises; distraction (e.g., listening to music, watching TV) techniques; using heat or ice therapy safely; and offering therapeutic touch. Nurses monitor the effectiveness of pain management interventions and the side effects of medications and potential interactions.

The nurse works with other professionals involved in the patient's care (e.g., physical therapists) to schedule pain medications strategically. Ideally, the medications should provide optimal pain relief during activities that promote mobilization and recovery. The nurse communicates concerns to physicians, advocating for adjustments or additional interventions when needed.

Treating Postoperative Nausea and Vomiting

Postoperative nausea and vomiting affects roughly 30 percent of patients (Gan et al., 2020). This distressing combination of gagging, dry heaves, and full-blown emesis not only disrupts comfort but also carries potential complications like dehydration, electrolyte imbalances, and aspiration pneumonia. It is especially crucial to prevent PONV after abdominal surgery because the act of retching and vomiting can stress the abdominal wall and might lead to wound dehiscence. Understanding the complex mechanisms and the crucial role of nurses in managing PONV is essential.

Contributing factors include the type and duration of surgery, patient-specific characteristics (e.g., female gender, history of PONV episodes), and the influence of anesthetic agents. The underlying pathways involve the CNS and the gastrointestinal tract, triggered by stimuli like opioid medication administration, and inner ear disturbances.

Risk assessment tools like the Apfel score help identify patients at high risk for PONV, allowing for targeted interventions. Antiemetics also play a crucial role. Serotonin (5-HT3) receptor antagonists (ondansetron [Zofran]), glucocorticoids (dexamethasone [Decadron]), and NK1 receptor antagonists (aprepitant [Emend]) are the first line of defense, often administered preemptively. Nonpharmacological interventions like acupressure applied to the wrists, ginger, and aromatherapy with peppermint offer a multimodal, patient-centered approach.

Preventing Infection

Preventing infections is especially important for postoperative patients. Nurses are responsible for consistently adhering to infection prevention interventions. The first line of defense is meticulous hand hygiene. Nurses must adhere to handwashing protocols before, during, and after every patient interaction. This simple yet powerful act significantly reduces the risk of transmitting pathogens, thus helping prevent infections.

Monitoring for potential surgical infections includes performing regular wound checks and astutely observing for redness, swelling, or drainage; monitoring vital signs for spikes in temperature; and reviewing laboratory results

(e.g., white blood cell count). Early detection allows for prompt intervention, preventing minor issues from escalating into serious complications.

Proper care of the surgical wound is another key step for infection prevention. Proper catheter care for patients with urinary retention, ensuring optimal blood sugar control for patients with diabetes, and promoting early mobilization to improve circulation all contribute to a hostile environment for pathogens. Additionally, administering appropriate prophylactic antibiotics further bolsters the defenses.

Before discharge, nurses must provide clear, actionable instructions on wound care that emphasize the importance of the following:

- Keeping the wound site dry: Patients need to avoid getting the incision site wet for a specified period, as directed by the surgeon.
- Leaving the dressing intact: The initial dressing should be left in place until the follow-up appointment or as otherwise instructed by the surgeon.
- Observing the wound: Patients need to know the signs of infection (e.g., redness, swelling, increasing pain, drainage, fever). They need to be told when and how to contact the surgeon to report any signs of infection.

Special Considerations When Providing Postoperative Care

Postoperative care demands a nuanced and tailored approach to accommodate diverse patient populations and unique healthcare needs. Special considerations in postoperative care involve recognizing and addressing factors that may influence recovery and outcomes, extending beyond the standard protocols. For instance, older adults may have distinct physiological and cognitive challenges that require specialized attention (e.g., management of comorbidities, cognitive impairment, polypharmacy). Additionally, the American Association of Critical-Care Nurses (AACN, n.d.) Clinical Practice Guidelines highlight the necessity of specialized care during the postoperative stage for patients with bariatric considerations (e.g., wound care, mobility, respiratory support). Developmental considerations in postoperative care are paramount, particularly when caring for pediatric patients whose unique developmental stages require tailored approaches to recovery.

Gerontological Considerations

The biological, psychological, and cultural science of old age and the aging process of adults throughout their lives is known as **gerontology**. On the other hand, **geriatrics** is the study of the diseases of older adults. Providing postoperative care to older adults requires a nuanced approach that acknowledges the unique challenges and strengths of the older adult population. Nurses play a crucial role in navigating age-related changes and tailoring interventions to ensure a smooth and successful recovery journey.

Older adult patients often have decreased organ function, slower wound healing, and altered pain perception compared to younger individuals. These factors necessitate adjustments in medication dosages, monitoring protocols, and pain management strategies. Cognitive decline and delirium are more prevalent in older adults after surgery, adversely affecting communication, medication adherence, and the overall recovery progress. Management of comorbidities and **polypharmacy** (occurs when a person is on many medications, particularly on numerous medications for the same condition) can be challenging.

Nurses must employ patient-centered communication, simplify instructions, and provide consistent reassurance to address these challenges. Additionally, preexisting limitations in mobility and independence can be exacerbated by surgery, increasing the risk of falls and complications. Early mobilization and rehabilitation become crucial interventions to maintain function and prevent deconditioning. By embracing these gerontological considerations and tailoring postoperative care plans, nurses can empower older adult patients to navigate the recovery journey successfully. Their vigilance, adaptability, and unwavering dedication pave the way for a positive and dignified healing experience for older adults.

Bariatric Considerations

Patients with a higher weight require customized interventions, considering factors such as wound care, mobility, and respiratory support, to address the unique challenges associated with obesity. Weight-loss surgery, or **bariatric surgery**, is a category of surgical procedures of the stomach and intestines to induce weight loss. Nurses must employ patient-centered communication and instructions and provide consistent reassurance to address these challenges. Although offering significant benefits for weight management and overall health, bariatric surgery

presents unique challenges in the postoperative period. The nurse should be informed about the various types of bariatric procedures, including the following:

- Roux-en-Y gastric bypass: This method creates a small stomach pouch and reroutes the small intestine, effectively restricting food intake and reducing nutrient absorption; considered the "gold standard" of bariatric surgery.
- Sleeve gastrectomy: This is a restrictive procedure where most of the stomach is removed, and a narrow "sleeve" remains that limits the amount of food a patient can consume.
- Adjustable gastric band: In this procedure, an inflatable, adjustable band is placed around the upper part of the stomach, making a small pouch that effectively restricts food intake.
- Biliopancreatic diversion with duodenal switch (BPD/DS): This is a complex procedure to create a small stomach sleeve and bypass most of the small intestine.

Nurses play a crucial role in ensuring a smooth and successful recovery for these patients, necessitating a nuanced approach that accounts for the specific physiological and psychological changes following surgery (Amiri et al., 2019). Bariatric procedures often involve rerouting the digestive tract, leading to altered food absorption and nutrient deficiencies. Therefore, nurses need to monitor for and address potential nutritional deficiencies, particularly iron, vitamin D, and calcium. Some patients experience **dumping syndrome** after gastric bypass surgery, when food gets "dumped" directly from the stomach pouch into the small intestine too rapidly without being digested, causing nausea, vomiting, abdominal cramping, and diarrhea. Nurses play a crucial role in educating patients on dietary modifications and proper food intake to manage dumping syndrome.

By understanding the unique challenges of bariatric surgery and implementing these tailored care considerations, nurses can help patients navigate the postoperative journey successfully. Their knowledge, empathy, and holistic approach play a vital role in ensuring long-term weight management, improved health, and a positive quality of life for bariatric patients.

Developmental Considerations

Developmental considerations in postoperative care are paramount, particularly when caring for pediatric patients whose unique developmental stages require tailored approaches to recovery. Their developing bodies, cognitive abilities, and emotional needs necessitate a nuanced approach that goes beyond simply applying adult-focused protocols:

- Physiological differences: Children are not just "small adults." They have smaller body mass, different medication metabolism, and increased vulnerability to pain, making medication doses and pain management strategies distinct from adults.
- Cognitive development: Younger children may struggle with understanding their situation, leading to anxiety and fear. Nurses need to adapt communication, using simple language, visuals, and age-appropriate explanations to reduce distress.
- Emotional vulnerability: Separation anxiety, fear of pain, and difficulty expressing emotions are common in children during the postoperative period. Nurses need to be empathetic when providing comfort, reassurance, and emotional support to the patient and parents throughout the recovery process.

PATIENT CONVERSATIONS

Pediatric Patient Undergoing Surgery

Scenario: The nurse is caring for 6-year-old patient Stella, who just had a tonsillectomy. The patient's mother, father, and 8-year-old brother Joey are in the room. The nurse is preparing to talk to them about what they need to know before discharge.

Nurse: Hi, Stella, are you ready to go home?

Patient: (looks at mother, whispering) Um . . .

Patient's mother: She doesn't want to talk because she's afraid it will hurt more.

Nurse: [To Stella] Your throat will be sore for a while as it's healing, and you might not feel like talking much. That's okay.

Patient's mother: Joey thought she could use an app to sort of talk for her if she's not feeling up to it? Do you think that will help?

Nurse: The wonders of technology, right? That's smart thinking, Joey. You must be a good older brother!

Patient's father: But she shouldn't be totally silent, right? Won't it hurt her voice if she doesn't use it at all?

Nurse: It's not really a use it or lose it situation, because her voice will need a few weeks to start feeling back to normal. It's important that she pays attention to her body and doesn't overuse it, which could delay the healing process.

Patient's mother: I'm worried that she won't eat because she's afraid of pain.

Nurse: That's a common concern. How stocked up are you on popsicles and ice cream? (Stella perks up) Do you like ice cream and popsicles, Stella?

Patient: (nodding and whispering) Uh-uh.

Nurse: Foods and drinks that are cool will feel good in your throat. You need to eat and drink every day to help your throat get better. Just be sure to avoid red popsicles and juice, which may make it challenging to distinguish between the red dye and bleeding from the incision site.

Patient's brother: I told her she can't have Doritos and she got mad at me.

Nurse: Well, you're right about one thing; chips are a pretty crunchy, sharp, and salty snack. They might be more irritating than something smooth, cool, and soft. But Stella, you don't have to give up Doritos forever. You just need to take a break while your throat is healing.

Patient's mother: Her grandmother said she needs to do saltwater gargles, but is that just an old wives' tale?

Nurse: Believe it or not, there is some truth in that old remedy! But we'll see what the surgeon says. Some kids have a hard time gargling, so they just end up swallowing it. Usually, the surgeon will want you to avoid anything that might disrupt the healing tissues for at least a week.

[To Stella] Stella, it's very important that you take it easy while your throat is still sore. I want you to think about what kinds of things you like to do at home to relax. Do you like to read books or watch favorite movies? Or color?

Patient: (nodding and whispering) Color.

Nurse: Coloring would be a great activity to do to rest and yet keep busy when you get home. And you might feel like taking more naps. That's okay, too. Sleep will help your body heal.

Patient's father: Can we just give her the liquid kid Tylenol? She doesn't have to swallow a pill right?

Nurse: We'll check on the surgeon's prescriptions. Liquid Tylenol is usually fine, especially if she's had it before. But if it's not enough to control her pain, the surgeon might prescribe a liquid pain medication or a tablet. You can often cut these up to make them easier to swallow, or mash the tablet and put it in a food like applesauce to make it easier to swallow.

Patient's mother: Oh, we've got plenty of applesauce. We stocked up!

Nurse: That's great.

[To Stella] I think you're ready to go home, Stella. But if you feel worried or are hurting, it's important to tell your parents. They can give us a call, and we'll come up with a plan to help, okay?

Patient: (nodding and whispering) Okay.

Patient's mother: Thank you. We're a little nervous!

Nurse: It sounds like you've planned ahead and have some great teamwork going on. Of course, we're here to help if

you have any questions after you're home.

Developmentally focused postoperative care for children prioritizes age-specific communication and uses simple language and play-based interventions to alleviate anxiety and improve understanding of the surgical experience and recovery. Active parental involvement is also important. The nurse can empower caregivers to participate in care and provide emotional support. Encouraging age-appropriate activity and addressing specific developmental needs, such as skin-to-skin contact for infants or distraction techniques for older children, promotes a recovery plan that considers the child's unique emotional and physical needs.

Summary

31.1 Surgical Concepts

Surgical procedures are classified as emergent, urgent, expedited (scheduled), and elective. Emergent surgeries are performed immediately to save a life, limb, or an organ. Urgent surgeries are performed for a condition with acute onset or clinical deterioration of life, limb, or organ survival. Expedited surgeries are when a patient is stable but requires early intervention for a condition. Elective surgeries are scheduled in advance and are not performed to save a life.

During the last couple of decades, surgical advancements have been made exponentially to include robotic surgery, telesurgery, surgical uses of AI, Multi-Angle Rear-Viewing Endoscopic tooL (MARVEL), and 3-D printing. In many way, these advancements have made surgery safer and more available to a greater number of people. However, there are risks, and many are exorbitantly expensive and therefore prohibitive.

There are several types of anesthesia used in medical procedures and surgeries: general anesthesia, MAC/moderate sedation, regional anesthesia, and local anesthesia. Each type of anesthesia has advantages, disadvantages, potential side effects, and appropriate applications based on the procedure to be performed, patient factors, and required depth of anesthesia. The nurse must be aware of how anesthesia providers evaluate and monitor patients to ensure safe and effective anesthetic management for procedures.

31.2 Preoperative Phase

The preoperative stage encompasses a broad spectrum of activities aimed at preparing the patient for surgery. The nurse is tasked with key steps, like conducting detailed medical and medication reviews to identify any factors that might influence surgical outcomes or anesthesia plans. This stage also involves the nurse providing patient education, including managing expectations regarding postoperative pain and recovery as well as discussing preoperative fasting and medication adjustments. The nurse also assesses the patient's nutritional status, psychological well-being, and any cultural or religious considerations that may affect care. The nurse then coordinates with the surgical team to ensure all preoperative documentation, including informed consents and advance directives, is collected and managed. All of the data come together as part of a comprehensive pain management plan that incorporates both pharmacological and nonpharmacological strategies tailored to the patient's needs and preferences.

The perioperative nurse acts as an advocate for the patient, ensuring that their cultural, spiritual, and emotional needs are respected and integrated into the care plan. By establishing a rapport with the patient and their family, the nurse helps by alleviating anxiety, addressing concerns, and facilitating a smooth transition to the intraoperative stage.

All of the nurse's tasks in the preoperative stage are integral to patient safety, optimizing surgical outcomes and enhancing the overall patient experience. Taking a holistic approach to preoperative preparation demonstrates the importance of thoroughness, empathy, and collaboration in achieving successful surgical outcomes for patients.

31.3 Intraoperative Phase

The intraoperative stage is the core of the surgical experience, where all the planning and preparation come into play. Successful surgery ultimately comes down to the effective collaboration of a multidisciplinary team, each member with a distinct role, who can carry out their work with skill and diligence.

Patient safety during surgery is the priority, and the nurse's role is vital in realizing that goal. The patient is at their most vulnerable when they are unconscious and completely reliant on medical science and the key players in the OR. The nurse, then, must act as the patient's eyes and ears, ensuring that the patient has a voice even when they are unable to speak for themselves. Understanding and mitigating potential complications like anesthesia awareness, malignant hyperthermia, intraoperative vomiting and aspiration, and positioning injuries are all aspects of providing competent care. Nurses must be able to recognize these risks, advocate for the patient, and work with the team to implement appropriate interventions—which, at times, may be life-and-death decisions.

31.4 Postoperative Phase

The postoperative stage is focused on promoting healing, preventing complications, and facilitating a smooth transition back to normal routines. The role of the nurse is to provide vigilant monitoring, advocate for the patient, coordinate care, and educate patients to empower them in their own recovery.

There are distinct stages of postoperative recovery including the immediate (phase I and phase II), intermediate, and convalescent stages of recovery. The key responsibilities of nurses throughout these stages are assessing vital signs and system functioning, managing pain, preventing infection, encouraging mobility, and preparing the patient for discharge and long-term recovery.

The nurse must also factor in special considerations for providing care to patients after surgical procedures, such as pain medication management, discharge planning, specific requirements for bariatric surgery patients, and the unique developmental needs of geriatric and pediatric patients. The nurse must be equipped to recognize potential complications, develop a plan, intervene effectively, and provide support for a patient's ongoing recovery.

Key Terms

3-D printing manufacturing process that creates three-dimensional (3-D) objects from digital files
amnesia temporary or permanent loss of memory
analgesia pain relief so the patient does not respond to painful stimuli during surgery
anesthesia awareness the experience of consciousness and even pain during surgery with possible recall of events while under general anesthesia
anesthesia provider a physician (anesthesiologist) or advanced practice RN (certified RN anesthetist [CRNA]) who is specialized in administering anesthesia and managing perioperative care
antisialagogue medication (e.g., glycopyrrolate) that reduces salivation, minimizing the risk of aspiration during surgery
anxiolytic a type of drug that reduces anxiety
appendectomy surgical removal of an appendix
artificial intelligence (AI) a robot or other computer system designed to perform tasks that typically require human intelligence
atelectasis partial or complete collapse of lung tissue affecting gas exchange
bariatric surgery surgical procedures on the stomach or intestines to induce weight loss
bowel preparation (bowel prep) a medical procedure that involves the cleansing of the gastrointestinal tract, particularly the colon, in preparation for certain medical procedures or surgeries
cognitive awareness a level of attention that results in a positive presence by being consciously aware of all the components in an interaction
dumping syndrome after gastric bypass surgery, food gets "dumped" directly from the stomach pouch into the small intestine too rapidly without being digested, causing nausea, vomiting and abdominal cramping, and diarrhea
elective surgery a nonemergent surgical procedure scheduled in advance to repair injuries or enhance appearance and function
electrosurgery a technique or device that uses electricity to stop bleeding by burning tissue
emergent surgery surgery that is performed without delay to address critical situations such as potentially life-, limb-, or organ-threatening conditions
expedited (scheduled) surgery a planned, nonemergency surgical procedure for a chronic or progressive condition that, while not life-threatening in the immediate term, can lead to significant complications and impair quality of life if left untreated
general anesthesia a potent cocktail of IV and inhalation medications that induce a state of controlled, reversible unconsciousness, amnesia, and analgesia with or without reversible muscle paralysis; the patient remains unarousable to painful stimuli
geriatrics the study of the diseases of older adults
gerontology the biological, psychological, and cultural science of old age and the aging process of adults throughout their lives
haptic interface a type of human-computer interaction technology that is created by using force feedback via movement of a limb or the head to simulate bodily tactile sensations and movements, which can mimic the feel

of touching natural objects

intraoperative stage the period during a surgical procedure from arrival in the OR to closure and transfer to the PACU

intubation insertion of an endotracheal tube into the mouth or nose and into the trachea to maintain an open airway, support breathing and ventilation, and provide oxygen delivery

laparotomy a surgical procedure where a large incision is made in the abdomen to expose the abdominal cavity

laser concentrated light beam used in surgery for cutting or cauterizing tissue, enabling minimally invasive procedures with greater precision and reduced blood loss

local anesthesia numbing of a small, localized area through topical or injected anesthetic medications

malignant hyperthermia (MH) a rare, life-threatening inherited, hypermetabolic disorder of skeletal muscles in reaction to certain anesthesia medications or a history of a muscular or neuromuscular disorder

medication reconciliation a comprehensive review of the patient's medication history: medications being taken at home, including ones that the patient should have been taking but may not be, and any medications administered in the preoperative area, OR, and PACU; this medication review should occur before discharge and is compared with any newly prescribed medications with a goal of identifying potential problems and resolving discrepancies

minimally invasive surgery (MIS) a surgical technique using one or more small incisions or natural body openings

monitored anesthesia care (MAC)/moderate sedation drug-induced state of depressed consciousness while maintaining reflexes

Multi-Angle Rear-Viewing Endoscopic tooL (MARVEL) a flexible, robotic endoscope providing a panoramic view for surgeons of hidden anatomical structures, especially in confined spaces like the brain or spine

occupational anesthetic gas (OAG) anesthetic gas and vapor that, while essential for surgery and pain management, pose health risks when personnel are exposed over time

operating room (OR) a meticulously controlled environment designed to minimize patient risk (e.g., surgical site infections) during surgical procedures

patient-controlled analgesia (PCA) a pain management system that allows the patient to self-administer small doses of IV pain medication within safe, preprogrammed limits, which are based on patient-specific factors like age and health

perioperative first assistant (also, registered nurse first assistant [RNFA], certified surgical first assistant [CSFA], surgical physician's assistant [PA], perioperative nurse practitioner [NP]) scrub person with advanced education and training who helps the surgeon with tasks such as holding retractors and suturing

perioperative period the entire surgical experience to include all stages of surgery

phase I recovery the immediate postanesthetic period during which the PACU nurse ensures the patient's full recovery from anesthesia and return of vital signs to near baseline

phase II recovery preparing patients for discharge from the facility, which includes providing education regarding the postoperative instructions and prescribed discharge medications

polypharmacy the use of multiple medications simultaneously to treat one or more medical disorders

postanesthesia care unit (PACU) area where patients recover from anesthesia after surgery; previously known as the recovery room

preadmission testing a range of examinations, laboratory or diagnostic tests, and procedures tailored to the specific patient and surgery to be performed that are completed before a procedure or surgery to evaluate a patient's health status

preoperative assessment conducting a comprehensive physical and psychosocial evaluation that includes reviewing past surgeries, medications, allergies, and any preexisting conditions and identifying potential risks

preoperative stage a critical component of the perioperative experience that includes all the activities and preparations from the time surgery is decided on until the patient is transferred to the OR

regional anesthesia numbing of a specific body region through spinal or epidural anesthesia

registered nurse first assistant (RNFA) a perioperative RN with advanced education and training who helps the surgeon with tasks such as holding retractors and suturing

restricted zone OR suite with actual OR rooms, the scrub sink areas, substerile rooms, central core, and steam sterilization areas; access restricted to personnel wearing surgical attire, hair covers, and masks

retained surgical items (RSIs) surgical item unintentionally left inside a patient, which poses a severe risk to patient safety and causes an unacceptably poor patient outcome

RN circulator a registered nurse who is not scrubbed in but whose primary responsibilities include managing the

overall environment of the OR to ensure it remains safe, sterile, and efficient; the overarching roles of the RN circulator include being the primary patient advocate; orchestrating the environment and ensuring sterility; and collaborating with the anesthesia provider and scrub personnel

robotic-assisted surgery a surgical procedure performed with a robotic system controlled by a surgeon

scrub person the person (RN, technologist) who scrubs in during surgery to assemble and pass instruments and supplies to the surgeon and surgical team, label medications and fluids on the sterile field, count all required items, and manage specimens

semirestricted zone includes the preoperative and postanesthesia care units and medication rooms; personnel are clothed in surgical attire

stage 1—immediate the immediate stage of postoperative care is the period of time the patient is in the PACU, which may last a few hours or up to a day; stage 1 recovery is divided into phases I and II

stage 2—intermediate the intermediate postoperative stage begins when the patient is transferred out of the PACU to a hospital room, to a convalescent facility, or to home; this stage can range from days to weeks depending on the surgery and healing progress

stage 3—convalescence the convalescence stage begins when the patient is home and includes gradual rehabilitation and resumption of normal activities; this phase can take weeks or months, varying greatly based on the individual

sterile technique a set of specific practices and procedures employed to maintain sterility of the sterile field (e.g., equipment, instruments, drapes)

sterility state of being free from living microorganisms (e.g., germs, spores)

surgeon a medical provider trained to perform surgical procedures who bears the ultimate responsibility for the surgery and members of the surgical team

surgical asepsis the absence of all microorganisms in any type of invasive procedure, achieved through rigorous sterilization processes and meticulously maintained through sterile technique

surgical attire personal protective equipment used to prevent personal and environmental contamination; determination of what to wear (e.g., scrubs, surgical gowns, gloves, masks, hair coverings, shoes, face shields) depends on the area of surgical suite and the risk of contamination

surgical conscience a moral code of integrity that compels a person to speak up when an infraction has or is thought to have occurred, to prevent patient harm

surgical count the process of counting all item that may possibly be retained in a patient during a surgical procedure to identify and prevent count discrepancies and the occurrence of retained surgical items

surgical site infection (SSI) infection that occurs at or near a surgical incision within thirty days of the procedure or within one year in the case of organ or space infections with an implant

surgical smoke contains potentially harmful particles that are produced by thermal destruction of tissue when using electrosurgical and radio-frequency devices, lasers, ultrasonic scalpels, power tools, and other heat-destructive devices in the operating room

surgical zone segmented area in the surgical suite with distinct function and attire requirements; a zone may be unrestricted, semirestricted, or restricted

telesurgery remotely performing surgical procedures from a distance using robotic systems and telecommunication technology

time-out a specific verification process that occurs as a short pause just before induction of anesthesia, before the initial surgical incision, and before the patient leaves the OR to confirm that the team is about to perform (and has performed) the correct procedure on the correct body part of the correct patient

unrestricted zone where nonsterile activities like patient admission and transport occur; includes the admissions area, offices, changing areas, break rooms, and supply receiving and storage; street clothing is allowed

urgent surgery typically occurs within hours of the decision to operate for an acute situation, and if resuscitation was required, it has been performed and resolved; although urgent, time is available to allow for more efficient identification of a surgeon, anesthesia provider, perioperative personnel, and available operating room time

Assessments

Review Questions

1. What anesthesia type induces a state of drowsiness and reduces anxiety without complete unconsciousness?

a. general anesthesia
b. monitored anesthesia care (MAC)/moderate sedation
c. regional anesthesia
d. local anesthesia

2. A nurse is preparing a patient for a procedure to remove a wart. The wart is not painful and does not affect the patient's ability to function. How would this surgery be classified?
a. expedited
b. emergent
c. elective
d. urgent

3. The nursing student is discussing the appropriate use of general anesthesia with their preceptor. What statement should the student make to demonstrate they have an accurate understanding of general anesthesia?
a. General anesthesia numbs a small area of the body while allowing the patient to remain conscious.
b. General anesthesia may be used with sedation.
c. General anesthesia makes patients drowsy while allowing them to breathe on their own during surgery.
d. General anesthesia puts patients into a deep sleep and induces amnesia.

4. A patient in a rural area is having a hysterectomy performed remotely, in real time, by a doctor who is two hours away in an urban hospital. What type of surgery makes this possible?
a. MARVEL
b. telesurgery
c. minimally invasive surgery
d. artificial intelligence

5. What new technology offers neurosurgeons improved access to do brain tumor resections in deep and narrow regions of the brain?
a. robotic-assisted surgery
b. telesurgery
c. MARVEL
d. artificial intelligence

6. What is the purpose of preadmission testing?
a. to educate a patient about the purpose of their procedure or surgery
b. to ensure the patient's colon and rectum are clean before a procedure or surgery
c. to evaluate a patient's health status before a procedure or surgery
d. to ensure the patient has provided informed consent for the procedure or surgery

7. Why is fasting before surgery important?
a. Fasting helps clean the patient's colon and rectum before surgery.
b. Fasting helps minimize the risk of aspiration during anesthesia.
c. Fasting helps determine if a patient is strong enough to survive surgery.
d. Fasting helps minimize the chances of a patient developing an infection after surgery.

8. What is the role of the nurse during preoperative preparation?
a. Prepare instruments and assist the surgeon while maintaining a safe environment.
b. Manage the patient's pain, monitor vital signs, and treat postoperative complications.
c. Provide essential early postoperative care.
d. Assess patients, manage anxieties, and confirm informed consent.

9. How can distraction methods help with pain management?

a. With distraction methods, activities such as listening to music can help divert attention from pain or discomfort.
b. With distraction methods, activities such as guided meditation can help manage anxiety and decrease pain.
c. With distraction methods, therapies such as cold packs and heating pads can help with inflammation and reduce pain.
d. With distraction methods, positioning provides comfort and helps patients be more at ease physically and mentally.

10. What are the eight rights of medication administration?
a. right patient, right medication, right dose/concentration, right surgeon, right time, right supplements, right reason, and right patient response
b. right patient, right medication, right dose/concentration, right dietary requirements, right time, right documentation, right supplements, and right patient response
c. right patient, right medication, right dose/concentration, right fluid intake, right dietary requirements, right documentation, right time, and right patient response
d. right patient, right medication, right dose/concentration, right route, right time, right documentation, right reason, and right patient response

11. Which surgical team member directly supports the surgeon by retracting tissues, providing additional instrumentation, and anticipating needs?
a. RN circulator
b. anesthesiologist
c. Certified Registered Nurse Anesthetist (CRNA)
d. Registered Nurse First Assistant (RNFA)

12. Which surgical team member has tasks before, during, and after surgery, including acting as a patient advocate, preparing the OR and maintaining sterility, and collaborating with other team members, including the management of "time-outs"?
a. RN circulator
b. anesthesiologist
c. Certified Registered Nurse Anesthetist (CRNA)
d. Registered Nurse First Assistant (RNFA)

13. In the perioperative suite, what surgical zone includes the preoperative and postanesthesia care units and medication rooms?
a. unrestricted
b. semirestricted
c. restricted
d. substerile

14. What surgical innovation also poses hazards in the OR, including direct tissue damage, fire hazards, eye injuries, and airborne contaminants?
a. lasers
b. surgical smoke
c. anesthetic gases
d. electrosurgery

15. Preventing hypoxia is fundamental to safeguard patients in the OR. Why?
a. With hypoxia, the body's core temperature drops below 96.8°F (36°C), which can have devastating consequences.
b. With hypoxia, the body experiences a severe allergic reaction, which can have devastating consequences.

c. With hypoxia, the body experiences excessive bleeding, which can have devastating consequences.
d. With hypoxia, the body's tissues are deprived of adequate oxygen, which can have devastating consequences.

16. During what stage or phase of postoperative care is the focus on wound management, physical therapy, and ongoing pain management?
a. stage 1—immediate
b. stage 2—intermediate
c. stage 3—convalescence
d. phase I recovery

17. Abnormal blood pressure, heart rate, and oxygen saturation readings plus swelling and redness around a wound are clues of what problem?
a. hypotension and shock
b. hemodynamic instability
c. hemorrhage
d. hypertension and arrhythmias

18. What are the early signs of unmanaged pain?
a. guarding, sighing, clenched fists, furrowed brows
b. increased blood pressure and changes in consciousness
c. restlessness, agitation, pale skin, tight abdomen
d. clammy skin, altered consciousness, difficulty breathing

19. What bariatric procedure is complex, creating a small stomach sleeve to bypass most of the small intestine?
a. sleeve gastrectomy
b. Roux-en-Y gastric bypass
c. biliopancreatic diversion with duodenal switch
d. adjustable gastric band

20. After gastric bypass surgery, food may pass directly from the stomach pouch into the small intestine without being digested. What is this syndrome called, and why is it a problem?
a. It is called dumping syndrome, and it is a problem because it can cause nausea, vomiting, abdominal cramping, and diarrhea.
b. It is called comorbidity syndrome, and it is a problem because it can cause nausea, vomiting, abdominal cramping, and diarrhea.
c. It is called dumping syndrome, and it is a problem because it can cause high blood pressure and dizziness.
d. It is called comorbidity syndrome, and it is a problem because it can cause high blood pressure and dizziness.

Check Your Understanding Questions

1. What is the difference between scheduled and elective surgery?

2. What is the difference between local and regional anesthesia?

3. What is the goal of bowel preparation, and what is the two-pronged approach to achieve bowel preparation?

4. During preoperative preparation, what are the nurse's responsibilities regarding skin preparation?

5. What is the main purpose of surgical asepsis and sterile technique in the OR?

6. What is the difference in roles between an RN circulator and a scrub person?

7. What is the purpose of a surgical time-out?

8. What should the nurse assess to determine if a patient has the psychological readiness required to be discharged?

Reflection Questions

1. Reflect on the challenges and demands placed on healthcare professionals during emergent surgeries. How does the urgency impact decision-making and collaboration?
2. What role does artificial intelligence (AI) play in enhancing surgical decision-making?
3. How does preadmission testing help ensure that patients are prepared and have a successful surgery?
4. How does the nurse's ability to build rapport with patients contribute to a holistic preoperative assessment?
5. Reflect on the potential health hazards associated with the surgical environment. How can healthcare institutions proactively address and mitigate these risks to ensure the well-being of both patients and healthcare personnel?
6. Reflect on the developmental considerations for dealing with children in postoperative care. What should nurses remember when dealing with children as patients?

What Should the Nurse Do?

1. A patient is scheduled for a surgical procedure to have a large mole removed from the back of their hand. What type of anesthetic should the nurse be prepared to assist with to prepare the patient for this procedure, and how will the nurse know if the anesthetic is working?
2. A patient cut their ankle while doing yard work and needs several stitches. The patient was given a regional anesthetic and is upset because they cannot feel their foot, the area around the ankle, or the lower part of their leg. What should the nurse do?
3. A patient is scheduled for surgery early the next morning and refuses to follow the fasting guidelines. The nurse overhears the patient order a cheeseburger that they intend to eat shortly before going to sleep for the night, which will be less than eight hours before their surgery. What should the nurse do?
4. During a patient's preoperative assessment, the nurse notices that the patient seems nervous and uncomfortable. What should the nurse do?
5. About an hour after surgery begins, a first-year surgical intern opens the door of the OR. The intern is not wearing a surgical gown or gloves, and they are wearing shoes from outside the OR without shoe covers. The intern starts to step inside the OR. Why is this a problem, and what actions should the RN circulator take to correct the problem?
6. During surgery on a urology patient, the surgeon plans to use electrosurgery for part of the procedure. To ensure that this part of the surgery is handled safely without creating a fire risk, what should the RN circulator ensure happens before the electrosurgery device is triggered?
7. While overseeing a new nurse's work, the head nurse finds that the new nurse's immediate postoperative assessment of a patient provides details about the patient's circulation, pain, temperature, and surgical site. But no other information is included in the assessment. Why is this a problem, and what should the head nurse do to correct this?

Competency-Based Assessments

1. Imagine you are working in a surgical department and are tasked with developing a presentation to help stakeholders decide whether the facility should transition to robotic surgery. What advantages and disadvantages should you highlight?
2. Explain the process that preoperative nurses should use to teach coping strategies and help patients deal with the stress and anxiety that they may experience when preparing for surgery.
3. Consider why hypothermia is a critical concern in the OR. Create a presentation that discusses the factors that can contribute to hypothermia, and how the perioperative team can prevent hypothermia.

4. A critical component of postoperative care is maintaining a patient's airway. Describe the interventions that may be needed to maintain a patient's airway.
5. Providing postoperative care to older adults often requires a nuanced approach that acknowledges unique challenges and strengths of the older adult population. What differences in older adults make this necessary?

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CHAPTER 32
Self-Concept

FIGURE 32.1 Thoughts and feelings about ourselves shape what is known as self-concept. (credit: modification of "mirror image" by Clare Black/Flickr, CC BY 2.0)

CHAPTER OUTLINE

32.1 Foundations of Self-Concept
32.2 Factors Affecting Self-Concept

INTRODUCTION Self-concept is an important aspect of patient care. Patients with a positive self-concept are more likely to participate in care and health prevention, have more engagement in self-care, and have better self-management of chronic diseases (Alqahtani & Alqahtani, 2022). A healthy self-concept is also important for nurses to successfully perform in their role. While a healthy self-concept is developed and maintained throughout the life span, there are many factors that can affect self-concept. This chapter introduces the foundations of self-concept, including its components, measurement, and development. It also discusses psychological, physiological, cultural, and behavioral factors affecting a healthy self-concept. A good understanding of self-concept can help the nurse better understand a patient's cognitive, behavioral, and psychological processes and provide more patient-centered care.

32.1 Foundations of Self-Concept

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify components of self-concept
- Explain the measurements of self-concept
- Describe the development of self-concept

Understanding **self-concept**, the various components that collectively contribute to an individual's perception of

themselves, involves recognizing its multifaceted nature. Measuring self-concept involves employing various assessment tools and methodologies to quantitatively (measurable data, typically involving numbers and statistics) and qualitatively (descriptive data, typically involving observations and non-numerical insights) evaluate various aspects of an individual's self-perception. Objective measurements may include standardized self-report questionnaires, such as the **Rosenberg Self-Esteem Scale**, which assesses global self-esteem. Qualitative measurements involve exploring personal narratives, reflective journals, and interviews, offering deeper insights into the subjective aspects of self-concept. Through these assessments, learners develop an understanding of the diversity in self-concept measurements and the importance of considering both quantitative and qualitative approaches to capture the richness and complexity of an individual's self-perception.

Self-concept is a dynamic construct, an abstract concept or theoretical entity that is not directly observable but is inferred from measurable behaviors or responses, that evolves over the life span. Its development is influenced by numerous factors, including social interactions, cultural contexts, personal experiences, and feedback from significant others. During childhood, interactions with family members and peers significantly impact the formation of self-concept. Adolescence introduces identity exploration, contributing to a more complex understanding of oneself. Adulthood involves continued refinement as individuals navigate relationships, work, and societal expectations. Learners exploring the development of self-concept delve into the psychological and sociological theories that clarify the intricate processes shaping one's self-perception over time. Understanding this development is crucial for healthcare professionals, educators, and counselors to provide effective support and interventions tailored to an individual's evolving self-concept.

Components of Self-Concept

The construct of self helps us, as individuals, identify and relate within the world around us. How we communicate with others, maneuver through life, and describe ourselves are aspects of our concept of self. Humanistic psychologist Carl Rogers was instrumental in defining the paradigm (a distinct set of concepts, theories, methods, and standards that defines a scientific discipline or intellectual approach) of self-concept through three intertwined components: self-image, self-esteem, and **ideal self** (attributes that individuals aspire to possess) (Figure 32.2). The overall value and worth one assigns to oneself is one's **self-esteem**, while **self-image** involves the mental and emotional view of one's physical appearance and abilities. Personal characteristics, roles, and affiliations that define an individual are one's **self-identity**. Additionally, **social identity**, the concept of self that is formed through connections with societal groups, influences self-concept. Rogers defined this as "the organized, consistent set of perceptions and beliefs about oneself" (McLeod, 2024). Our personal identity and self-concept, according to Rogers, develop throughout the life span beginning in childhood and are molded by experiences, perceptions, and evaluation of others.

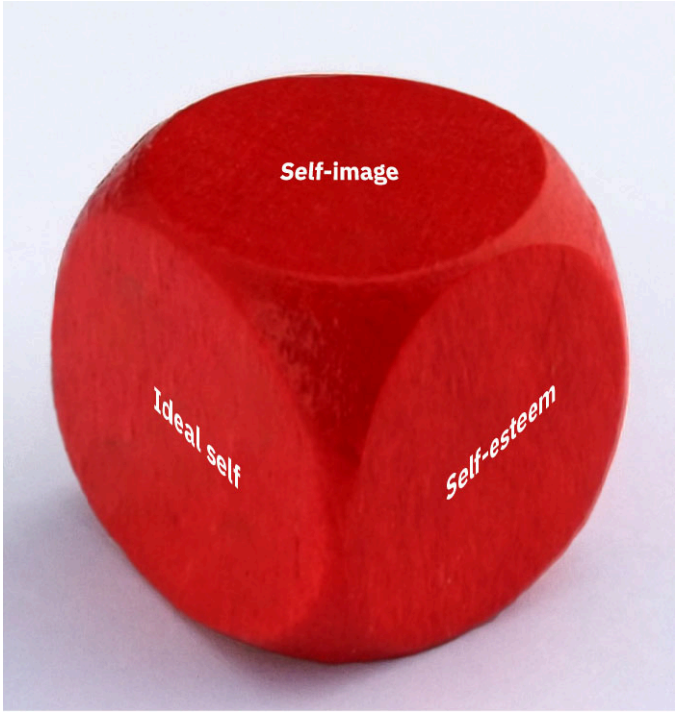

FIGURE 32.2 Self-concept is a three-dimensional aspect of an individual incorporating the ideal self, self-image, and self-esteem. (credit: modification of "Würfel" by "Schlurcher"/Wikimedia Commons, CC BY 3.0)

The concepts of ideal self, self-image, and self-esteem are interrelated components that together form an individual's self-concept and are fundamental in developing personal identity, body image, and role performance. The ideal self, encompassing goals, ambitions, and desired traits and abilities, is often shaped by personal values, societal standards, and aspirations. Self-image, including personal views of one's appearance, abilities, and personality, are influenced by feedback from others, experiences, and personal reflections. Self-esteem is the evaluative component, reflecting how one feels about oneself based on the alignment between self-image and ideal self. High self-esteem occurs when there is congruence between the two, while discrepancies can lead to psychological distress resulting in anxiety, poor self-esteem, and body dysmorphic disorders. The following sections explore how personal identity, body image, self-esteem, and role performance contribute to the overall self-concept, examining the roles each plays in shaping our comprehensive understanding and evaluation of ourselves.

Personal Identity

The sense of individuality and uniqueness that distinguish a person from others is one's **personal identity**. It involves the recognition and internalization of personal traits, values, and beliefs, contributing significantly to how individuals perceive themselves within the broader context of society. This aspect of self-concept evolves as individuals experience personal growth and self-discovery and navigate the complexities of relationships and societal expectations.

Body Image

An individual's perception and evaluation of their physical appearance make up one's **body image**. This aspect of self-concept is heavily influenced by societal standards, cultural norms, and personal experiences. A positive body image correlates with a healthy self-concept, promoting self-acceptance and overall well-being. On the contrary, negative body image can lead to self-esteem issues, impacting mental health. As healthcare professionals engage with individuals, understanding the intricacies of body image within the context of self-concept becomes crucial for providing holistic and sensitive care.

CULTURAL CONTEXT

Cultural Considerations and Body Image

Cultural considerations related to body image are crucial to understanding how individuals perceive and interact with their bodies within different cultural contexts. Cultural norms, values, beliefs, and practices significantly influence how body image is constructed and experienced across diverse societies. In many cultures, societal standards of beauty and attractiveness play a central role in shaping perceptions of body image. These standards can vary widely between cultures and may be influenced by factors such as historical traditions, religious beliefs, media representation, and socioeconomic status. Nurses should gather information from their patients and their families that helps assess each patient's views on body image. Here are a few specific cultural examples to illustrate the diversity of beliefs and attitudes toward body image:

- Western cultures (United States, Western Europe): In Western cultures, there is often an emphasis on thinness as a beauty ideal, especially for women. Media portrayals frequently feature slim, toned bodies as the standard of beauty, influencing individuals to strive for a particular body size and shape. However, there is growing awareness and advocacy for body positivity and acceptance of diverse body shapes and sizes within Western cultures, challenging traditional beauty standards and promoting self-acceptance (Eisenberg et al., 2005).
- East Asian cultures (China, Japan, South Korea): In East Asian cultures, there is often a preference for thinness as well, but with variations. In countries like China, Japan, and South Korea, there may be a cultural ideal of "slimness with curves," where a slender body is desired but with some emphasis on certain curves and proportions. Moreover, fair skin is often associated with beauty and elegance in many East Asian cultures, leading to the popularity of skin-lightening products and practices (Noh et al., 2018).
- Latin American cultures: In Latin American cultures, there is often a greater acceptance of fuller body types, and curves are often celebrated as symbols of beauty and femininity. This cultural preference for a curvier figure is reflected in media representations and beauty ideals. Additionally, there may be cultural rituals and celebrations, such as the quinceañera, where young women aged 15 years are celebrated and embraced for their natural beauty and femininity, regardless of body size or shape (United Nation Children's Fund [UNICEF], 2023).
- Pacific Islander and Polynesian cultures: In Pacific Islander and Polynesian cultures, there is often a cultural appreciation for larger body sizes, which are associated with health, fertility, and prosperity. This cultural attitude toward body size is reflected in traditional dances, where fuller figures are celebrated and admired (Brewis et al., 1998).
- African cultures: In various African cultures, there is often a preference for larger body sizes, especially among women, which are associated with beauty, health, and fertility. Fuller figures are often celebrated and desired, reflecting cultural ideals of femininity and attractiveness (Naigaga et al., 2018).

These examples illustrate the diversity of cultural attitudes toward body image, emphasizing the importance of understanding and respecting cultural differences when addressing body image concerns in diverse populations.

The connection between body image and mental health is evident, with higher body dissatisfaction posing a risk for mental health problems such as depression, anxiety, and suicidal thoughts. A survey conducted by the Mental Health Foundation in 2019 revealed that over one-third of adults felt anxious or depressed due to body image concerns, and one in eight experienced suicidal thoughts or feelings (Mental Health Foundation, 2019). These findings align with research associating body dissatisfaction with a poorer quality of life, psychological distress, and an increased likelihood of depression symptoms. Furthermore, the report emphasizes the link between body image and mental health disorders like **body dysmorphic disorder (BDD)** (a mental health condition characterized by obsessive preoccupation with perceived flaws or defects in physical appearance that are not observable or appear minor to others) (Figure 32.3) and eating disorders (Mental Health Foundation, 2023). While body image concerns are identified as a risk factor for such mental health conditions, the report underscores that addressing body image extends beyond specific disorders, emphasizing the need for comprehensive mental health interventions and preventive measures.

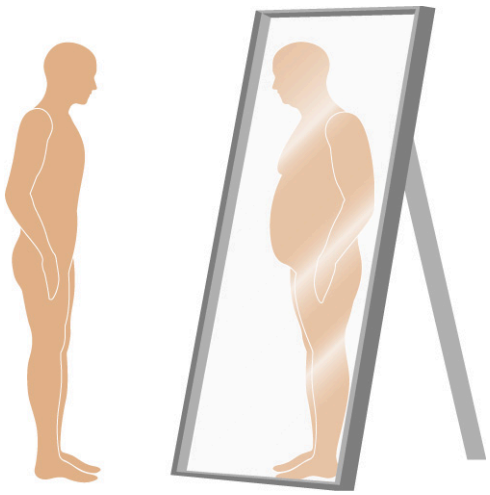

FIGURE 32.3 Body dysmorphic disorder occurs when individuals have a distorted or impaired self-image, perceiving themselves as having a different body form than reality. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Concerns and worries about body image are prevalent among young people, with a survey by BE REAL indicating that 79 percent of 11- to 16-year-olds in the United Kingdom find their appearance important, and over half often worry about it (Mental Health Foundation, 2023). The Mental Health Foundation's survey of young people aged 13 to 19 years further reveals that 35 percent frequently feel worried about their body image. Despite affecting all genders, girls are more likely to report dissatisfaction, with 46 percent expressing frequent worry compared to 25 percent of boys (Mental Health Foundation, 2023). Body image concerns in young people are identified as the third biggest challenge causing harm, following lack of employment opportunities and educational failure. The impact of body dissatisfaction extends beyond psychological distress, influencing risk-taking behaviors, such as dieting, cosmetic surgery consideration, and steroid use among adolescents. Studies in the United States showed similar findings. In 2021, the YouGov Body Image Study found that 51 percent of Americans feel pressured to achieve specific body types, and 62 percent of those in relationships worry about how their partners perceive them (YouGov, 2021).

LINK TO LEARNING

The National Organization for Women provides some facts about body image (https://openstax.org/r/77NOWbodyimage) on their website. Do any of these facts surprise you? How might these facts impact the care you provide to your patients?

The factors contributing to poor body image in children and young people are multifaceted. Pressure to conform to an "ideal" body type, shaming and bullying from peers and family, and emotional distress associated with a mindset of nonconformity all contribute to body dissatisfaction. Such ideals differ between genders, with young women pressured to be the typical thin, hourglass body type, and young men expected to be tall and muscular. These expectations are internalized through exposure to media representations of ideal bodies. The survey indicates that 25 percent of young people attribute their worries about body image to celebrities and 19 percent attribute them to TV shows (Mental Health Foundation, 2023). Social media exacerbates these concerns, with 40 percent of young people reporting that social media images cause them worry (Mental Health Foundation, 2023). Peer influence also plays a significant role, with friends contributing to worries about body image for 40 percent of young people (Mental Health Foundation, 2023). Family dynamics, parental behavior, and bullying further impact body image in children and adolescents, with appearance-based bullying linked to detrimental effects on mental health and body image (Mental Health Foundation, 2023).

LIFE-STAGE CONTEXT

Body Image in Adulthood

In adulthood, the components of self-concept, particularly related to body image, play a crucial role in overall well-being. Increased body dissatisfaction has been correlated with higher rates of depressive symptoms, psychological distress, and development of disordered eating (e.g., skipping meals, restrictive eating, excessive exercise) and eating disorders (e.g., anorexia, bulimia, binge eating). Conversely, positive body image in adults is associated with better overall well-being and quality of life. A Mental Health Foundation survey highlighted that 34 percent of adults reported feeling anxious, and 35 percent reported feeling depressed due to concerns about their body image (Mental Health Foundation, 2023). Moreover, a concerning one in eight adults experienced suicidal thoughts or feelings related to their body image. The survey also revealed that body image concerns were associated with behaviors such as photo editing (7 percent) and contemplating cosmetic procedures like surgery, fillers, or Botox (8 percent) (Mental Health Foundation, 2023).

The impact of body image in adulthood extends beyond emotional well-being and is interconnected with relationships and sexual health. Positive body image has been linked to more positive sexual experiences, especially for women, while body image concerns may contribute to self-consciousness and negatively impact sexual experiences and responses. The survey indicated that one in five adults reported that their sex life had been negatively affected by their body image, and 15 percent mentioned a negative impact on their relationships in the past year (Mental Health Foundation, 2023).

Several factors influence body image in adulthood, similar to childhood, with internalization of "ideal" body types and social comparisons playing pivotal roles. The media, including advertising and social media, contributes significantly to body dissatisfaction, with approximately one in five adults expressing concerns about their body image due to images in advertising and social media. Peer interactions, workplace dynamics, pregnancy, new parenthood, and physical appearance further contribute to shaping body image perceptions in adulthood. Understanding these factors is crucial for devising interventions and support mechanisms to promote positive body image and mental well-being in adults (Mental Health Foundation, 2023).

Self-Esteem

Self-esteem, perhaps one of the most recognized components, represents the overall subjective evaluation of one's worth and value. It is a composite of various factors, including achievements, interpersonal relationships, and societal comparisons. Healthy self-esteem is associated with resilience, positive coping mechanisms, and the ability to navigate life's challenges. In contrast, low self-esteem may contribute to feelings of inadequacy, anxiety, and vulnerability. Recognizing the dynamic nature of self-esteem within the broader framework of self-concept is essential for healthcare professionals and behavioral counselors to support individuals in fostering a positive self-image.

Role Performance

How individuals perceive and execute their roles in different contexts within the family, work, or social environment is called **role performance**. This component integrates personal identity, body image, and self-esteem into action, influencing behavior and interactions. Effective role performance contributes to a sense of purpose, fulfillment, and positive reinforcement of self-concept. Understanding the interconnectedness of these components provides valuable insights for professionals aiming to empower individuals in developing and maintaining a healthy self-concept across diverse life stages and circumstances.

Measurements of Self-Concept

Trying to understand how people see themselves and how this can change in different situations can be challenging. To glean an accurate depiction, there are a few things healthcare providers should consider. For example, a patient may find it hard to determine their ideal self if they are in a fairly stable environment that does not require them to question themselves or consider new things about themselves. There are also differences in how comfortable people are in finding new things about themselves and their surroundings. Those who are somewhat flexible or feel comfortable in uncertain situations are more likely to change how they perceive themselves compared to someone

who prefers stability and organization.

To understand how people see themselves, healthcare providers also should consider how people define themselves in certain areas of their lives. For example, some people base their identity heavily on close relationships, and changes in those relationships can lead to changes in how they view themselves. Determining a common scale on which to study and measure these changes can be daunting and often unreliable. To do this well, it is suggested to use different methods, consider how the study relates to real-life situations, and make sure the study is as close to a natural setting as possible. Table 32.1 presents some examples of self-concept tools commonly used by providers in different settings.

Test	Description	Format
Self-Concept and Identity Measure (SCIM)	Assesses consolidated identity, disturbed identity, and lack of identity	The questionnaire contains twenty-seven statements that aim to measure self-concept across six different aspects: • physical • social • temperamental • educational • moral • intellectual
The Personal Self-Concept Questionnaire (PSQ)	A shorter measurement tool that provides an accurate representation of self-concept overall	The questionnaire is made up of twenty-two statements, divided into four subcategories: • self-fulfillment • autonomy • honesty • emotional self-concept
The Five-Factor Self-Concept Questionnaire (AF5)	Assesses five specific dimensions: academic, social, familial, emotional, and physical *Developed in Spain and used primarily with Spanish-speaking patients	Thirty items, six for each dimension Rating using a continuous response on a ninety-nine-point scale ranging from one (complete disagreement) to ninety-nine (complete agreement)
The Piers-Harris Children's Self-Concept Scale	A self-reporting tool that assesses self-concept in children and adolescents; can be used as a research tool, to monitor change in self-concept over time, and as a screening tool for identifying individuals who need further testing or treatment	This is a sixty-question tool where the child circles "yes" or "no" to answer questions, covering six subcategories: • behavioral adjustment • intellectual and school status • physical appearance and attributes • freedom from anxiety • popularity • happiness and satisfaction

TABLE 32.1 Self-Concept Tools

Test	Description	Format
The Rosenberg Self-Esteem Scale	A widely used self-report instrument for evaluating individual self-esteem	A ten-item scale that measures global self-worth by measuring both positive and negative feelings about the self. The scale is believed to be unidimensional. All items are answered using a four-point Likert-type scale format, ranging from strongly agree to strongly disagree.
The *Dimensions of Self-Concept (DOSC)*	A self-report survey for measuring noncognitive factors that are associated with self-concept or self-esteem in the school setting	Seventy to eighty questions (depending on grade level) that measure the following: • level of anxiety • aspirations • academic interest and satisfaction • leadership and initiative • identification versus alienation

TABLE 32.1 Self-Concept Tools

Self-knowledge, self-expectations, and self-evaluation play crucial roles in the measurement and understanding of self-concept. Together, these components contribute to comprehensive measurements of self-concept by capturing both descriptive aspects (self-knowledge) and evaluative aspects (self-expectations and self-evaluation). By integrating these dimensions, researchers and practitioners can assess and understand how individuals perceive themselves across different contexts and domains, informing interventions aimed at promoting positive self-concept and psychological well-being.

Self-Knowledge

A philosophical term, **self-knowledge** is used to identify one's own recognition of mental state—what one believes, feels, perceives, and desires. Self-knowledge serves as the cognitive foundation on which self-concept is constructed, providing the content and data that individuals use to formulate their perceptions and evaluations of themselves. Self-knowledge is genuine information one possesses about oneself, and components of self-knowledge encompass emotional states, personality traits, relationships, behavioral patterns, opinions, beliefs, values, needs, goals, preferences, and social identity. Self-knowledge results from self-reflective and social processes, deriving not only from introspection but also from five sources: the physical world, social comparisons, reflected appraisals, introspection, and self-perception (Wilson, 2021). Additionally, Schaffner (2020) includes **cognitive-behavioral therapy (CBT)** (a structured talk therapy that focuses on problematic thinking and behaviors and helps to create healthy thinking, behaviors, and coping skills) and mindfulness techniques as sources of self-knowledge.

Self-concept measurements rely on individuals' awareness and understanding of themselves. Self-knowledge provides the foundational data about one's traits, values, abilities, and experiences, which are essential for assessing how individuals perceive themselves in various domains. For example, self-knowledge informs responses to questionnaires or assessments that inquire about personal characteristics and behaviors.

Understanding oneself is crucial for healthy functioning and promoting realistic decision-making regarding key aspects of life. Lack of self-knowledge can adversely affect life partner choices, education and career decisions, and lifestyle choices. Deficits in self-knowledge may lead to exaggeration of subjective strengths, impacting life satisfaction and academic performance negatively. The importance of self-knowledge for psychological growth includes satisfying the desire to learn from experiences, preventing discord between self-perceptions and the perceptions of others, releasing oneself from unconscious notions, facilitating proactive responses, and serving as a necessary first step for positive change. Furthermore, self-knowledge promotes emotional balance; reduces work frustration, insecurity, and envy; decreases stress; enhances responsibility for emotions; fosters empathy and compassion; and shapes understanding of others (Wilson, 2021).

Self-knowledge also plays a crucial role in nursing and healthcare contexts, as it helps nurses manage stress related to patient care and workplace dynamics, fostering a deeper understanding of their own emotions and reactions. Self-knowledge also supports nurses in taking responsibility for their emotional responses, which is vital in maintaining professional boundaries and providing empathetic care to patients. By understanding their own strengths, limitations, and values, nurses can cultivate empathy and compassion toward patients and colleagues alike. This self-awareness also contributes to a deeper understanding of patients' perspectives and needs, thereby improving overall patient care and outcomes in healthcare settings.

Global Self

The concept that we are all part of a collective being is called **global self**, like a global family where our actions have far-reaching impacts. It emphasizes the interconnectedness of people and cultures around the world. Various types of global self are highlighted, including cultural global self, shaped by exposure to diverse cultures; environmental global self, emphasizing responsible interaction with the planet; social global self, focusing on global friendships and community impact; digital global self, reflecting our online presence and connections; and economic global self, recognizing the influence of our purchasing choices on the world economy. These types encourage a holistic understanding of our role in a global context, extending beyond geographical and cultural boundaries.

Self-Expectations

Expectations are personal beliefs about what should or will happen. They include influential and challenging **self-expectations** regarding what individuals should do, think, or feel. These expectations, often shaped by societal influences, cultural norms, and personal values, guide behavior and judgments. While some expectations can be positive, providing motivation to face challenges and pursue dreams, unrealistic expectations may lead to conflict, frustration, and self-doubt. Self-awareness in managing expectations is significant, particularly when unrealistic self-expectations contribute to negative self-beliefs and potential mental health issues, like anxiety and compassion fatigue. Balancing needs, desires, values, and beliefs is integral, emphasizing the importance of cultivating realistic expectations for nurturing a healthy self-esteem and experiencing fulfillment in life.

Self-concept measurements often include assessments of individuals' expectations and aspirations for themselves. These expectations reflect their ideal self, encompassing goals, desires, and future-oriented aspects of identity. By measuring self-expectations, researchers and practitioners gain insights into how individuals perceive their potential and aspirations relative to their current self-perceptions.

The broader impact of expectations extends beyond self-expectations to include expectations of others. Individuals can unintentionally set expectations for themselves based on assumptions of how others will react, potentially leading to feelings of failure and resentment. Unrealistic expectations in various aspects of life, from striving for constant happiness to setting standards based on societal perceptions and social media influences, can have a negative impact on the quality of life. While setting high expectations often stems from a desire for a perfect outcome, acknowledging and learning from mistakes is crucial for personal growth and success. By highlighting the importance of recognizing strengths and weaknesses as a means of cultivating self-awareness, people are able to manage expectations effectively, building a more satisfying life.

REAL RN STORIES

When High Expectations Lead to Burnout

Nurse: Beth, BSN
Clinical setting: Medical-surgical unit
Years in practice: 2
Facility location: Inner city Washington, DC

I had just landed my dream job at a prestigious hospital downtown and had high self-expectations. I wanted to be a "rock star" nurse and save lives, just like you see on TV. I was super busy throughout all of my shifts and hardly had time to eat at work; however, I kept pushing through because I needed to be the rock star nurse my patients needed. My personal life was deteriorating (my husband and I were like distant roommates), and I dreaded going home, so I would pick up more shifts at the hospital. I was always so tired when I got home, all I wanted to do was

sleep. I hardly talked to my friends or did anything fun because I worked so much and was utterly exhausted all the time. I didn't realize it at the time, but I pushed myself way too hard and quickly became burned out.

One day while I was at work, I passed out. As embarrassing as that was, it was my wake-up call. I was forced to take time off from work and face the real world as well as my personal problems. During my mandatory time off, I had conversations with my husband, and we decided to separate. I also began to see a therapist and take medication for depression. When it was finally time for me to return to work, I had developed a stronger sense of work-life balance and developed healthy self-expectations. It's still a work in progress, but I've decided to make myself a priority.

Ideal Self

The concept of the self encompasses different aspects, including the actual self, ideal self, and ought self. The **actual self**, or real self, represents the attributes believed to be possessed by an individual, as perceived by oneself or others (Figure 32.4). On the other hand, the ideal self consists of attributes one or others aspire for the individual to possess, while the **ought self** refers to the internalized expectations and standards that individuals believe they should or must adhere to in order to meet external demands, social norms, or moral obligations.

These different facets of the self can lead to internal conflicts, manifesting as disparities between the actual self and the ideal or ought self. Such discrepancies can serve as motivational factors, prompting individuals to undertake actions for self-improvement. For example, imagine a registered nurse who sees themself as compassionate and dedicated to patient care (actual self). However, their ideal self-image includes becoming a nurse practitioner specializing in oncology. Meanwhile, their ought self involves meeting the expectations of their healthcare team and adhering to clinical protocols and patient safety standards. The gap between their current role as a nurse and their ideal self as a nurse practitioner may motivate them to pursue further education, seek certification, and gain clinical experience in oncology. Simultaneously, balancing their ought self with patient care demands and clinical responsibilities requires them to integrate compassionate care with procedural adherence and team collaboration.

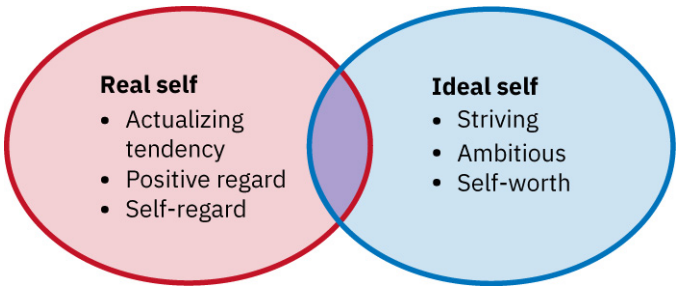

FIGURE 32.4 When our real self and ideal self overlap, harmony occurs. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Moreover, conflicts between the ideal and ought selves can induce heightened stress, particularly when individuals, such as professional women with both career aspirations and maternal duties, perceive a misalignment between their ideal vision and perceived obligations. The resulting actual self may fall short of meeting expectations in either realm. These disparities extend beyond cognitive unease, influencing emotional, behavioral, and communicative responses. When assessing the actual self in comparison to ideal self and external expectations, distinct patterns of emotional and behavioral consequences emerge. *Mismatch with personal ideals* may evoke feelings of disappointment and frustration, as exemplified by the financial discipline scenario. Similarly, *discrepancies with others' ideals* can elicit emotions such as shame and embarrassment, as experienced when academic performance falls short of expectations. *Conflicts with perceived duties or obligations* may lead to agitation and fear of potential repercussions, exemplified by the dilemma of following familial expectations versus personal aspirations. Last, *incongruence with one's own sense of duties* may evoke feelings of guilt and inadequacy. For example, in nursing, when a nurse's actual self, ideal self (aiming for specialized expertise in critical care), and ought self (fulfilling hospital protocols and team expectations) are not aligned, it can evoke feelings of guilt and inadequacy. The nurse may feel guilty when unable to dedicate enough time to specialized patient care during demanding shifts, leading to a sense of inadequacy in meeting both patient needs and professional standards. This overview outlines the four potential discrepancies between selves and the associated emotional outcomes, emphasizing the intricate interplay between internal and external expectations on individuals' well-being and self-perception.

False Self

Donald Winnicott, a pediatrician and psychoanalyst, stressed how important it is to keep our mental energy strong when there is constant pressure to fit in. His focus was on the individual's ability to be "alive" and spontaneous, and how these qualities can be lost when we start to take on what society expects from us (Ehrlich, 2021). This pressure ultimately causes issues of frustration, anger, and sadness. Winnicott believed that the **false self**, pretending to be someone we are not, begins in infancy due to unmet maternal needs.

The pervasive impact of shame, marked by a sense of inherent inadequacy and unworthiness, often compels individuals to construct a false self in the pursuit of acceptance. The fear of rejection and humiliation drives an individual to garner approval, perpetuating anxiety and a diversion of embracing one's genuine, authentic self. In a quest for safety, individuals alter their identities and expend a considerable amount of energy to meet perceived expectations for love and acceptance. This self-imposed pressure to conform leads many to showcase attributes such as intelligence and skill, beauty, or accomplishments, at the cost of authenticity. Shame and authenticity share an intertwined relationship, influencing self-perception and external presentation. When rooted in the belief of personal flaws, shame disconnects individuals from innate, spontaneous joy, inhibiting the development of self-worth. Recognizing the presence of shame enables individuals to break free from destructive influence, empowering the true self despite external judgments. The journey toward authenticity is viewed as an ongoing process of mindful self-awareness, disentangled from the corrosive influences of shame and inner criticism, allowing individuals to navigate complexities, acknowledge existence without being defined by it, and ultimately spread their wings to savor the richness of life (Amodeo, 2020).

Self-Evaluation

In psychology, **self-evaluation** refers to the process by which individuals assess and judge their own thoughts, feelings, behaviors, and overall sense of self. It involves reflective thinking about one's own characteristics, performance, and experiences. Self-evaluation can encompass various aspects, including self-esteem, self-worth, self-perception, and self-reflection.

Key components of self-evaluation include the following:

- Self-esteem: The overall positive or negative evaluation of oneself. It reflects an individual's feelings of self-worth and confidence. For example, despite facing a challenging shift, a nurse may experience high self-esteem when they maintain composure and effectively manage multiple patient care tasks, feeling confident in their abilities as a caregiver.
- Self-perception: How individuals perceive themselves in terms of their abilities, competencies, and characteristics is **self-perception**. A nurse's self-perception as a compassionate caregiver, for instance, may be affirmed when they receive positive feedback from a patient's family for their attentive and empathetic approach during a difficult shift.
- Self-reflection: Thoughtful contemplation about one's actions, motivations, and personal growth is **self-reflection**. It involves assessing one's values, goals, and the alignment between behaviors and personal standards. For instance, a nurse may engage in self-reflection after a particularly demanding shift, considering how their communication with patients and families could be improved to provide clearer information and emotional support during stressful times.
- Self-awareness: Recognizing and understanding one's emotions, thoughts, and behaviors is **self-awareness**. A nurse's self-awareness, for example, allows them to recognize feelings of frustration and burnout during a busy shift, prompting them to take breaks and seek support from colleagues to better manage stress and maintain quality patient care.

Self-evaluation can be influenced by various factors, including social comparisons (comparing oneself to others), cultural norms, feedback from others, and personal experiences. It plays a significant role in shaping an individual's self-concept and can impact mental well-being.

Self-concept measurements involve evaluating how individuals assess their own qualities, abilities, and behaviors. This self-evaluation component reflects their self-esteem (positive or negative feelings about oneself) and the alignment between their perceived self and ideal self. Self-evaluation measurements assess the degree of satisfaction or dissatisfaction individuals feel about their self-perceptions, which is crucial for understanding their overall self-concept. Psychologists often study self-evaluation processes to understand how individuals perceive

themselves, how they cope with successes and failures, and how these perceptions influence behavior and mental health. The ability to engage in constructive and realistic self-evaluation is considered essential for personal development and psychological well-being (Song, 2021).

Significance

When people assess themselves, they tend to think of their ideal selves—an almost perfect version of who they want to be. This idealized view can lead to biased evaluations. Even if individuals cannot always act like their ideal selves, they often rate themselves more positively during self-evaluation. It is common for people to think less critically of themselves than they do of others. Understanding that these evaluations can be biased helps individuals form a more balanced self-concept. People may overestimate their abilities, and when they face failure, they tend to attribute the reasons to external factors rather than themselves (Song, 2021).

Recognizing that individuals might sometimes misjudge their capabilities allows them to develop a clearer self-concept. Social comparison, where people constantly compare themselves to others, can lead to assimilation in self-evaluations, making an individual's assessment more like their peers. Providing people with a realistic view of their capabilities helps them gain a better understanding of what they can do and reduces assimilation to some extent.

Competence

The degree of effectiveness and proficiency individuals perceive in themselves is called **competence**. It involves not only objective assessments of performance but also subjective evaluations relative to personal standards and aspirations. Individuals gauge their competence in academic, professional, social, and personal spheres, reflecting on their achievements, strengths, and areas for improvement. Positive self-perceptions of competence foster confidence, motivation, and a sense of efficacy, empowering individuals to pursue their goals and navigate life's challenges with resilience. Conversely, perceived deficits in competence may lead to feelings of inadequacy, self-doubt, and **impostor syndrome** (a psychological pattern in which individuals doubt their skills, talents, or accomplishments and have a persistent internalized fear of being exposed as a "fraud"), hindering personal growth and well-being.

Virtue

The moral dimension of self-evaluation, **virtue**, encompasses individuals' reflections on their character, values, and ethical conduct. It involves assessing the alignment between one's actions, intentions, and moral principles, as well as the perceived consistency with societal or cultural norms of virtuous behavior. Positive self-evaluations of virtue contribute to feelings of moral integrity, self-respect, and authenticity, fostering a sense of purpose and meaningful connection with others. Conversely, negative self-perceptions in this domain, such as feelings of guilt, shame, or moral conflict, may arise when individuals perceive a disconnect between their actions and their values, leading to inner turmoil and existential questioning.

Power

An individual's perception of their ability to influence or control outcomes, resources, or other individuals within their social environment is called **power**. It encompasses both personal agency and social influence, spanning domains such as work, relationships, and community involvement. Positive self-evaluations of power cultivate feelings of autonomy, assertiveness, and efficacy, enabling individuals to assert their needs, pursue their goals, and advocate for change. However, perceived powerlessness or lack of control may engender feelings of frustration, helplessness, or vulnerability, undermining individuals' sense of agency and impeding their ability to effect change in their lives and communities. Recognizing and leveraging personal sources of power can empower individuals to assert themselves confidently, navigate power dynamics effectively, and strive for greater equity and justice in society.

Development of Self-Concept

Just as forming strong connections is a crucial milestone in infancy, a significant step in childhood is developing a positive sense of self. Initially, babies do not recognize themselves in a mirror until they are approximately 18 months old. Between ages 24 and 36 months, children can point to themselves in pictures, demonstrating self-recognition (Archer, 1992).

From ages 2 to 4 years, children become more social after establishing a self-concept. They enjoy playing with other

kids but might find it challenging to share their belongings. Through play, they explore gender roles and can label themselves as a girl or boy. By the age of 4 years, children can cooperate, share, and separate from parents with less anxiety, displaying autonomy by initiating tasks and carrying out plans. Success in these areas contributes to a positive self-concept. At 6 years old, children identify themselves in terms of group memberships, like being a first grader. They start comparing themselves to peers, recognizing their strengths and areas for improvement. This self-awareness continues into adolescence, where teens form their identities and internalize messages about their strengths and weaknesses, contributing to their ability to positively impact society. Developing a positive self-concept is vital for healthy growth, influencing confidence, academic performance, independence, and a willingness to try new activities.

Reflected Appraisal

The process by which our self-concept is affected by what other people think of us is called **reflected appraisal**; how we see ourselves is influenced by how others see us. Sociologist Charles H. Cooley described reflected appraisal as a concept called the "looking glass self" (Figure 32.5) (Cooley, 1902). In his assumption, Cooley suggested that how we understand others' perception of us impacts the development of our self-concept. In other words, social interactions, especially those that are important to us, play an integral role in the development of our sense of self. Words used to describe us, such as smart or athletic, have an effect on how we aspire to encompass these characteristics as well as how we portray ourselves. When asked to describe ourselves, we often will use these same words as they are now part of our self-concept. In contrast, words such as "withdrawn" or "lazy" can negatively impact the way we portray ourselves, as self-concept has been affected in a negative way.

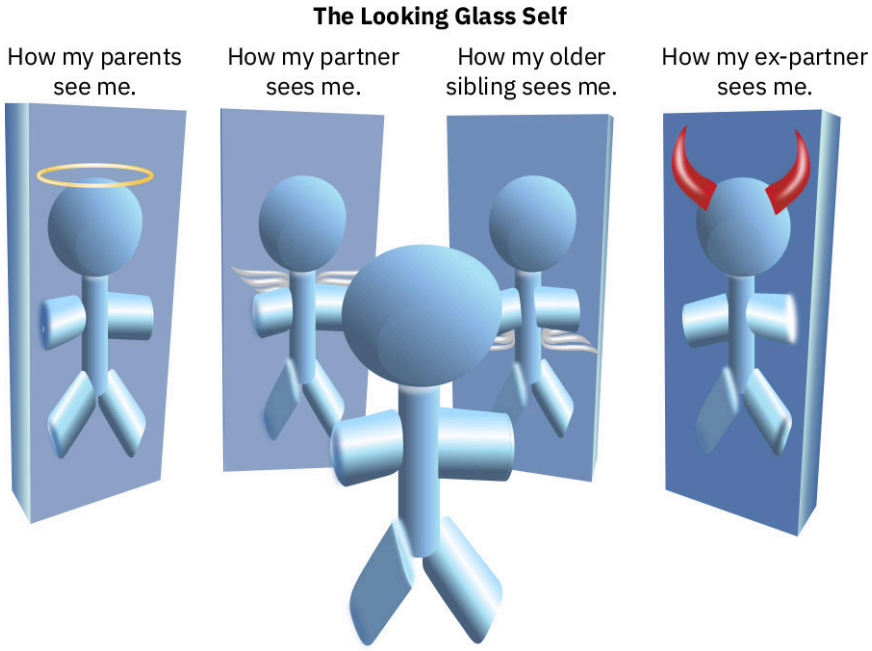

FIGURE 32.5 The concept of the "looking glass self" represents the dynamics of reflected appraisal. (modification of "The looking glass self" by "Rcragun"/Wikipedia, CC BY 3.0)

According to **symbolic interactionism**, the way we see ourselves is influenced by how others see us. Self-concept is developed during childhood and continues to be refined through adolescence. The foundation of self-concept is based on three basic conditions: (1) a connection between children's self-perceptions and their perceptions of how others see them (reflected appraisals), (2) a link between children's reflected appraisals and others' actual appraisals, and (3) a relationship between children's self-perceptions and others' actual appraisals. The model suggests that actual appraisals of significant others influence reflected appraisals, which, in turn, affect self-perception (Hergovich et al., 2002). For example, mothers, fathers, and teachers have an impact on different areas of self-concept, mothers generally being more influential.

Social Comparison

Human nature drives individuals to measure themselves against others, assessing looks, success, friendships, and social status. In 1954, psychologist Leon Festinger suggested that we evaluate ourselves in comparison to others,

and those judgments influence our self-concept. This concept is known as **social comparison theory**. Some influence our self-concept more than others. *Upward social comparison* occurs when we compare ourselves with those we see as better than us. These comparisons tend to focus on the desire to improve ourselves. *Downward social comparison* occurs when we compare ourselves with those we see as worse off than us. These comparisons often focus on making us feel better about ourselves and our abilities.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Understanding Social Comparison in Health Care

Social comparison theory suggests that individuals evaluate themselves and their abilities by comparing themselves to others. In healthcare settings, patients may engage in social comparison with peers, benchmarks, or societal norms, influencing their perceptions of health, treatment adherence, and satisfaction with care.

- Patient perceptions:
  - Patient-centered care: Recognize patients' unique perspectives and experiences, acknowledging the impact of social comparison on their self-perception and well-being.
  - Communication: Foster open dialogue with patients, encouraging them to express concerns or challenges related to social comparison and providing empathetic support.
  - Teamwork and collaboration: Collaborate with interdisciplinary teams to address patients' psychosocial needs and develop personalized care plans that consider the influence of social comparison dynamics.
- Treatment adherence:
  - Evidence-based practice: Implement evidence-based strategies to enhance treatment adherence, considering the role of social comparison in influencing patient behavior and decision-making.
  - Quality improvement: Identify opportunities to improve patient education and support systems to mitigate the negative effects of social comparison on treatment adherence and health outcomes.
- Satisfaction with care:
  - Patient-centered care: Tailor care approaches to meet patients' individual needs and preferences, fostering a sense of autonomy and empowerment that mitigates the impact of social comparison on satisfaction with care.
  - Informatics: Utilize health informatics tools to monitor patient satisfaction metrics and identify areas for improvement in addressing social comparison dynamics within healthcare delivery systems.
- Implications for practice:
  - Encourage healthcare professionals to be mindful of the influence of social comparison dynamics on patient behavior and well-being.
  - Foster open communication and supportive relationships with patients, addressing individual needs and preferences to minimize the effects of social comparison.
  - Promote a strengths-based approach to care that emphasizes each patient's unique journey and progress, helping patients focus on their own goals and achievements rather than comparing themselves to others.

By recognizing the role of social comparison in patient care, nurses and healthcare professionals can adopt strategies to support patients effectively, enhance treatment adherence, and improve overall satisfaction with care. Through empathy, understanding, and patient-centered approaches, healthcare providers can mitigate negative effects of social comparison and foster positive patient outcomes.

Stages

Development of a positive self-concept is important to healthy development. Children with a positive self-concept tend to be more confident, do better in school, act more independently, and are more willing to try new activities (Ferrer & Fugate, 2003; Maccoby, 1980). Formation of a positive self-concept begins in Erikson's toddlerhood stage, when children establish autonomy and become confident in their abilities. Development of self-concept continues in elementary school, when children compare themselves to others. When the comparison is favorable, children feel a sense of competence and are motivated to work harder and accomplish more. Self-concept is reevaluated in Erikson's adolescence stage, as teens form an identity. They internalize the messages they have received regarding

their strengths and weaknesses, keeping some messages and rejecting others. Adolescents who have achieved identity formation are capable of contributing positively to society (Erikson, 1968).

PATIENT CONVERSATIONS

Developing Self-Concept

Scenario: A parent asks his child's nurse if he can speak to the nurse privately. After the child is led outside by another nurse, the parent explains that the child just turned 12 years old and is experiencing problems in school that are affecting her self-concept. In particular, the child is struggling to earn passing grades in math, and following a recent growth spurt, she lacks the coordination needed to do well in gym class.

Nurse: Have you talked to the child about these problems?

Parent: No. I'm not sure what to say. I talked to her teacher, and the teacher said that all children have problems occasionally. The teacher suggested that I should be patient and let the problems sort themselves out. But my daughter seems depressed, and in recent weeks, she has refused to socialize with her friends. She also claimed to be sick one day last week and again this week, missing school as a result. That's why I brought her to see you. If she's sick, she needs to be treated. But I'm concerned that her real problem is frustration with math and gym classes, and she's feeling down on herself. What should I do?

Nurse: Twelve can be a difficult age as children prepare to become teenagers. I recommend talking to your daughter and encouraging her to tell you why she seems down. Tell her that everyone goes through times in life when things seem challenging and even scary. Tell her about times in your life when you felt down. Make sure she understands that you understand and that it's okay for her to tell you about any problems that she is having.

Parent: Aside from talking to her, what else should I do?

Nurse: It is important to make sure she feels safe and secure. Focus on her accomplishments and praise her for things that she does well. If you feel comfortable doing it, mention the math and gym classes and explain that everyone has areas in their lives where they struggle and even fail. Make sure she understands that it's okay to fail, and you still love her. Also, offer to help her. Maybe a tutor can help her understand math, and if you play basketball or another sport with her, maybe you can help her improve her coordination. Help her set realistic goals in these areas that are achievable, and then give her the tools she needs to reach those goals.

Parent: Thank you for listening and offering suggestions. I will try these things.

Self-Awareness (Infancy)

During infancy, the development of self-concept begins with the foundation of self-awareness. Infants gradually become aware of their own bodies and sensations, distinguishing themselves from their environment. This initial stage is marked by simple sensory experiences, such as recognizing their own movements, sounds, and bodily sensations. Infants may display rudimentary forms of self-recognition, such as looking at their own hands or exploring their reflections in a mirror. When babies encounter a mirror, their first instinct is to hit it, not realizing it is a reflection of themselves. This early stage signifies a lack of self-recognition, where babies do not yet comprehend that the image in the mirror is a reflection of themselves. However, newborns do have an innate ability to differentiate between their image and the background as well as between themselves and their surroundings, indicating an early sense of self as a distinct entity.

Around 2 months old, babies start manipulating the mirror image, or gaining awareness of how their bodies relate to the environment. This stage is critical as it marks the beginning of understanding their physical presence in the world. An example is being able to estimate the distance to an object and then reaching for it. Studies indicate that even though newborns can mimic facial expressions, it is around 2 months of age that they learn to manipulate their bodies in response to the environment (Krisch, 2023). As they enter into 3 and 4 months of age, they begin to demonstrate their ability to imitate an adult sticking out their tongue in a specific direction and reach for objects around them. These behaviors reflect a growing recognition of their own actions and their effects on the environment, reinforcing their developing self-concept.

Caregivers play a crucial role in nurturing self-awareness during infancy through responsive interactions and sensitive attunement to the infant's cues and needs. By providing loving care and attention, caregivers help infants develop a sense of security and trust in their own bodies and surroundings, laying the groundwork for further exploration and self-discovery.

Self-Recognition (18 Months)

Just as attachment is the main psychosocial milestone of infancy, the primary psychosocial milestone of childhood is the development of a positive sense of self. How does self-awareness develop? Infants do not have a self-concept, which is an understanding of who they are. If you place a baby in front of a mirror, the baby will reach out to touch their image, thinking it is another baby. However, by about 18 months, a toddler will recognize that the person in the mirror is themself. How do we know this? In a well-known experiment, a researcher placed a red dot of paint on children's noses before putting them in front of a mirror (Amsterdam, 1972). Commonly known as the mirror test, this behavior is demonstrated by humans and a few other species and is considered evidence of self-recognition (Archer, 1992). At 18 months old, they would touch their own noses when they saw the paint, surprised to see a spot on their faces. By 24 to 36 months old, children can name and/or point to themselves in pictures, clearly indicating self-recognition.

This newfound self-recognition reflects cognitive advances and an emerging sense of identity. Toddlers start to understand that they have personal attributes and characteristics that distinguish them from others. This awareness lays the groundwork for the development of self-esteem and self-concept, as children begin to form judgments about themselves based on their perceptions and experiences.

Caregivers and parents continue to play a crucial role during this stage by providing positive reinforcement and encouragement. They validate the child's emerging sense of self by acknowledging and celebrating their achievements, preferences, and individuality. By offering praise, affection, and support, caregivers contribute to the development of a positive self-image and self-esteem in the child.

Additionally, social interactions with peers become increasingly important during this stage, as children start to compare themselves to others. Through play and exploration with peers, toddlers learn more about their own abilities, preferences, and social roles. These interactions provide valuable opportunities for self-discovery and understanding as children navigate social dynamics and learn to negotiate their place within their peer group.

Self-Definition (3 Years)

By the age of 3 years, children enter a stage of self-concept development known as self-definition, where they begin to form a more coherent and elaborate understanding of themselves. During this crucial period, children start to describe themselves in concrete terms, using characteristics such as age, gender, physical attributes, and preferences to define their identity.

Language skills play a significant role in this process, as children become increasingly adept at expressing their thoughts, feelings, and perceptions. They may use phrases like, "I am a big boy/girl," "I like to play with dolls/cars," or "I have brown hair and blue eyes" to describe themselves to others. These self-descriptions reflect their growing awareness of personal attributes and preferences, as well as their ability to distinguish themselves from others.

Caregivers and educators continue to play a vital role in supporting children's self-definition during this stage. By providing opportunities for self-expression, validation, and positive reinforcement, adults help children develop a positive self-image and self-esteem. Encouraging children to talk about their interests, accomplishments, and feelings fosters a sense of autonomy and confidence in their identity.

Social interactions with peers also contribute to the development of self-definition. Through play, cooperation, and conflict resolution, children learn more about their own abilities, strengths, and limitations in relation to others. They begin to understand their social roles and develop a sense of belonging within their peer group, further shaping their self-concept.

At this stage, children's self-definition is still largely concrete and based on observable characteristics. However, it lays the groundwork for more complex aspects of self-concept to emerge in later stages of development. As children continue to grow and mature, their self-definition will become more nuanced and multifaceted, incorporating factors such as personality traits, values, beliefs, and aspirations. Through ongoing exploration, reflection, and social interaction, children gradually construct a richer and more comprehensive understanding of themselves and their

place in the world.

Self-Concept (6 to 7 Years)
Between the ages of 6 and 7 years, children undergo significant development in their self-concept, which encompasses their beliefs, perceptions, and evaluations of themselves. During this stage, children begin to internalize and integrate various aspects of their identity, including their abilities, personality traits, social roles, and relationships with others.

One key aspect of self-concept development during this stage is the emergence of social comparison and self-evaluation. Children become more aware of how they stack up against their peers in terms of academic performance, athletic abilities, social skills, and other domains. They may start to compare themselves to others and form judgments about their own competence and worth based on these comparisons. For example, 10-year-old Layla may say, "I'm kind of shy. I wish I could be more talkative like my friend Alexa."

At the same time, children's self-concept becomes increasingly influenced by feedback from others, including parents, teachers, peers, and media. Positive reinforcement and encouragement from significant others can bolster children's self-esteem and confidence, while criticism or negative feedback may lead to feelings of inadequacy or self-doubt.

Children also begin to develop a more differentiated and nuanced understanding of themselves, recognizing their strengths and weaknesses across different domains. They may identify specific interests, talents, and preferences that shape their sense of identity and self-worth. Additionally, children become more aware of societal norms and expectations, which can influence their beliefs about what it means to be "good," "smart," or "successful."

During this stage, caregivers and educators play a crucial role in supporting children's self-concept development. By providing opportunities for success, offering constructive feedback, and fostering a supportive and inclusive environment, adults can help children develop a positive and realistic sense of self. Encouraging children to explore their interests, set goals, and pursue their passions can also contribute to their self-confidence and self-esteem.

32.2 Factors Affecting Self-Concept

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify factors across the life span affecting one's self-concept
- Recognize psychological factors affecting one's self-concept
- Explain physiological factors affecting one's self-concept
- Describe cultural and behavioral factors affecting one's self-concept

Self-concept is a multifaceted perspective that individuals develop to understand themselves and their place in the world. The development of self-concept begins in infancy, and core components of self-concept are established in childhood. But like other features of the human body and mind, self-concept evolves and changes throughout individuals' lives.

Self-concept is influenced by psychological, physiological, cultural, and behavioral factors, which may motivate change in one or more of the components of self-concept, including self-esteem, self-image, self-identity, and social identity. As these components evolve, overall self-concept changes. Understanding how these factors can influence each component of self-concept helps healthcare professionals, educators, and counselors provide more effective care and support throughout individuals' lives.

Factors Across the Life Span

As individuals go through life, their self-concept is constantly interacting with their environment and is impacted by everything individuals do. The factors that affect self-concept include internal influences, such as emotions and physical health, as well as external influences, like social interactions and even the physical locations where individuals live and work. When these interactions and influences are positive, self-concept typically changes in a positive manner. Likewise, negative interactions and influences tend to motivate negative changes in self-concept.

Developmental Changes

Self-concept begins to develop in infancy as babies become self-aware, and by age 6 or 7 years, most children have

a basic self-concept. In developmental psychology, personal development is distinguished by distinct stages of life when individuals typically reach turning points. During each stage, self-concept evolves as individuals navigate life's challenges and changes. The stages of life identified by developmental psychologists include the following (Cherry, 2023; Malavanti, n.d.):

- Infancy (birth to 12 months): This stage is characterized by learning to trust others to meet basic needs, such as affection and nourishment.
- Early childhood (toddler to preschool, 1 to 5 years old): This stage is characterized by learning how to do tasks independently. The quality of early-attachment relationships with caregivers can shape a child's sense of security, trust, and self-worth. Parental warmth, responsiveness, and supportiveness contribute to the development of positive self-esteem and self-confidence. Early interactions with peers and caregivers provide opportunities for children to learn about themselves and their social roles, influencing their self-concept.
- Middle childhood (6 to 11 years old): This stage is characterized by gaining self-confidence, maturing physically, and learning how to take initiative. Children begin to compare themselves to others in various domains, influencing their self-evaluation and self-worth. During this stage, children also develop guilt when they violate boundaries, or their actions result in failure.
- Adolescence (12 to 17 years old): This stage is characterized by experimentation as teenagers overcome confusion about their roles and develop stronger identities. Physical changes, as well as exposure to social media and online interactions during puberty can affect adolescents' body image, self-esteem, and overall self-concept, including perceptions of popularity and attractiveness. Adolescents engage in identity exploration and self-discovery, experimenting with different roles, values, and beliefs.
- Young adulthood (18 to 35 years old): This stage is characterized by establishing relationships with others, including societal bonds. Intimate relationships, family dynamics, and social support networks contribute to adults' sense of belonging and self-worth.
- Middle adulthood (36 to 64 years old): This stage is characterized by becoming part of a family unit, establishing a sense of purpose, and making contributions to society. Life events such as marriage, parenthood, divorce, or loss can prompt reassessment of one's identity and values, influencing self-concept.
- Older adulthood (65 years old and older): This stage is characterized by reflection and assessing life. Transitioning into retirement can prompt reflection on one's life achievements, roles, and identity outside of work. Physical health, cognitive changes, and age-related challenges can influence older adults' self-concept and perceptions of aging. In addition, older adults may contemplate their legacy, contributions to society, and sense of purpose, shaping their self-concept in later life.

Previous Failures or Successes

As individuals age and live through each stage of life, they succeed at some things while failing at others. During childhood, this may include successes or failures in school, such as receiving high grades or struggling academically, which can shape children's beliefs about their intelligence and capabilities. Children also may have positive and negative experiences in social relationships, such as making friends easily or being bullied, that influence how they perceive their social skills and likability.

As children become adolescents, being accepted or rejected by peers can profoundly affect their self-esteem and sense of belonging. Adolescents also explore their identities. If they find a supportive social group that accepts their identity and makes them feel like they belong, this can enhance their self-concept. Likewise, if they do not feel that they fit in with a group, they may experience identity confusion or insecurity.

In adulthood, career successes, such as job promotions and awards, can boost self-confidence and contribute to a positive self-concept, while failure to achieve career goals can foster disappointment and a negative self-concept. In their personal lives, adults who have fulfilling relationships are more likely to have higher self-esteem than those who experience rejection and relationship breakups.

For older adults, a fulfilling retirement that allows for leisure, hobbies, and social engagement can contribute to a positive self-concept, while difficulties adjusting to retirement, including financial struggles, may lead to feelings of loss or diminished self-worth. If older adults have health challenges, overcoming these to lead a rewarding life can bolster their self-concept, while chronic illness or disability can lead to depression and feelings of inadequacy.

At all stages of life, success bolsters self-concept, fostering feelings of competence and worth. Failures, on the other

hand, may be distressing, causing feelings of inadequacy and diminished self-concept.

An important part of this is **self-efficacy**, which refers to an individual's belief that they can control their own capabilities and circumstances to achieve success. According to Albert **Bandura's self-efficacy theory of motivation**, individuals with a high sense of self-efficacy have a great deal of self-confidence based on their mastery in previous situations and the positive feedback they received about their performance. Likewise, people who experience more failures and receive less positive feedback typically have less self-confidence and self-efficacy (Lopez-Garrido, 2023).

Individuals' sense of self-efficacy influences their self-esteem that, in turn, affects their self-concept. Thus, when individuals are satisfied with their achievements and feel successful, they have a higher level of self-efficacy, which promotes higher self-esteem and leads to a more positive self-concept. Likewise, dissatisfaction and failures typically motivate individuals to have lower levels of self-efficacy, which leads to lower self-esteem as well as a more negative self-concept.

Psychological Factors

Self-concept is also affected by psychological factors, including emotional experiences and self-awareness. The Big Five personality traits are psychological indicators that shape self-concept, particularly self-image, which is a critical component of self-concept (Figure 32.6). These traits affect how individuals experience life and perceive their physical appearance and abilities. The Big Five personality traits include the following (Lim, 2023):

- The trait **openness to experience** includes characteristics such as creativity and intellectual curiosity. Individuals who are more open to experience are more likely to appreciate abstract thinking, have more vivid imaginations, and feel more comfortable with personal emotions.
- The **conscientiousness** trait includes characteristics such as self-discipline, goal setting, productivity, and competence. When individuals have a high level of conscientiousness, they tend to be more capable of planning and organizing their lives to achieve objectives.
- With **extroversion**, characteristics observed include sociability and openness. Individuals with a higher level of extroversion tend to be more assertive and outgoing. They also may demonstrate higher levels of energy and friendliness than those who are more introverted.
- The **agreeableness** trait includes characteristics such as empathy, respectfulness, and ability to trust others. Individuals with a higher level of agreeableness tend to be more compassionate and focused on the positive attributes of others.
- With **neuroticism**, the focus is on emotional stability. Individuals with a higher level of neuroticism tend to experience more depression, anxiety, anger, and vulnerability. They also tend to be more impulsive and self-conscious.

Each of the Big Five personality traits functions independently of the other traits. The levels of each trait are measured along a continuum, and personality tests can determine whether individuals exhibit a low or high score for each trait. Generally, individuals who score higher on openness to experience, conscientiousness, extroversion, and agreeableness, while scoring lower on neuroticism, tend to have more positive self-concepts (Lim, 2023).

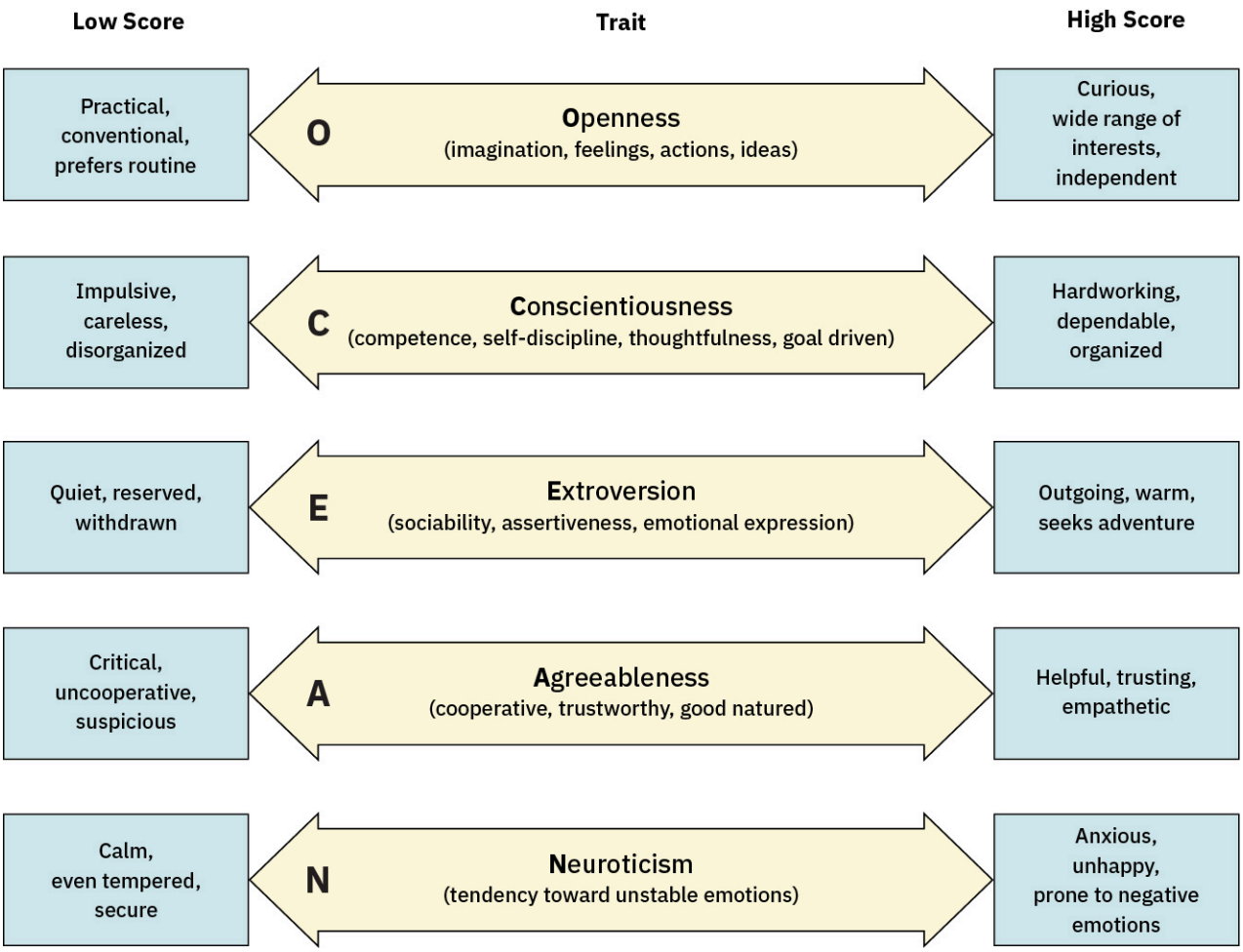

FIGURE 32.6 The Big Five personality traits of openness to experience, conscientiousness, agreeableness, neuroticism, and extroversion are psychological contributors to self-image, which is a critical component of self-concept. (modification of work from Lifespan Development. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Life Crisis or Stressors

All individuals experience stress, which refers to the emotional, psychological, and physical changes that our body undergoes in response to stimuli. Stress is another factor that can affect self-concept.

Some common sources of stress include relationships, parenting, work, finances, physical health, and social interactions. Even when individuals are not experiencing problems in these areas, just the pressure to keep everything in balance can cause stress. On a daily basis, things that may seem minor, like sitting in traffic, meeting work deadlines, getting a child to school on time, and remembering to return a sibling's telephone call can be sources of stress. In addition, any change in life is likely to cause stress. This includes positive changes, such as a promotion at work or buying a new car, as well as negative changes, such as losing a close friend or gaining too much weight.

Stress can be categorized into the following types (Scott, 2022):

- Short-term stress encountered in daily life is **acute stress**.
- Acute stress that happens routinely, causing ongoing frustration, is **episodic acute stress**. Examples of this include things like dealing with people who are always late for appointments, frequently repairing a toilet that will not stop running, and mediating between children who argue often.
- Ongoing stress caused by long-term problems, such as a debilitating medical condition, that create continuing issues is **chronic stress**.
- Fun and excitement caused by adrenaline in response to positive life events, such as getting married or winning a competition, is eustress. While eustress is regarded as a positive source of stress that helps individuals stay energized, it needs to be moderated because too much fun and excitement can be

overwhelming.

- A state of extreme discomfort, suffering, or mental anguish is distress. It can manifest as emotional, psychological, or physical pain caused by various stressors, challenges, or adverse circumstances. Distress often involves feelings of anxiety, sadness, or unease that impact a person's ability to function effectively in daily life.

Stress affects well-being and can impact individuals both physically and mentally. Some of the physical problems experienced in response to stress include headaches, muscle tension, body pains, digestive system issues, racing heartbeats, and reduced energy. The mental problems in response to stress may include difficulty sleeping, mood swings, irritability, anxiety, and depression.

If these problems are prolonged, they may have a negative impact on individuals' self-concept. This is particularly true for stress-related mental issues like anxiety and depression. Such issues tend to make individuals feel insecure and less optimistic. This may negatively affect their self-esteem and self-image, which are both important components of self-concept. Thus, stress is a factor that can adversely affect self-concept.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Referring a Patient for Mental Health Counseling

The nurse is gathering the medical history of a patient who has headaches and neck tension but no other symptoms. The nurse plans to give the patient some acetaminophen (per provider's orders), along with instructions to use an ice pack until the headache and tension improve and then get some rest.

The nurse notices the patient is nervous and talks about being too busy at work because of a staffing shortage. The patient is working ten to twelve hours per day while taking care of two small children and an aging parent. The patient's busy schedule, compounded by caregiving responsibilities and work demands due to staffing shortages, creates significant distress. While discussing these challenges, the patient starts crying. The patient's nervousness and tears underscore the psychological toll of these stressors on the patient's self-concept. The patient may feel overwhelmed, inadequate, or unable to meet all their responsibilities, which can diminish self-esteem and confidence. These feelings can distort self-perception, leading to a negative self-concept characterized by doubt and emotional strain.

The nurse recognizes that the patient's headaches and neck tension likely are a response to stress. After giving the patient acetaminophen, the nurse takes action by asking the clinic's psychologist to talk to the patient and help identify ways the patient can better manage stress. By providing pain relief and involving the clinic's psychologist, the nurse takes proactive steps to address both the physical symptoms and the underlying psychological impact of stress. This approach aims to support the patient in developing effective coping strategies and improving stress management skills.

Grief and Loss

Throughout life, individuals experience loss. Loved ones pass away. Friends move to another state. Jobs are taken away when a company downsizes. Favorite restaurants go out of business. Graduation day arrives and school is over. These situations and many others cause individuals to lose people and things that are important to them, forever altering their lives.

Such losses, particularly when someone dies, are likely to trigger grief, which is deep emotional discomfort and sorrow. Grief is another factor that affects self-concept. As individuals go through the five stages of grief as identified by the Kübler-Ross model—denial, anger, bargaining, depression, and acceptance—they experience physical and mental issues (see Kübler-Ross's Five Stages for more information).

For example, grief may cause individuals to have physical problems such as body aches and pains, loss of appetite, fatigue, higher blood pressure, insomnia, dehydration, forgetfulness, confusion, and brain fog. Emotionally, individuals may experience anxiety, hostility, guilt, despondency, and loneliness, as well as anger and depression. When grief is caused by the loss of a loved one, some individuals even experience **identity confusion**, which is the feeling that part of them also died when their loved one died (Bellet et al., 2020).

If these symptoms persist, grieving individuals may change the way they regard themselves and their lives, including their feelings about the future. This change in perspective is likely to alter individuals' self-concept.

For example, some individuals may experience identity reconstruction as they struggle to make sense of the changed circumstances caused by their loss. If the individual loses something central to their self-concept and self-worth, such as a partner or a job, they may even lose their sense of identity.

Sometimes, loss triggers feelings of guilt, regret, or inadequacy as individuals blame themselves for perceived failings or shortcomings that made them unable to prevent the loss. Such feelings can cause individuals to have negative self-evaluations leading to diminished self-worth and eroded self-esteem.

Grief often prompts individuals to confront existential questions about the meaning and purpose of life, their beliefs, values, and mortality. This existential questioning can profoundly impact self-concept as individuals grapple with their place in the world and their sense of self in the face of loss and mortality.

Loss also can disrupt social connections and support networks, leading to feelings of isolation and loneliness. Social roles and identities tied to the lost relationship or context may also be affected, further complicating individuals' sense of self within their social environment.

Individuals may adopt various coping strategies to manage grief, which can influence their self-concept. Some may seek support from others, engage in self-reflection, or find solace in religious or spiritual beliefs, while others may withdraw or engage in avoidant behaviors that undermine their self-esteem and sense of identity.

Grief may motivate individuals to search for meaning in their loss and find ways to integrate the experience into their self-narrative. This process of meaning-making can lead to personal growth, resilience, and a deeper understanding of oneself, ultimately shaping one's self-concept in more adaptive ways. Through the process of mourning and adaptation, individuals may develop a stronger sense of self, greater compassion, and a deeper appreciation for life, ultimately leading to a more resilient and enriched self-concept.

PATIENT CONVERSATIONS

What If Your Patient Keeps Crying and Seems Confused?

Scenario: The nurse enters the patient's room to begin an assessment and finds the patient crying. When the nurse starts talking, the patient stops crying but does not seem able to focus on what the nurse is saying.

Nurse: Hi, my name is Chandler, and I am going to be your nurse today. Please verify your name and date of birth for me.

Patient: Where am I?

Nurse: You are in the hospital emergency room. Your neighbor found you wandering around outside your house, and you seemed confused. Please tell me your name and date of birth.

Patient: My name is Melissa, and I was born in 1959.

Nurse: Okay, Melissa, that's good. Please tell me your last name. And what is your birthday?

Patient: My last name is Garcia, and my birthday is January 17.

Nurse: Good. Melissa, I need to take your vital signs.

Patient: (sobbing) Please don't hurt me. Roger is gone, and I can't do this by myself.

Nurse: Melissa, I won't hurt you. I promise. Who is Roger?

Patient: (crying harder) Roger is my partner. He's gone.

Nurse: Did something happen to Roger?

(The patient nods but is crying too hard to speak. The nurse hands the patient a tissue, sits in a chair next to the patient, and occasionally pats the patient on the shoulder while the patient cries. When the patient's crying

subsides, the nurse speaks again.)

Nurse: Would you like to tell me about Roger?

Patient: (choking back tears) Roger was in a car accident, and he is gone. (The patient begins crying again and then looks at the nurse.) Where am I and who are you?

(The nurse recognizes the patient may need a psychiatric evaluation.)

Nurse: My name is Chandler, and you are at the hospital. Please excuse me, I need to make a quick phone call.

Scenario follow-up: Patient nods and continues crying. Keeping the patient in view, the nurse steps outside the room and contacts the provider to report the concerns and recommend a mental health evaluation. The nurse goes back inside the room and sits with the patient while she continues to cry. In a few minutes, a psychiatric nurse enters the room and gently leads the patient away to a quiet area to evaluate her for identity confusion related to grief.

Physiological Factors

Physiological factors exert a profound influence on one's self-concept, permeating through mood, cognition, and overall well-being. Neurotransmitters and hormones, such as serotonin and dopamine, regulate mood and emotional states, with imbalances contributing to mood disorders like depression and anxiety, distorting perceptions of oneself and the world. Chronic illnesses, disabilities, or injuries alter physical abilities and appearance, impacting self-esteem and perceived competence. Persistent pain or discomfort from health conditions can lead to frustration and diminished self-worth, eroding self-concept. Disrupted sleep patterns, poor nutrition, and sedentary lifestyles impair cognitive function and emotional regulation, affecting self-perception and confidence. Moreover, genetic predispositions interact with environmental factors, shaping susceptibility to physiological challenges and influencing self-concept.

When individuals' systems function normally and they have no physiological issues, they generally experience better health outcomes. For example, when individuals' renal systems function properly, their kidneys, bladder, ureters, and urethra work in normal ranges to help control fluid in their bodies, guarding against problems such as incontinence and dehydration. Such physical well-being can enhance self-perception by fostering a sense of physical competence and reliability. Mentally, the absence of physiological issues related to the renal system can also positively impact self-concept. Individuals are less likely to experience anxiety or worry related to health concerns, allowing them to focus more on their personal goals, relationships, and overall quality of life.

If individuals have physiological issues with any system in their bodies, they may not feel well. For example, individuals who routinely consume too much caffeine may cause physiological issues for themselves, such as insomnia, caffeine jitters, and irritability. Other physiological issues may be the result of disease, such as respiratory problems that lead to asthma. When individuals experience any problem rooted in a physiological issue, that problem is likely to reduce their energy levels and negatively impact their sense of well-being, which has a negative effect on their self-concept.

Aging

As individuals age, physiological changes become increasingly prominent, impacting various aspects of their lives and ultimately influencing their self-concept. Physiological factors of aging encompass a spectrum of transformations, from alterations in physical appearance and health conditions to changes in cognitive function and social dynamics. These changes can challenge individuals' perceptions of themselves and their capabilities, leading to shifts in self-esteem, self-image, and overall well-being.

PATIENT CONVERSATIONS

Reflecting with Your Patient about Aging

Scenario: The nurse enters the examination room and finds an older patient rubbing his knee. The nurse notices a cane beside the patient's chair.

Nurse: Hello. I'm Tabitha, and I'll be your nurse today. What health concern brings you here today?

Patient: My knee is swollen, and it hurts. I can't walk up and down stairs, and I have to use the cane to help me get out of chairs.

Nurse: When did the problem start?

Patient: It's been an off and on problem for about six months, but this is the worst that it's been. I've never had swelling before, and the pain is worse now than ever before.

Nurse: Have you taken any medication to help with the pain and swelling?

Patient: I took some ibuprofen, which usually helps. But I can't tell that it's making a difference this time. That's why I decided to come in to see you.

Nurse: Okay. Please raise your pant leg so I can examine the knee.

Patient: (The patient raises the pant leg so Tabitha can examine the knee.) This is frustrating. I recently turned 74 years old, and I know that this is just part of getting older. I have friends younger than me who have already had knee replacements. They tell me that I need to get one, but even if that's something I have to do, I'm not ready to do it now. Just three years ago, I ran a marathon, and until about six months ago, I took long walks several times per week. I could still jog as recently as last summer. But I guess my age is catching up with me because I just can't move around as well now as I could. I hate to admit it, but I guess I'm becoming an old person, and I'll have to start acting like one, whatever that means. (Patient smiles sadly at the nurse.)

Nurse: I understand, and I'm sorry that this is frustrating. We will talk with the provider to see if they can prescribe some medications that are stronger than ibuprofen. We can also set you up with a physical therapist who can show you some exercises to do that can help with mobility. We'll keep you going as well as possible for as long as possible. Also, if you would like to talk to someone about the challenges of aging, we have some excellent counselors. (The nurse smiles at the patient, and he looks grateful.)

Scenario follow-up: The patient receives a prescription for a corticosteroid to help relieve the swelling and pain in his knee. In addition, he has an appointment with a physical therapist to help him with exercises to increase mobility. The healthcare provider also encourages the patient to do things at home, such as elevate the knee when it is swollen and use ice and heat to relieve the pain. Finally, the patient makes an appointment with one of the clinic's counselors to talk about coping with changes in the body as we age.

One of the most noticeable physiological changes associated with aging is the decline in physical abilities and changes in appearance. Reduced mobility, loss of muscle mass, and changes in body composition can affect how individuals perceive their physical competence and attractiveness. These alterations may trigger feelings of dissatisfaction with one's body image and a sense of loss of independence, particularly if they were once highly active or physically fit. Consequently, individuals may grapple with adjusting to their changing bodies and the implications for their self-concept.

Age-related cognitive decline, such as memory lapses and slower cognitive processing, can challenge individuals' perceived cognitive abilities and competence. Tasks that were once routine and effortless may become more challenging, leading to frustration and doubts about one's mental sharpness and capabilities. This cognitive decline can impact self-concept by undermining confidence and self-assurance, especially in situations that require cognitive agility and quick thinking.

In addition to physical and cognitive changes, managing chronic health conditions becomes increasingly prevalent with age and can significantly impact self-concept. Coping with conditions such as arthritis, diabetes, or cardiovascular disease may require adjustments to daily routines, lifestyle habits, and social interactions. Individuals may experience fluctuations in self-esteem and confidence as they navigate the limitations imposed by their health conditions and confront uncertainties about their future health and well-being.

Transitions in social roles and relationships, such as retirement, empty nesting, and loss of loved ones, can prompt profound adjustments in identity and purpose. Retirement, for example, may lead to a loss of professional identity and a shift in priorities, raising questions about one's sense of purpose and contribution to society. Losses of loved

ones can trigger feelings of grief and loneliness, challenging individuals' perceptions of themselves within the context of their social relationships and support networks.

Attitudes toward aging also play a significant role in shaping self-concept in later life. Positive attitudes, characterized by a sense of acceptance, resilience, and gratitude for the opportunities that come with age, can foster a healthy and adaptive self-concept. Conversely, negative stereotypes and ageist attitudes prevalent in society may contribute to feelings of self-doubt, inadequacy, and diminished self-worth among older adults.

Aging also affects one's self-concept by impacting self-esteem. As self-esteem develops in childhood, it tends to improve considerably between the ages of 15 and 30 years, and then continues to gradually improve before peaking at around age 60 years. For most individuals, self-esteem remains constant during their 60s but then begins a gradual decline after age 70 years. Since self-esteem is a major component of self-concept, the changes in self-esteem caused by aging tend to affect self-concept (Fagan, 2018).

The challenges associated with aging, including physiological changes, declining health, and shifts in social roles, can indeed make the aging process frustrating and emotionally taxing. As individuals grapple with the physical and cognitive changes that come with age, they may experience a range of emotions, from frustration and anxiety to sadness and loss. These feelings can accumulate over time, potentially leading to mental health problems such as anxiety and depression (Kang & Kim, 2022).

Illness

Physiological factors of illness can significantly influence one's self-concept by challenging perceptions of health, competence, and identity. The physical manifestations of illness often bring with them a multitude of symptoms and limitations that can drastically alter how individuals perceive themselves. Symptoms such as chronic pain, fatigue, or mobility impairments not only challenge one's physical capabilities but also chip away at their sense of autonomy and self-reliance. Tasks that were once mundane may now feel like insurmountable obstacles, leading to feelings of frustration, inadequacy, and a profound sense of loss. Moreover, changes in physical appearance resulting from illness or treatment can trigger a profound upheaval in body image and self-esteem. Individuals may find themselves grappling with feelings of shame, embarrassment, or even disgust as they confront a body that no longer aligns with their sense of self.

Functionally, illness-induced impairments can disrupt not only one's daily routines but also their social roles and relationships. The inability to perform familiar tasks or fulfill expected roles, such as caregiving or financially providing for their families, can leave individuals feeling stripped of their sense of purpose and contribution. Additionally, illness-related functional limitations may prompt shifts in social dynamics, leading to feelings of isolation, alienation, or perceived burdensomeness. The erosion of social connections and the perceived loss of identity within social circles can exacerbate feelings of loneliness and further strain one's self-concept.

Amid the turmoil of illness, individuals may employ various coping mechanisms to navigate the emotional landscape. Adaptive coping strategies, such as seeking social support and acceptance, and finding meaning in illness experiences, can serve as pillars of resilience, buffering against the negative impacts of illness on self-concept. Conversely, maladaptive coping mechanisms, such as denial, avoidance, or self-blame, may exacerbate feelings of distress and further erode self-esteem and self-worth.

The emotional toll of illness extends beyond the physical realm, infiltrating the core of one's being. Fear, anxiety, and despair can permeate every aspect of life, affecting perceptions of oneself and one's capabilities. These negative emotions can take a significant toll on mental health and can potentially result in mood disturbances, such as depression.

CLINICAL JUDGMENT MEASUREMENT MODEL

Form a Hypothesis: Unveiling the Impact of Illness on Self-Concept

Scenario: Imagine a middle-aged patient named John who has recently been diagnosed with multiple sclerosis. Prior to his diagnosis, John saw himself as an active and independent individual, always taking care of his family and excelling in his career. However, with the onset of his illness, John's sense of self undergoes a significant transformation. He begins to feel like a burden to his family, as he now requires assistance with daily tasks that

he once took for granted. Additionally, the physical limitations imposed by his illness prevent him from engaging in activities he used to enjoy, leading to feelings of frustration and helplessness. Over time, John's self-concept shifts as he grapples with the loss of his previous identity and struggles to redefine himself in the context of his illness. Despite these challenges, John gradually learns to accept support from his loved ones and discovers new ways to find purpose and meaning in his life, ultimately reshaping his self-concept to incorporate his experiences with illness.

- Identifying cues: John's change in behavior, such as withdrawing from activities he once enjoyed and expressing feelings of frustration and helplessness, are cues that suggest a shift in his self-concept. Additionally, his perception of himself as a burden to his family indicates a negative impact on his self-image. These cues may indicate a struggle to reconcile his previous identity with the challenges imposed by his illness.
- Analyzing cues: The cues observed in John's behavior and self-perception suggest a disruption in his self-concept due to the onset of a chronic illness. His withdrawal from activities and feelings of frustration may stem from a loss of independence and the inability to engage in previously valued roles and activities. Furthermore, his perception of being a burden may indicate feelings of guilt and inadequacy, which can further erode his sense of self-worth and identity.
- Forming hypothesis: Based on the identified cues and analysis, a hypothesis could be formulated that John's self-concept has been significantly impacted by his chronic illness. The hypothesis may propose that John is experiencing a period of adjustment and identity redefinition as he navigates the challenges imposed by his illness. Furthermore, it may suggest that John's struggle to maintain a positive self-concept is influenced by societal expectations of independence and self-sufficiency, which are challenged by his illness. This hypothesis would guide further assessment and intervention to support John in coping with his illness and rebuilding his sense of self.

Cultural and Behavioral Factors

Cultural and behavioral factors affect an individual's self-concept, influencing not only how they perceive themselves but also how they navigate their interactions with others and the world around them. Cultural norms and values provide a framework within which individuals develop their understanding of identity, morality, and social roles, influencing behaviors and attitudes from early childhood onward. Meanwhile, behavioral patterns, encompassing a diverse range of actions and interactions, further contribute to the formation of self-concept. These factors interact in complex ways, with socialization processes, family dynamics, media exposure, and individual experiences all playing roles in shaping self-perception. From traditional cultural practices to contemporary influences like social media, these factors collectively shape individuals' sense of identity, belonging, and self-worth, highlighting the dynamic interplay between societal expectations and personal identity. Understanding the impact of cultural and behavioral factors on self-concept provides valuable insights into the complexities of human identity and the ways in which individuals navigate their social and cultural contexts.

Cultural Norms and Values

Cultural norms and values serve as the guiding principles that shape individuals' understanding of their identity, morality, and social roles within their communities. These norms are often deeply ingrained and transmitted through generations. For instance, in cultures where collectivism is emphasized, individuals may prioritize the needs of the group over personal desires, fostering a sense of interconnectedness and communal identity. In contrast, cultures that value individualism may encourage self-expression, autonomy, and the pursuit of personal goals.

Socialization processes further reinforce cultural norms and expectations, providing individuals with a framework in relation to others. Family, as the primary agent of socialization, plays a pivotal role in transmitting cultural values and traditions to younger generations. Parents, siblings, and extended family members impart cultural knowledge through language, customs, and rituals, instilling a sense of cultural identity and belonging within individuals. Additionally, educational institutions, peer groups, and media representations reinforce cultural narratives and ideals. Through these interactions, individuals internalize societal norms and expectations, incorporating them into their self-concept.

Social media is a significant influencer of self-concept. Through social media, individuals interact more with others,

learning how others behave and organize their lives. Social media also provides an overwhelming collection of information, including material from questionable sources. Social media motivates individuals to compare themselves to others. If these comparisons are favorable, individuals tend to have a more positive self-concept. If the comparisons are unfavorable, individuals may have a more negative self-concept. Social media's impact on users can be powerful, even shaping the way individuals construct their identities (Ruther et al., 2023).

LINK TO LEARNING

Learning more about how social media affects individuals (https://openstax.org/r/77socialmedia) can provide insight into the cultural and behavioral factors that affect self-concept.

Social comparison processes further refine self-concept by providing individuals with reference points for evaluating their own attributes and achievements and measuring their own worth. For example, in cultures where material wealth and status are prized, individuals may equate success with financial achievement and social recognition, shaping their self-concept around notions of wealth and prestige. Conversely, in cultures that prioritize spiritual fulfillment and communal well-being, individuals may derive their sense of self-worth from their contributions to the community and adherence to ethical principles.

Cultural identity and ethnicity shape self-concept, particularly for individuals from underrepresented groups. Cultural identity encompasses shared beliefs, traditions, and values that provide a sense of belonging and connection to one's heritage. For members of underrepresented communities, cultural identity serves as a source of pride and resilience, offering a sense of solidarity and empowerment in the face of discrimination and adversity. However, experiences of prejudice, discrimination, and marginalization can impact self-esteem and contribute to negative self-perceptions, highlighting the complex interplay between cultural identity and self-concept.

Acculturation and adaptation processes are central for individuals navigating multiple cultural contexts, such as immigrants. Acculturation involves balancing the preservation of one's cultural heritage with the adoption of the dominant culture's norms and practices, leading to a negotiation of identity and the development of hybrid identities that reflect a synthesis of cultural influences. However, experiences of acculturative stress, discrimination, and identity conflict can impact self-concept and mental health outcomes, highlighting the complexities of cultural adaptation.

Gender Roles and Expectations

Gender roles and expectations exert a profound influence on one's self-concept, shaping beliefs about identity, behavior, and social roles based on perceived gender. From early childhood, individuals are socialized into gendered norms and stereotypes that dictate appropriate roles, behaviors, and interests for males and females. Young males may be encouraged to be assertive, independent, and competitive, while young females may be socialized to be nurturing, empathetic, and accommodating. These gendered expectations are reinforced through various socialization agents, including family, peers, educational institutions, and media representations, perpetuating a binary understanding of gender and reinforcing traditional gender norms. As individuals internalize these societal messages, they construct their self-concept around notions of masculinity and femininity, which influence various aspects of their lives, including career aspirations, interpersonal relationships, and body image. Deviations from gender norms may be met with social sanctions or stigma, leading individuals to conform to societal expectations to maintain a positive self-concept.

PATIENT CONVERSATIONS

Empowering Patients: Addressing Gendered Expectations in Self-Concept

Scenario: During a routine checkup at the clinic, the nurse notices that a young patient, Sam, seems withdrawn and tense. Sam is fidgeting with his hands and avoiding eye contact as he waits for his appointment.

Patient: I've been feeling really overwhelmed lately, but I just can't seem to open up about it.

Nurse: It sounds like you're going through a tough time. Would you like to talk about what's been bothering you?

Patient: I don't know. . . . It's just that I've always been taught to be strong and not show any weakness. But lately, everything feels like it's piling up, and I'm not sure how to handle it.

Nurse: It's okay to feel overwhelmed sometimes. It's natural to need support, regardless of gender. You don't have to carry everything alone.

Patient: I know, but it's hard to break out of those expectations. Growing up, I was always told that boys don't cry or ask for help. It's like I've internalized those messages, and now I'm struggling to reach out.

Nurse: It's common for societal expectations around gender roles to influence how we perceive ourselves and how we express our emotions. But it's important to remember that seeking help doesn't make you any less strong or capable. In fact, it takes courage to reach out when you're struggling.

Patient: Yeah, you're right. I guess I've just been holding onto these beliefs for so long that I didn't even realize how much they were affecting me.

Nurse: It's a process, and it takes time to challenge those ingrained beliefs. But know that you're not alone, and I'm here to support you every step of the way.

Scenario follow-up: This conversation highlights how societal expectations surrounding gender roles can influence an individual's self-concept and willingness to seek help, even in moments of distress. By acknowledging these influences and providing support, the nurse helps the patient navigate their struggles with greater awareness and resilience.

Social Behavior

Behavioral factors, comprising a diverse array of actions, habits, and interactions, affect one's self-concept. Social behavior, for example, serves as both a mirror and a lens through which individuals view themselves. Positive social interactions, characterized by warmth, acceptance, and affirmation, contribute to feelings of belonging and acceptance, bolstering self-esteem and reinforcing a positive self-concept. Conversely, negative social experiences, such as rejection or ostracism, can inflict wounds upon the psyche, fostering feelings of isolation, unworthiness, and social anxiety. The quality of interpersonal relationships, therefore, plays a pivotal role in shaping self-concept, as individuals internalize feedback from others and construct narratives about their own social worth.

Health behaviors, encompassing actions related to physical and mental well-being, also exert a significant influence on self-concept. Engaging in behaviors that promote health and vitality, such as regular exercise, balanced nutrition, and adequate sleep, fosters a sense of self-efficacy and mastery over one's body and mind. Conversely, neglecting self-care practices or engaging in unhealthy habits may engender feelings of guilt, shame, or self-blame, tarnishing perceptions of self-worth and contributing to a negative self-concept. The connection between physical and psychological well-being underscores the importance of holistic self-care in nurturing a positive self-concept.

Behavioral factors encompass individuals' coping strategies and regulatory mechanisms, which influence how they navigate life's challenges and adversities. Effective coping strategies, such as problem-solving, seeking social support, and engaging in relaxation techniques, enhance resilience and promote a sense of agency in the face of adversity. By contrast, maladaptive coping mechanisms, such as avoidance or denial, may exacerbate feelings of helplessness and undermine self-concept. The ways individuals regulate their behavior in response to stressors, therefore, play a crucial role in shaping perceptions of competence, control, and self-efficacy.

Self-concept is also shaped by how individuals present themselves to others and express their identities. Clothing choices, grooming habits, and nonverbal behaviors serve as outward manifestations of internal self-concept, shaping how individuals are perceived and treated by others. Engaging in activities and hobbies that align with personal interests and values allows individuals to express their authentic selves, fostering a sense of congruence and authenticity in their self-concept. Furthermore, the seeking and processing of feedback from others contribute to the development and refinement of self-concept, as individuals selectively attend to or discount feedback based on their own beliefs and biases.

Summary

32.1 Foundations of Self-Concept

Our personal identity and self-concept, according to Rogers, develops throughout the life span beginning in childhood and is molded by experiences, perceptions, and evaluation of others. The primary components of self-concept are fundamental in developing personal identity, body image, self-esteem, and role performance.

Trying to understand how people see themselves and how this can change in different situations can be challenging. To do this well, it is suggested to use different methods, consider how the study relates to real-life situations, and make sure the study is as close to a natural setting as possible. There are a variety of tools available, depending on the patient situation, that the provider can use to accomplish this. Understanding oneself is crucial for healthy functioning and promoting realistic decision-making regarding key aspects of life.

Just as forming strong connections is a crucial milestone in infancy, a significant step in childhood is developing a positive sense of self. Formation of a positive self-concept begins in Erikson's toddlerhood stage, when children establish autonomy and become confident in their abilities. Development of self-concept continues in elementary school, when children compare themselves to others. Self-concept is reevaluated in Erikson's adolescence stage, as teens form an identity. They internalize the messages they have received regarding their strengths and weaknesses, keeping some messages and rejecting others.

32.2 Factors Affecting Self-Concept

As individuals grow and change across their life spans, many factors affect their self-concepts, including psychological, physiological, cultural, and behavioral influences. Processes like developmental changes and aging affect individuals' bodies and minds, changing how they perceive themselves and the world. More personal experiences, such as failure, success, stress, grief, and illness, can have both positive and negative impacts on individuals' mental and physical processes. Personality traits help determine whether individuals approach life with a positive or negative outlook, and cultural influences, including social media, impact individuals' perspectives of themselves and the world. Any of these factors may affect any component of self-concept, including self-esteem, self-image, self-identity, and social identity, motivating changes in overall self-concept.

Key Terms

actual self the attributes that an individual believes they possess, based on personal information as well as input from others

acute stress short-term stress encountered in daily life

agreeableness one of the Big Five personality traits; includes characteristics such as empathy, respectfulness, and ability to trust others

Bandura's self-efficacy theory of motivation individuals with a high sense of self-efficacy have a great deal of self-confidence based on their mastery in previous situations and the positive feedback they received about their performance

body dysmorphic disorder (BDD) a mental health condition characterized by obsessive preoccupation with perceived flaws or defects in physical appearance that are not observable or appear minor to others

body image a component of self-concept that reflects an individual's perception and evaluation of their physical appearance, based on societal standards, cultural norms, and personal experiences

chronic stress ongoing stress caused by long-term problems

cognitive-behavioral therapy (CBT) a structured talk therapy that focuses on problematic thinking and behaviors and helps to create healthy thinking, behaviors, and coping skills

competence the degree of effectiveness and proficiency individuals perceive in themselves

conscientiousness one of the Big Five personality traits; includes characteristics such as self-discipline, goal setting, productivity, and competence

episodic acute stress stress that happens routinely, causing ongoing frustration

extroversion one of the Big Five personality traits; includes characteristics such as sociability and openness

false self pretending to be someone we are not

global self idea that we are all part of a collective being, or global family, and our actions have far-reaching impacts

ideal self attributes that individuals aspire to possess
identity confusion occurs in response to grief when individuals feel that part of themselves also died when their loved one died
impostor syndrome a psychological pattern in which individuals doubt their skills, talents, or accomplishments and have a persistent internalized fear of being exposed as a "fraud"
neuroticism one of the Big Five personality traits; focuses on emotional stability
openness to experience one of the Big Five personality traits; includes characteristics such as creativity and intellectual curiosity
ought self the internalized expectations and standards that individuals believe they should or must adhere to in order to meet external demands, social norms, or moral obligations
personal identity a component of self-concept that involves the sense of individuality, including personal traits and beliefs, that distinguishes a person from others
power an individual's perception of their ability to influence or control outcomes, resources, or other individuals within their social environment
reflected appraisal the influence on our self-concept based on what others think of us
role performance how individuals perceive and execute their roles in different contexts within the family, work, or social environment
Rosenberg Self-Esteem Scale a widely used self-report instrument for evaluating individual self-esteem
self-awareness being able to recognize and understand one's own emotions
self-concept the organized and consistent set of perceptions and beliefs an individual holds about themselves; includes an individual's self-esteem, self-image, self-identity, and social identity
self-efficacy an individual's belief that they can control their own capabilities and circumstances to achieve success
self-esteem the overall positive or negative evaluation of oneself that reflects an individual's feelings of self-worth and confidence
self-evaluation the process by which individuals evaluate their own thoughts, feelings, behaviors, and overall sense of self
self-expectation an individual's perspective on what they should do, think, or feel
self-identity personal characteristics, roles, and affiliations that define an individual
self-image the mental and emotional view of one's physical appearance and abilities
self-knowledge a philosophical term used to identify how individuals perceive their mental state, based on emotions, personality traits, relationships, behavioral patterns, opinions, beliefs, values, needs, goals, preferences, and social identity
self-perception how individuals perceive themselves in terms of their abilities, competencies, and characteristics
self-reflection thoughtful contemplation about one's actions, motivations, and personal growth, based on the evaluation of one's values, goals, and standards
social comparison theory process of evaluating ourselves in comparison to others and using those judgments to influence our self-concept
social identity concept of self that is formed through connections with societal groups
symbolic interactionism a model positing that the way we see ourselves is influenced by how others see us
virtue the moral dimension of self-evaluation, encompassing individuals' reflections on their character, values, and ethical conduct

Assessments

Review Questions

1. How does self-image differ from self-identity?
    a. Self-image reflects the overall value and worth one assigns to oneself, while self-identity encompasses an individual's personal characteristics, roles, and affiliations.
    b. Self-image focuses on one's physical appearance and abilities, while self-identity encompasses an individual's personal characteristics, roles, and affiliations.
    c. Self-image encompasses an individual's personal characteristics, roles, and affiliations, while self-identity focuses on one's physical appearance and abilities.

d. Self-image is formed through connections with societal groups, while self-identity reflects the overall value and worth one assigns to oneself.

2. Why is role performance important?
   a. Role performance helps with resilience, positive coping mechanisms, and the ability to navigate life's challenges.
   b. Role performance helps to overcome feelings of inadequacy, anxiety, and vulnerability.
   c. Role performance positively reinforces self-concept and contributes to a sense of purpose and fulfillment.
   d. Role performance enables a more accurate perception and evaluation of our physical appearance, which improves body image.

3. According to Brown (2009), what five sources help us develop self-knowledge?
   a. emotional states, personality traits, behavioral patterns, values, and goals
   b. personality traits, behavioral patterns, social comparisons, reflected appraisals, and goals
   c. role performance, emotional states, values, goals, and reflected appraisals
   d. physical world, social comparisons, reflected appraisals, introspection, and self-perception

4. Which component of self-evaluation focuses on recognizing and understanding one's emotions, thoughts, and behaviors?
   a. self-reflection
   b. self-perception
   c. self-awareness
   d. self-esteem

5. In the process of reflected appraisal, what affects our self-concept?
   a. what other people think of us
   b. our ability to overcome our false self
   c. growth of our ideal self
   d. whether we feel part of a collective being

6. Matilda is in middle adulthood. What self-concept factor would she most likely be faced with?
   a. She is experimenting and overcoming confusion about her role in society and developing a stronger identity.
   b. She is establishing relationships with others, along with societal bonds.
   c. She is busy, focused on establishing a sense of purpose for life and contributing to society.
   d. She is reflecting and assessing her life and recognizing her personal contributions to society.

7. How does self-efficacy affect individuals' ability to succeed or fail?
   a. Individuals with a low self-efficacy have a great deal of self-confidence and believe they can control their capabilities and circumstances, enabling them to achieve success.
   b. Individuals with low self-efficacy also have lower rates of anxiety and depression, which makes it easier for them to succeed.
   c. Individuals with high self-efficacy also have higher rates of neuroticism, which makes it easier for them to succeed.
   d. Individuals with a high self-efficacy have a great deal of self-confidence and believe they can control their capabilities and circumstances, enabling them to achieve success.

8. As the unit manager, you must decide which nurse on your shift will be in charge during your absence. You need a nurse who is competent, productive, self-disciplined, and can set goals for patients. What Big Five personality trait are you seeking in this nurse?
   a. extraversion
   b. conscientiousness

c. agreeableness
d. openness to experience

9. Your patient is incredibly perky, hyped up about several upcoming personal and social events. What kind of stress is your patient experiencing?
   a. eustress
   b. episodic acute
   c. acute
   d. chronic

10. Your patient just turned 70 years old, and you are concerned that over the next few years, the patient's self-concept will decline. Why are you concerned about this?
    a. After age 70 years, many individuals experience an increase in neuroticism, which tends to negatively impact self-concept.
    b. After age 70 years, many individuals experience a gradual decline in self-esteem, which tends to negatively impact self-concept.
    c. After age 70 years, many individuals become extraverted, which tends to negatively impact self-concept.
    d. After age 70 years, many individuals experience financial difficulties, which tend to negatively impact self-concept.

11. Your patient insists that she can no longer handle life because she feels like a part of herself died too when she lost her partner. What is your patient experiencing?
    a. depression
    b. physiological change
    c. chronic stress
    d. identity confusion

Check Your Understanding Questions

1. When we experience a discrepancy between our self-concept and reality, what can happen?
2. When we experience an internal conflict between our actual self and our ideal or ought self, how can this benefit us?
3. What is the difference between upward social comparison and downward social comparison, and how do these comparisons affect us?
4. How do the Big Five personality traits affect self-concept?
5. Why are the stages of life and developmental changes important to individuals' self-concept?
6. What are physiological factors and how can they affect self-concept?

Reflection Questions

1. What is personal identity, and how does it contribute to the concept of self-concept?
2. What is the process of self-evaluation, and why is it important to the concept of self-concept?
3. How is the aging process likely to affect your patients' self-concepts as they enter middle and late adulthood?
4. What impact is social media likely to have on your patients' self-concepts if they spend hours each week engaged on sites such as Facebook?

What Should the Nurse Do?

1. How should the nurse care for a teenage patient with a higher weight who is being teased at school for their weight?

2. Your patient is a mother of two children, who also works as the vice president at an investment firm. While in the hospital, your patient is cheerful and spent hours relaxing, reading books, and watching television. The patient commented that it was nice not to feel pressured to do things that they ought to be doing at home or work. When you inform the patient that they can go home, they become disheartened. What do you think is going on, and how will you address the patient's change in disposition?
3. How will you use information about developmental changes to help you understand how to care for a teenager who has a poor self-concept and has started smoking cigarettes?

Competency-Based Assessments

1. Name three of the tools for the measurement of self-concept, and briefly describe each tool. Draw a concept map that compares and contrasts the three tools.
2. List and briefly describe each of the stages of self-concept development.
3. List and explain at least three of the Big Five personality traits. For each trait, indicate how it influences self-concept.

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CHAPTER 33
Sexuality

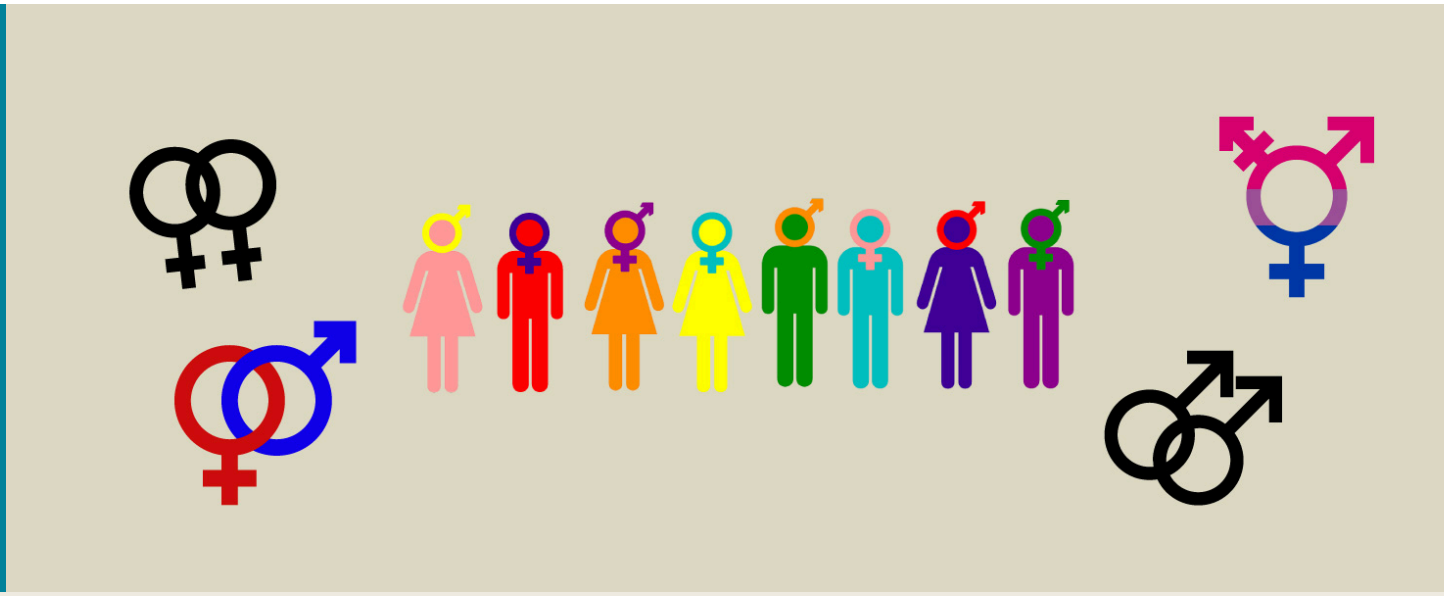

FIGURE 33.1 Providing patient-centered quality care requires the nurse to acknowledge that human sexuality has many variations. These symbols are all variations of symbols used by the LGBTQ+ community to demonstrate unity, pride, shared values, and allegiance to one another. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

CHAPTER OUTLINE

33.1 Sexual Identity
33.2 Sexual Fulfillment
33.3 Factors Affecting Sexuality
33.4 The Nurse's Role in Providing Care

INTRODUCTION What do sexuality and health care have to do with each other? Studies have shown that sexual minority groups (such as those who identify as gay, lesbian, or bisexual) have poorer health outcomes than heterosexual individuals (individuals who are sexually attracted to a person of a different gender or sex) (Tabaac et al., 2020). Unfortunately, there are a multitude of factors that contribute to less-than-optimal health outcomes in these underrepresented groups. A combination of factors including discrimination, lack of health insurance, limited healthcare access, and lower socioeconomic status affect these underrepresented groups in disproportionate ways (U.S. Department of Health and Human Services, n.d.), leading to poor health outcomes and health disparities. Nurses are in a unique and powerful position to directly impact the health outcomes of at-risk populations by remaining knowledgeable about sexuality and providing care that is inclusive and respectful of all individuals.

33.1 Sexual Identity

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define biological sex and what it encompasses
- Recognize how gender identity is applied to one's self-identity
- Identify various gender role expressions
- Explain various sexual orientations

The importance of nurses being knowledgeable about patient gender identity, gender role expression, and sexual orientation cannot be overstated. However, just being knowledgeable about the subject is not enough. Nurses must actively work to remain open-minded and nonjudgmental to provide quality care to all patients, regardless of gender

identity, gender role expression, or sexual orientation. Nearly a quarter of **LGBTQIA+** (lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual, and gender diverse) Americans report being blamed for their health problems by a healthcare provider, as compared to less than 10 percent of non-LGBTQIA+ individuals (Rummler & Mathani, 2022). Additionally, one in every six LGBTQIA+ individuals reports avoiding health care in anticipation of discrimination (Casey et al., 2019). When care is provided in a manner that is closed-minded and/or judgmental, it is discrimination, and it leads to poor health outcomes (Tabaac et al., 2020). These poor outcomes are seen in disproportionately higher numbers in the LGBTQIA+ population, resulting in health disparity, which are preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations (Centers for Disease Control and Prevention, 2023). The key word in that definition is "preventable," which is why there has been a significant focus in recent years on reducing risk factors in these populations to improve health outcomes (U.S. Department of Health and Human Services, n.d.).

This unit is designed to enrich your nursing understanding of biological sex, gender identity, gender expression, and sexual orientation. By deepening your knowledge in these areas, you will be better prepared to deliver holistic, patient-centered care (PCC) to individuals across the spectrum of sexuality. The goal is to empower you with the insights and sensitivity needed to address the unique needs and concerns of every patient, ensuring that quality care is provided to all. This section of the chapter is designed to enrich your nursing understanding of biological sex, gender identity, gender expression, and sexual orientation.

Biological Sex

The sex that is assigned to an individual at birth is referred to as one's **biological sex**. In some cases, you will have patients that prefer to refer to their biological sex as "assigned male at birth" or "assigned female at birth." This sex assignment is made based on biological factors including chromosomes and physical characteristics (e.g., genitals). At birth, if **ambiguous genitalia** are noted, meaning the genitalia don't look as expected for a male or female, the child may be classified as "Intersex." A broad classification term, **intersex** encompasses situations in which a person is born with chromosomes or reproductive or sexual anatomy that does not fully align with being male or female. Some intersex characteristics are recognizable at birth, while others do not present until later in life. The key takeaway about biological sex is to understand that the sex assigned to an individual at birth may not necessarily correspond to the gender they identify with or perceive themselves to be. It is important to be mindful of this when caring for patients and avoid assuming that a person is a certain gender solely based on their assigned biological sex at birth.

Chromosomal Sexual Development

Biological sex is determined by specific combinations of **chromosomes**, which are threadlike structures containing DNA located in the nucleus of cells. Chromosomes that determine the sex of the individual are referred to as **sex chromosomes** and are designated as X and Y chromosomes. Biological females have two X chromosomes (XX) and biological males have one of each (XY). The biological sex is determined during **fertilization** when a sperm cell fertilizes an egg cell. The egg cell always carries an X chromosome and the sperm carries either an X or a Y, so the biological sex is dependent on which type of chromosome is carried by the sperm. If the sperm carries an X chromosome, the result will be a biological female, and if the sperm carries a Y chromosome, it will be a biological male. It is important to note that although XX and XY are the most common chromosomal configurations for sex, there are some instances where variations may occur. For example, males with XXY sex chromosomes are diagnosed with Klinefelter syndrome (Figure 33.2). This condition can result in symptoms such as abnormal growth patterns, reduced facial hair growth, enlarged breasts, low sex drive, and infertility. Another example is females with three X chromosomes (XXX), which causes Triple X syndrome. This condition may cause symptoms including infertility, abnormal growth patterns, or early menopause.

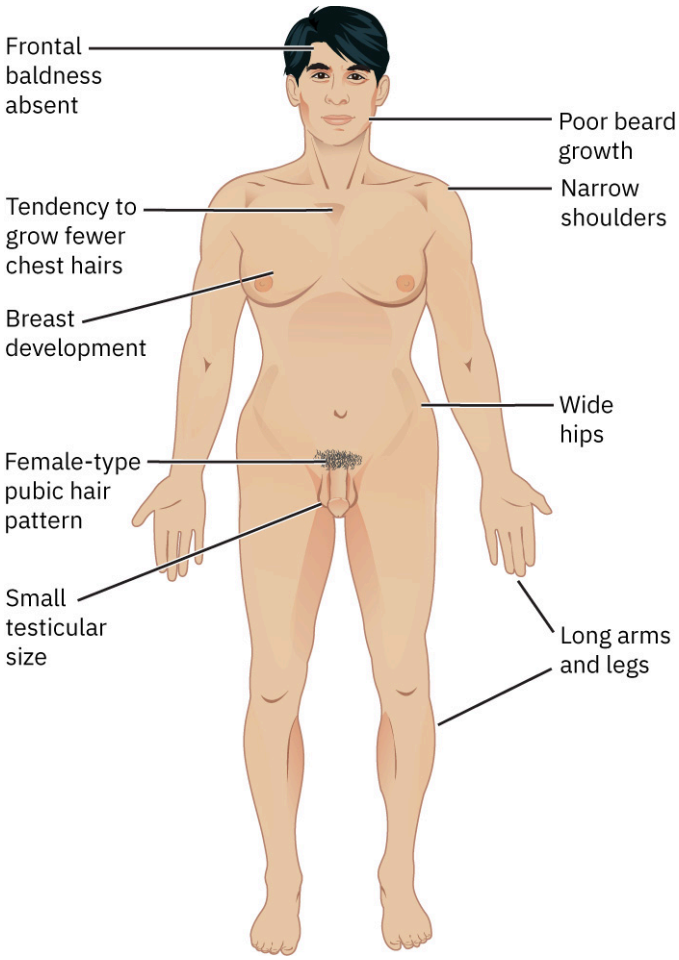

FIGURE 33.2 Klinefelter syndrome occurs when a male is born with XXY sex chromosomes, and manifestations include wider-than-normal hips and enlarged breast tissue. (credit: modification of "Klinefelter's syndrome" by Unknown author/Wikimedia Commons, CC BY 3.0)

Congenital Adrenal Hyperplasia (CAH)

A genetic disorder, **congenital adrenal hyperplasia (CAH)** affects the adrenal glands, which sit on top of the kidneys. The adrenal glands are responsible for producing several different hormones, including cortisol, aldosterone, and sex hormones (testosterone and androgens). Genetic mutations in CAH result in a lack of certain enzymes needed by the adrenal glands to make hormones. When the body produces less cortisol and/or aldosterone, the body tries to compensate by stimulating the adrenal glands to make more. This stimulation results in an overproduction of sex hormones, which manifests as enlarged external female genitalia in infants and early appearances of pubic hair and acne and rapid growth patterns during adolescence. It is typically treated with hormone replacement therapy to treat the deficient levels of cortisol and aldosterone and antiandrogen medications such as spironolactone to decrease the amount of sex hormones in the body. In severe cases, females may opt to surgically alter the appearance of the enlarged external genitalia for cosmetic or functional reasons.

Gender Identity

Gender is often used interchangeably with biological sex; however, they are two completely different concepts. Sex refers to the biological and physiological characteristics of a male or female such as reproductive organs, hormones, and chromosomes. On the other hand, **gender** is a social construct that includes norms and behaviors associated with being a man or a woman. One's **gender identity** is defined as "a person's deeply felt, internal and individual experience of gender, which may or may not correspond to the person's physiology of designated sex at birth" (World Health Organization, n.d.). In other words, gender identity is the gender that an individual perceives themselves to be, regardless of their biological sex. Gender identity is just as important, if not more so, than biological sex because it encompasses an individual's internal sense of self, which can directly impact both mental and physical health. It is vital that nurses recognize and understand that a patient's gender identity may not align with their physical characteristics; however, the patient should be recognized as the gender with which they identify.

For example, if a biological male who identifies as female prefers “she/her/hers” as their pronouns, the nurse should consistently use them in conversation, even if the patient has external physical characteristics that are male. Gender identity is a highly personal and sensitive part of an individual’s life and should be treated with open-mindedness and respect, especially within the healthcare setting.

LINK TO LEARNING

Learn more about health considerations specific to LBGTQ+ youth (https://openstax.org/r/77LBGTQhealth) in this publication by the Centers for Disease Control and Prevention (CDC).

Cisgender

Individuals whose gender identity aligns with the biological sex they were assigned at birth as referred to as **cisgender**. For example, an individual who was assigned male at birth and who identifies as a male is cisgender. Historically, cisgender individuals were called “normal,” however, this would indicate that other variations of gender identity are “abnormal,” which is not accurate. There are many variations of gender identity, all of which are normal, so this term has been adopted to help change the societal narrative about there being only one “normal” type. Using this term is a way to demonstrate the use of inclusive language and foster understanding and respect for all individuals.

Gender Nonconforming

The term **gender nonconforming** is used to describe individuals who display behaviors or appearances that do not align with societal expectations of their sex assigned at birth. An example would be an individual assigned male at birth who enjoys wearing female clothing and makeup. Another example could be an individual assigned female at birth who prefers to keep their hair short and wears masculine clothing. It is important to remember that being gender nonconforming does not necessarily indicate the person’s gender identity. In many cases, the individual may be cisgender but just enjoy expressing themselves in ways that do not align with societal expectations of their sex assigned at birth. This again highlights the need for nurses and other healthcare professionals to maintain an open mind that is free from judgment and allow patients to express themselves authentically, regardless of societal norms.

LIFE-STAGE CONTEXT

Navigating Puberty and Gender Identity

As teenagers enter puberty, they embark on a journey of self-discovery that includes exploring their identity, sexuality, and gender expression. For some teens, this period may involve questioning traditional gender norms and embracing a gender identity that differs from societal expectations. The following are some key considerations for teens experiencing gender nonconformity during puberty:

- Physical changes: Puberty brings about significant physical changes, such as the development of secondary sexual characteristics such as breast growth, voice deepening, and facial hair. For nonconforming teens, these changes may not align with their gender identity, leading to feelings of discomfort or dysphoria.
- Emotional challenges: Adolescence is a time of heightened emotional sensitivity, and navigating gender identity can add an extra layer of complexity. Teens may experience confusion, anxiety, or depression as they grapple with societal pressures and expectations regarding gender roles and expression.
- Supportive environments: Creating a supportive and inclusive environment is crucial for teens exploring their gender identity. Schools, healthcare providers, and families can play a pivotal role in offering acceptance, understanding, and resources to help teens navigate this journey with confidence and resilience.
- Access to resources: Access to resources such as gender-affirming therapy, support groups, and LGBTQIA+ organizations can provide valuable support and guidance for teens experiencing gender nonconformity. These resources offer a safe space for teens to connect with others who share similar experiences and access affirming care.
- Respect and affirmation: Respecting a teen's self-identified gender and using their chosen name and

pronouns are essential for affirming their identity and fostering a sense of validation and acceptance. Providing opportunities for open communication and validation of their feelings can help teens feel understood and supported during this critical time.
- Legal protections: Understanding the legal protections and rights afforded to gender nonconforming individuals is vital for ensuring their safety and well-being. Educating teens and their families about their rights in areas such as health care, education, and employment can empower them to advocate for themselves and navigate any challenges they may encounter.

Navigating puberty and exploring gender identity can be a complex and deeply personal journey for teens. By fostering a supportive and affirming environment and providing access to resources and information, we can empower teens to embrace their identity with confidence and live authentically.

Transgender

Individuals whose gender identity does not align with the sex assigned to them at birth as known as **transgender**. For example, an individual who was assigned female at birth but identifies as a man is a Transgender man, whereas an individual who was assigned male at birth but identifies as a female is a Transgender woman. It is important to note that Transgender is a broad term that encompasses many different situations, not just the ones described here. Some other categories of Transgender individuals include those who are gender nonbinary and gender fluid, both of which are discussed in more detail in the following sections. Another term that is sometimes mistakenly used in place of Transgender is transsexual. While many people refer to themselves using this term, it is important to note this term is usually considered outdated and could be offensive to some people because not all transsexual individuals identify as Transgender and vice versa. Use this term only when the individual has used it to identify themselves first.

Transgender people may undertake several processes to express their gender identity or to live in congruence with their gender. These steps or changes are often referred to as "transitioning," but they vary greatly among individuals, and may occur over a relatively long period of time and in no set order. Internal transitioning can be described both as changing the way one thinks about themselves and about how they act when alone. Some transgender people undertake a social transition, in which they may express their identity through choosing a new name and pronouns, changing their style of dress, hair, and other expressions. Legal transitioning may include a legal name change, as well as updating or replacing one's driver's license, passports, and other documents. Some, but not all, transgender people seek and undertake gender-affirming medical care, such as using prescribed hormones, puberty-blockers, voice changes (either through training or surgery), changes to the chest/breast area, changes to genitalia, and other procedures or treatments. Nurses are very likely to care for patients who are considering or undergoing one or more of these transitions, or who have already done so.

LINK TO LEARNING

Some Transgender individuals may choose to undergo gender affirmation surgery. This procedure involves surgical interventions to alter portions of the body to better align with the individual's gender identity. Learn more about gender affirmation surgery (https://openstax.org/r/77genderaffsurg) including procedure details, risks, benefits, recovery, and outlook.

Gender Dysphoria

The term **gender dysphoria** is used to describe the distress experienced by some -- but not all -- individuals when their sex assigned at birth and assumed gender is not the one with which they identify. This is a real health condition that is recognized and defined by the *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM 5-TR*), which is used to assist with diagnosis of mental health disorders by psychologists and psychiatrists (American Psychiatric Association, 2022). Though many transgender, gender noncomforming or questioning people experience challenges and concern about their gender identity, not all experience the distress associated with gender dysphoria. To be classified as dysphoria, significant distress must last for six months, usually with associated impairment in social or other areas of functioning or relationships. Some of the findings in pediatric patients with gender dysphoria per the DSM-5-TR definition include the following:

- a strong desire to be of the other gender or insistence they are the other gender
- a strong preference for playmates of the opposite gender
- a strong dislike of one's sexual anatomy
- people assigned male at birth, a strong rejection of typically masculine toys (e.g., guns, dinosaurs, action figures), games, and activities and avoiding rough play; people assigned female at birth, rejecting typically feminine toys (e.g., dolls), games, and activities

In adolescents and adults, some of the expected findings of gender dysphoria include the following:

- A mismatch between one's expressed gender and primary and/or secondary sex characteristics (or, in young adolescents, the anticipated secondary sex characteristics). For example, an individual assigned female at birth expresses themselves as a male and does not feel that the development of female breast tissue aligns with their gender identity.
- Wishing to be treated as the other gender (or a gender that is different from one's assigned sex)
- Wanting to get rid of one's primary and/or secondary sex characteristics because of a mismatch between one's expressed gender and sex characteristics

Treatment for children with gender dysphoria typically begins with counseling and family therapy to explore the child's feelings about their gender. In adolescents and adults, treatment with hormones may be considered in addition to counseling and therapy.

Gender Role Expression

Strict societal beliefs that define "acceptable" behaviors for each gender are known as **gender roles**. In most cases, these roles are binary, meaning that they only encompass acceptable behaviors for male and female. An example of a common gender role is that boys should only play with trucks and dinosaurs while girls should play with dolls and have tea parties. Another example would be the traditional beliefs regarding the division of household labor. Traditionally, the female would stay home with the children and handle the cleaning and cooking while males would go to work. In recent years there has been a shift away from these roles for many reasons including nontraditional family dynamics and more women entering the workforce for personal or financial reasons (U.S. Bureau of Labor Statistics, 2023). Despite these shifts, there are still many people who strongly believe in these traditional gender roles, which can make it difficult to change the way society views gender.

The way a person communicates their gender to others is called **gender role expression**. This expression is external, such as by clothing, appearance, and mannerisms. It is important to note that gender role expression may or may not reflect an individual's gender identity. For example, a Transgender female may continue to wear male clothing to work due to fear they will be judged in the workplace if they dressed like a female. When people think about gender expression, they are again usually thinking in binary terms, which in this case would be masculine and feminine. However, there are many other combinations in which a person might express themselves as both genders simultaneously or as different genders at different times, which is described as **gender fluid**. Another example outside of strict masculinity and femininity is called androgynous expression. Individuals who are **androgynous** express themselves in a manner that does not conform to societal expectations of how males or females should look and/or act (Figure 33.3). They may embrace looks or clothing from both genders, making it difficult to determine whether they identify as male or female. The main takeaway is that all individuals possess their own unique form of gender expression, and it does not automatically determine their gender identity, nor should you just assume their identity based on a simple visual examination.

FIGURE 33.3 An androgynous individual embraces looks or clothing from both genders, making it difficult to determine whether they identify as male or female. (credit: "Genderqueer person" by Franziska Neumeister/Wikimedia Commons, CC BY 2.0)

Gender Binary

The term **gender binary** refers to the classification of gender into two distinct categories: male and female. Although considered outdated, a number of individuals still believe in this concept. This view about gender asserts that people can only be male or female and that they should conform to societal expectations (gender roles) that are appropriate for their assigned biological sex. This view fails to account for the diversity and complexity associated with gender identity, thus fostering a closed-minded approach to understanding the unique experiences of individuals with "nontraditional" gender identities. This view is inappropriate, but even more so in healthcare settings, as these beliefs can contribute to subconscious biases and subsequently poor health outcomes.

Although some healthcare professionals continue to hold onto this belief and treat patients only according to their sex assigned at birth, others are expanding their knowledge regarding gender care and advocating for better health care for these individuals. A new healthcare-delivery model called **gender expansive health care** is inclusive and affirms gender identity. Many healthcare institutions are beginning to adopt this model by providing continuing education to healthcare professionals about gender care, implementing gender neutral facilities and signage, and using appropriate pronouns and wording when caring for patients (Center for Transgender and Gender Expansive Health, 2023).

Gender Nonbinary

The term **gender nonbinary** refers to individuals who have a gender identity that does not fit within the traditional binary framework of male or female. People who are nonbinary may identify with a gender that is somewhere along the spectrum between male and female or separate from these categories. Individuals who are nonbinary may express their gender in various ways, which might include a combination of traditionally masculine and feminine traits, or they might present in a way that does not conform to conventional gender norms. Some nonbinary people use specific terms to describe their gender identity, such as genderqueer, genderfluid, agender, bigender, or other terms that best fit their personal experience. Each term may have distinct meanings or nuances that are significant to the individual using them, so it is important for nurses and other healthcare providers to ask patients which terms they prefer and use them appropriately per the patient's preferences. Nonbinary individuals may use different pronouns that reflect their gender identity, such as they/them, ze/zir, or others. It is important to respect and use the pronouns with which an individual identifies (North Dakota Health and Human Services, n.d.).

LINK TO LEARNING

Watch this video to gain a firsthand account of the perspective of five different nonbinary individuals (https://openstax.org/r/77nonbinaryindv) and what being nonbinary means to them.

REAL RN STORIES

Gender Identity Discrimination

Nurse: Leslie, BSN
Clinical setting: Emergency department
Years in practice: 3
Facility location: Rural community hospital in Kansas

I had just taken a health history on a patient who was being seen for a respiratory illness. During the assessment, I found out the patient was a Transgender male. As I walked through the hall, I ran into the treating provider and pulled him aside to let him know about the patient's preferred pronouns. The provider stated, "So, is she a male or a female? I don't get it. I can't keep up with all these changes. Back in my day, there were only two genders." I responded, "He was assigned female sex at birth, but identifies as a male. So, he is a male."

For hours, I kept replaying that interaction in my head. I found myself regretting not advocating for the patient better. I was proud that I had at least relayed the necessary information for the provider to treat the patient according to his gender identity; however, I knew I could have handled it better. I was so distraught about the situation that I went to talk to my charge nurse about it. She was understanding and recognized that it's difficult to advocate for patients sometimes, especially in situations where it feels like we are correcting providers.

A few hours later, I ran into the provider again. I asked him how his interaction with the patient went, and he said, "It went really well. Thank you for letting me know about his preferred gender identity because I would have had no idea otherwise." I took this opportunity to say, "I appreciate you listening and using his preferred pronouns. I think sometimes it's hard for us to understand others' experiences when we don't necessarily have the same belief system about gender identity, but it's important for us to treat patients according to their preferences. It shows respect and understanding, which is so important in health care."

A few weeks later, I decided to start a hospital-wide committee to increase awareness and education about patient gender identity. And guess who came to the first meeting? The provider. To this day, I have no idea if my words were what moved this provider to join the committee, but I do think it played a small part. And I'm happy to report that he is an active committee member and has since helped teach other providers how to treat patients according to their gender identity without judgment.

Sexual Orientation

The term **sexual orientation** describes who an individual is attracted to sexually, emotionally, and/or romantically. It is important to remember that this term is completely different from gender identity. Gender identity describes who an individual is, whereas sexual orientation describes who that individual is attracted to. There are many variations of sexual orientation, including heterosexual, lesbian, gay, bisexual, asexual, and questioning, among others. These types are discussed in more detail in the following sections.

Heterosexual

Individuals who are **heterosexual**, also called "straight," are sexually attracted to a person of a different gender or sex. There are several common misconceptions about heterosexuality. First, many people think Transgender individuals cannot be heterosexual. This is not true, because a person's gender identity and sexual orientation are two separate things. If a Transgender man is attracted to women, he is heterosexual, even though his sex assigned at birth was female. Another misconception is that being heterosexual is the only "normal" orientation. Although heterosexuality is the most common sexual orientation, it does not make it any more "normal" than other sexual

orientations. Some people have religious or personal beliefs that do not accept other sexual orientations; however, that does not change the fact they exist and are just as "normal" as being heterosexual.

Gay and Lesbian

Historically, individuals who identified as gay or lesbian were often labeled as "homosexual." However, this term is considered outdated and potentially offensive. It should only be used if the individual chooses to describe themselves in this way. The term **gay** is used to describe men who are romantically or sexually attracted to other men. This term is also used more broadly to describe individuals of any gender that are attracted to individuals of the same gender. Women who are romantically or sexually attracted to other women are referred to as **lesbian**.

Bisexual

Also commonly referred to as "bi" or "bi+," **bisexual** describes individuals who acknowledge they have the potential to be attracted (romantically, emotionally and/or sexually) to people of more than one gender. It is important to note that the person's attraction to each gender may not occur at the same time or in the same way and that these levels of attraction can vary significantly depending on the individual. Another important reminder is that individuals who refer to themselves as bisexual do not need to have had sexual and/or romantic experiences with more than one gender, or have had any experiences at all. If an individual identifies as being bisexual, they are.

Asexual

Sometimes referred to as "ace," **asexual** describes individuals who do not experience sexual attraction or have a lack of interest in sexual activity. Some asexual individuals still experience romantic attraction and form romantic relationships, whereas others do not. Those who do not experience romantic attraction identify as **aromantic**. Being asexual is different from choosing to abstain from sexual activity for personal or religious reasons; asexual individuals do not have the inner desire to participate.

Questioning

The term **questioning** refers to a time of exploration and self-discovery about one's sexual orientation, gender identity, and/or gender expression. Those who are questioning may be unsure about their attraction to others or how they fit within societal expectations of gender roles and identities. Questioning individuals can be of any age and in many cases, this may occur later in life. This is an extremely important process and one that should not be taken lightly. A common misconception about questioning individuals is that they are choosing to be lesbian, gay, or bisexual, which is not true. They are taking the time to explore their internal feelings and attraction to others so that they can become confident in their identity.

PATIENT CONVERSATIONS

Patient Questioning Gender Identity

Scenario: The patient is a 23-year-old biological male being seen in the community clinic for a wellness exam. The nurse walks into the patient's room to obtain a health history.

Nurse: Hi, my name is Marie and I'll be your nurse today. Please confirm your name and date of birth.

Patient: Sure. It's James Dobbard and my birthday is 3/29/2001.

Nurse. Great, thank you. Before we get started, I want to gather some demographic information. Do you identify as male or female?

Patient: Well, that's kind of hard to explain actually. I've been confused about that lately.

Nurse: It's okay to be confused. Do you mind explaining more about your confusion?

Patient: I don't know . . . I guess I've never felt completely comfortable being a man. When I was younger, I always liked "girl" toys and enjoyed things such as painting my nails, but my parents forbid me from doing them.

Nurse: I'm sorry to hear about that—that must have been difficult.

Patient: It was. I tried to just get over it, but as I got older, I still found myself gravitating toward more feminine activities. I enjoy dressing up and putting on makeup. I know that probably sounds weird to you.

Nurse: Not at all. It's brave of you to tell me how you're feeling. Do you feel as though you might identify more with being a female?

Patient: Yes, I really do, but I'm too scared to say that out loud to anyone in my life because I know I will be judged.

Nurse: I'd love to connect you to some local resources and support groups for other individuals who are questioning their gender identity. They may have more insight about your feelings and how to approach the subject with your family and friends. Would you be open to that?

Patient: Yeah, that actually sounds great. I would really appreciate it. Thank you, and thank you for not judging me. I can't tell you how relieved I feel now.

33.2 Sexual Fulfillment

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the different forms of stimulation used in sexual fulfillment
- Explain sexual behaviors and their assigned categories
- Describe the types of expression used for sexual fulfillment

The state of experiencing satisfaction, pleasure, and contentment in one's sexual relationships, is known as **sexual fulfillment** and is a crucial aspect of overall health and well-being. Though discussing sexual health and habits can be uncomfortable at first, it is important for nurses to gain the experience and knowledge to be able to understand and address patient sexual concerns. By remaining open-minded and nonjudgmental regarding others' sexual preferences, nurses can provide care that is more holistic and promotes optimal patient wellness and outcomes.

Forms of Sexual Stimulation

Every individual has unique sexual preferences. Thus, achieving sexual fulfillment may vary from person to person. There are several different forms of sexual stimulation that an individual may prefer (or require) to become sexually fulfilled. These forms of sexual stimulation can be classified as either physical or psychological and are discussed in more detail in the following sections.

Physical

Physical sexual stimulation involves physical contact, or the touching of parts of the human body (Table 33.1). Specifically, this involves touching the various **erogenous zones**, which are parts of the body that trigger **sexual arousal** (state of being physically and mentally excited by sexual stimuli, and involves physiological responses such as increased heart rate, blood flow to the genital areas, lubrication in women, and erections in men) when stimulated. These areas include the mouth/lips, ears, neck, breasts/nipples, back, genitals, and the inner thighs (Figure 33.4).

Type of Stimulation	Description
Kissing	Kissing is direct mouth-to-mouth contact that involves pressing one's lips against another person's lips.
Breast stimulation	Other terms include "nipple stimulation," or "nipple play." Involves biting, sucking, touching, and/or rubbing the nipples and surrounding breast tissue. It is important to note that the amount of breast stimulation that is comfortable varies widely from person to person.

TABLE 33.1 **Different Forms of Physical Sexual Stimulation**

Type of Stimulation	Description
Manual stimulation	Manual stimulation involves the use of hands, fingers, or other parts of the body to stimulate the genitals or other erogenous zones. Examples include "fingering," or placing one's fingers inside a vagina, using fingers to squeeze nipples, or using hands to stroke a penis.
Oral stimulation	Oral stimulation, also called "oral sex," involves using the mouth (e.g., mouth, lips, tongue) to stimulate another person's genitals or anus.

TABLE 33.1 Different Forms of Physical Sexual Stimulation

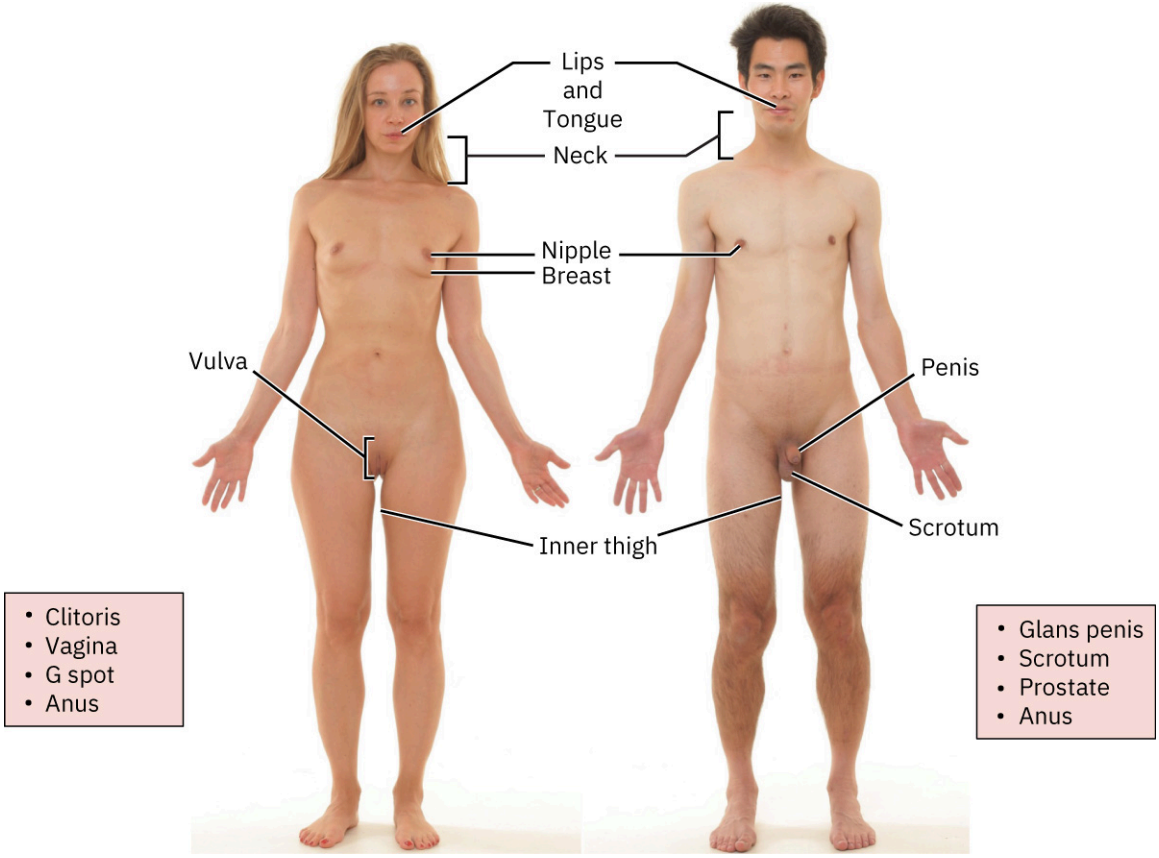

FIGURE 33.4 Both males and females have similar erogenous zones, which are areas that result in sexual arousal when touched or stimulated. (credit: modification of "Erogene Zonen des Menschen 1" by Mikael Häggström/Wikimedia Commons, CC0 1.0)

Psychological

In addition to physical touch, some individuals can also be sexually stimulated by other means that can be classified as psychological stimulation. This includes the use of adult movies, magazines, photographs, and certain sounds, such as moaning or sucking noises. With this kind of stimulation, there does not need to be physical contact with another individual to elicit sexual arousal. For many individuals, both physical and psychological stimulation can result in sexual arousal; however, the degree of arousal may vary depending on their specific preferences. It is important to remember that sexual stimulation preferences are specific to each individual and should be approached with an open mind by the nurse and other health professionals.

Sexual Behaviors

One's **sexual behavior** refers to acts that an individual engages in to experience sexual arousal, **sexual pleasure** (enjoyable and satisfying physical and emotional sensations experienced during sexual activity), **orgasm** (peak of sexual excitement, characterized by intense physical pleasure and a series of involuntary muscle contractions in the genital area), and/or reproduction of offspring. It encompasses a wide variety of activities and interactions, both

physical and psychological. Sexual behaviors can be classified as either adaptive or maladaptive, each of which is discussed in more detail in the following sections.

Adaptive

Adaptive sexual behaviors are commonly referred to as healthy sexual behaviors. This involves an individual being able to express their sexuality in ways that enrich their life and do not pose threats to their health. Some examples of adaptive sexual behaviors include the following:

- always giving and obtaining consent before participating in sexual activities
- communicating sexual needs and desires with partner
- listening to and respecting sexual boundaries of self and others
- protecting self and others from sexually transmitted infections (STIs)
- using contraceptives appropriately, if indicated
- being comfortable with sexual identity and orientation

LIFE-STAGE CONTEXT

Sexual Behaviors in Older Adults

There is a common misconception that older adults are no longer interested in sex. However, studies have shown that older adults who engage in sexual activity have a greater quality of life (Steckenrider, 2023). With the increasing older adult population in combination with increased access to medications and devices to assist with sexual function (e.g., penis pumps, penile implants), it is important for nurses and other health professionals to understand that discussions about sex with the older adult population are warranted and necessary. It is also important to note that older adults engaging in sexual behaviors are still at risk for STIs. For this reason, it is imperative that the care of older adults involve education and discussion about safe sexual practices.

Maladaptive

Maladaptive behaviors occur when an individual does not know how to handle challenges or new situations and acts in problematic ways (Marston, 2022). In some cases, these behaviors can be sexual in nature. Examples of maladaptive sexual behaviors include the following:

- excessive or inappropriate use of **pornography** (materials, such as books, magazines, videos, and websites, that depict explicit sexual content primarily intended to stimulate sexual arousal)
- infidelity (cheating or being unfaithful to a committed partner)
- developmentally inappropriate sexual behavior exhibited by children, particularly under the age of 12
- touching others in inappropriate or unwanted ways

Common Types of Sexual Expression

Sexual expression refers to both the sexual activities in which individuals engage as well as how they communicate and present their sexuality. This section will discuss masturbation, sexual intercourse, oral-genital stimulation, and a few other less common types of sexual expression.

Masturbation

Self-stimulation of the genitals or other areas of the body for sexual arousal or pleasure is called **masturbation**. It can involve the use of hands/fingers, sex toys, or other objects and is a normal part of healthy sexual development. Masturbation can be practiced individually or with a partner, who may or may not choose to participate in the activity. Historically, there have been myths and misconceptions surrounding masturbation, with some people believing that it could lead to various side effects such as blindness, hairy palms, or infertility. In reality, masturbation is a normal and healthy sexual activity that does not cause harm to the body (Ajmera, 2022). Misinformation about masturbation has contributed to stigma and shame surrounding this natural behavior, but education and accurate information can help dispel these myths and promote a more positive understanding of masturbation and sexual health. Masturbation offers many benefits, including

- reduced stress and anxiety,
- increased focus,

- improved mood,
- better sleep, and
- enhanced sex life.

Sexual Intercourse

In traditional definitions, **sexual intercourse** refers to penetration of the female's vagina by the male's penis. This definition, however, does not account for variations in sexual orientation, so it is often expanded to also include penetration of the anus (of a male or female) by the penis. Some definitions also include penetration of the vagina or anus by a finger, tongue, or inanimate object. Although the definition of what constitutes sexual intercourse may vary, it always involves penetration of the vagina or anus.

Oral-Genital Stimulation

Also called "oral sex," **oral-genital stimulation**, involves stimulation of an individual's genitals by another individual's mouth, lips, or tongue. The three types of oral sex are

- **fellatio** (oral sex involving the penis),
- **cunnilingus** (oral sex involving the vagina, vulva, or clitoris), and
- **anilingus** (oral sex involving the anus).

Oral sex often may occur before sexual intercourse in what is known as **foreplay**; however, it can also be performed after sexual intercourse or on its own without any intercourse at all. This kind of sexual expression can be pleasurable but is not without risk. Both giving and receiving oral sex increases the risk of obtaining STIs, as they can be spread from mouth-genital contact and vice versa.

Other Forms of Sexual Expression

There are several other, less common forms of sexual expression (Table 33.2).

Type of Expression	Description
Voyeurism	• Becoming sexually aroused by watching another person (or people) in a state of nakedness or engaged in sexual activity • Traditional definition has a negative connotation because it was used to describe an individual viewing an unknowing/unwilling victim and did not allow for individual to form sexual relationships outside of this preference • More modern definition includes consensual sexual voyeurism that exists within relationships or still allows an individual to form relationships
Sadism	• Sexual arousal from inflicting pain, suffering, or humiliation on others
Masochism	• Sexual arousal from one's own pain or humiliation
Sadomasochism	• Combination of sadism and masochism

TABLE 33.2 Other Forms of Sexual Expression

33.3 Factors Affecting Sexuality

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe physiological factors affecting sexuality
- Recognize psychological factors affecting sexuality
- Identify psychosocial factors affecting sexuality

Sexuality is a vital component of health and one that should never be overlooked or dismissed as unimportant.

Though discussing sexual health with patients can be uncomfortable at times, it is a key component of providing holistic, patient-centered care (PCC). It is important that nurses and other healthcare providers gain experience and increased comfort with providing guidance and care in accordance with patient sexuality, including their sexual preferences and any concerns regarding sexuality they may have. It is also important to recognize there are many factors, including physiological, psychological, and psychosocial, that may affect an individual's sexuality.

Physiological Factors Affecting Sexuality

Physiological factors are biological characteristics that can have a significant influence on an individual's sexuality and sexual health. Some of the most common physiological factors that can impact sexuality include developmental changes and certain diseases and medications. Each of these factors is discussed in more detail in the following sections.

Developmental Considerations

Though sexuality is most often associated with adolescence and adulthood, sexual development begins in early childhood and extends throughout the life span (Table 33.3).

Life Stage	Considerations
Infancy (birth–1 year)	• Physical exploration of genitals after developing sufficient motor skills
Childhood (1–11 years)	• Developing curiosity about own body and others' bodies • Begin to ask questions about own genitals and begin differentiating between male and female anatomy • Begin to develop own gender identity
Adolescence (12–18 years)	• The process of physical changes that results in development of secondary sexual characteristics such as breast enlargement and menstruation in females and facial hair growth in males begins, known as **puberty** • Hormonal changes contribute to development of sexual desire, attraction, and onset of sexual experimentation • Period of exploration of sexual identity, preferences, and values, which is often influenced by peers, social media, and cultural norms
Young adulthood (18–40 years)	• Exploration of intimate relationships and sexual experiences • Sexual identity usually becomes established in this period • Period of peak fertility that often involves family planning and new parenthood
Middle adulthood (40–65 years)	• Often involves shifts in priorities (e.g., focus on emotional intimacy versus physical attraction) • Menopause may impact sexual function
Later adulthood (65+ years)	• Sexual development continues; however, function may be impacted by health-related factors such as chronic conditions, medications, and/or physical limitations • Intimacy and emotional connection still remain important to most individuals

TABLE 33.3 **Sexual Development Considerations across the Life Span** (Source: Cacciatore et al., 2019.)

Diseases and Conditions

There is an array of sexual dysfunction disorders that directly impact aspects of sexual functioning, both in males and females. Some of these conditions are discussed in more detail in the following sections. In addition to these specific sexual dysfunction disorders, many other chronic medical conditions may also impact an individual's sexual health. Some of these conditions include diabetes mellitus, cardiovascular disease, and chronic pain, as well as conditions that impact mobility.

Sexual Dysfunction Disorders

Difficulty experienced by an individual or a couple during any stage of a normal sexual activity that inhibits one or both partners from achieving sexual satisfaction is known as **sexual dysfunction** (Table 33.4) (Mandal, 2019; Cleveland Clinic, 2020). Sexual dysfunction disorders can have a profound impact on an individual's quality of life.

Disorder	Description
low libido	Lack of or significant reduction in sexual interest and arousal. Common causes include certain medications, mental health disorders, and stress.
erectile dysfunction (ED)	Recurrent inability to achieve or maintain an adequate erection during partnered sexual activities. Common causes include hardening of arteries (e.g., atherosclerosis), neurological disorders, stress, penile trauma, and depression.
female orgasmic disorder	A significant change in female orgasm such as delay, reduction of intensity, or cessation.
delayed ejaculation (DE)	Taking a very long time to ejaculate following penetration.
premature (early) ejaculation	Persistent or recurrent pattern of ejaculation occurring either before or during partnered sexual activity within about one minute following vaginal penetration and before the individual wishes it.
substance/medication-induced sexual dysfunction	A condition in which patients have difficulties with sexual desire, arousal, and/or orgasm due to a side effect of certain medications and/or substances (legal or illicit).
vaginismus	Involuntary vaginal muscle wall spasm during intercourse, resulting in pain. The cause is unknown but previous trauma and/or sexual assault has been suggested as a potential trigger.
priapism	Painful erection that may persist for hours, even with a lack of sexual stimulation. It results when there is blood trapped in the penis that fails to drain adequately.

TABLE 33.4 **Descriptions of Common Sexual Dysfunction Disorders**

Disorder	Description
dyspareunia	Persistent or recurrent pain that occurs during sexual intercourse. This pain may occur at the vaginal opening or deep within the pelvis. It can be caused by various factors, including physical conditions such as infections, vaginal dryness, endometriosis, or pelvic floor disorders, as well as psychological factors such as anxiety or past trauma.
vaginal dryness	A condition where the vagina lacks sufficient natural lubrication, resulting in discomfort or pain during sexual intercourse. Vaginal dryness can occur due to various reasons, including hormonal changes (such as during menopause), certain medications, breastfeeding, stress, and certain medical conditions.

TABLE 33.4 **Descriptions of Common Sexual Dysfunction Disorders**

Diabetes Mellites

It may appear that diabetes mellitus would not impact sexual function; however, it can and often does in several ways. First, men with diabetes are three times more likely to experience erectile dysfunction (ED) than men without diabetes (Seid et al., 2017). Because of the chronic inflammation and subsequent damage to blood vessels and nerves seen with diabetes, it is often difficult to accomplish and/or maintain an erection. Additionally, men with diabetes may deal with a lack of sensation in the penis, even with an erection, due to peripheral neuropathy associated with the condition. The same can be said for women with diabetes—because of decreased blood flow and damaged nerves, they often experience less sensation around the vagina during sex, which can make it less enjoyable.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Addressing Diabetes and Sexual Health

John, a 55-year-old male with type 2 diabetes, presents with concerns about ED, which has been affecting his relationship with his partner. The nurse begins by gathering a comprehensive history of John's diabetes, including details about his management regimen, recent changes in medication, and lifestyle factors. A physical examination is conducted to assess for signs of diabetic complications such as peripheral neuropathy or vascular disease, which may contribute to his ED symptoms. Analyzing these cues, the nurse considers the impact of John's diabetes management on his sexual health and orders diagnostic tests to assess diabetes control, cardiovascular risk, and hormonal status. Based on the identified cues and analysis, the nurse forms hypotheses regarding potential diabetes-related causes of ED, such as neuropathy or vascular insufficiency, as well as psychological factors such as depression or anxiety. A collaborative care plan is developed, which includes addressing John's diabetes management goals while providing interventions for ED, such as medication, lifestyle modifications, or referral to a sexual health specialist. By applying a clinical judgment model to John's case, the nurse can systematically address his concerns, optimize his diabetes management, and improve his overall quality of life.

Cardiovascular Disease

Cardiovascular disease is another physiological condition that can negatively impact sexual function. One of the main reasons is related to the fatigue that often accompanies heart disease. Because diseased cardiac muscle must work harder than healthy muscle, it is prone to early fatigue. This translates to a potential decreased ability to fully participate in sexual activities. Patients with cardiovascular disease may tire early, which doesn't allow them to reach orgasm or achieve sexual satisfaction, or they may lose interest in sexual activity altogether because it seems like it will take too much effort and energy. Additionally, treatment for cardiac disease usually involves medications that reduce the workload of the heart, thus reducing the amount of blood being supplied by the heart to distant areas of the body, such as the genitals. With a diminished blood supply, males may experience erectile dysfunction,

whereas women may have difficulty achieving and/or maintaining sexual arousal.

Joint or Mobility Conditions

Any medical condition that causes impaired mobility has the potential to impact sexual function. Most sexual activities involve movement and require some mobility, so these kinds of conditions hinder the ability to fully participate. Some examples of conditions affecting mobility that may impact sexual function include

- rheumatoid arthritis,
- spinal cord injury,
- amyotrophic lateral sclerosis (ALS),
- multiple sclerosis (MS),
- stroke, and
- muscular dystrophy.

REAL RN STORIES

Spinal Cord Injury

Nurse: Frankie, BSN
Clinical setting: Intensive care unit (ICU)
Years in practice: 5
Facility location: Inner city of a large metropolitan area in California

For weeks, I had been caring for a 17-year-old patient who experienced a cervical spinal cord injury after diving into shallow water. Originally, it was believed that he would require a permanent ventilator, but he has since been weaned from it and is doing surprisingly well for the type of injury he sustained. He has regained some movement in his arms and fingers but has lost all sensation and function below his navel. He is still having trouble forming verbal words, but he has been using an iPad to communicate.

When I went in to check on him at the beginning of my shift, he asked me if I would have some time to come chat with him about a few things later in my day. I said, "of course," and was able to make it back a few hours later after getting my other patients settled. When I came back in to chat with him, he typed the following on his iPad, "This is uncomfortable for me to ask, but I feel weird talking about it to my parents. Will I ever be able to have sex?" I was taken aback by the question, only because I had never cared for such a young patient with a permanent injury like this one before. I said, "To be honest with you, I'm not sure. I know that it's probably unlikely just based on the level of your injury, but I won't be the one to say no for sure, because I just don't know. I would be more than happy to relay these concerns to your provider to see if I can get some answers for you though." He replied in agreement, and I made sure the provider would stop by later that day to chat with him about his concerns.

That afternoon, the provider came by and told the patient that it was highly unlikely that he would be able to have sex, but that until more time had passed and he was given more time to heal, that we just don't know what will happen. He also said, "There have been a lot of advancements in this area in recent years, so there may be some kind of assistive device that you could use to help you regain some sexual function. Because you have lost sensation below the waist, it's unlikely that you will be able to feel much, but again, we just don't know until we have given your body ample time to heal. In the future, if you ever start thinking about having children, there are options available for obtaining sperm, so it's not completely impossible for you to father biological children, should you desire to." I could tell that the patient was a little bit upset at these words, but he appeared to remain hopeful that he might regain some function in the future.

Chronic Pain

Chronic pain (pain lasting more than six months), especially when uncontrolled, can negatively impact sexual health in several ways. First, pain can make some sexual positions uncomfortable, or even impossible. For example, chronic conditions such as arthritis and back pain can inhibit flexibility and/or cause discomfort during sexual intercourse. Second, chronic pain often causes fatigue, making it difficult for the individual to have enough energy to participate in sexual activities. Even if they are interested in sex, fatigue may limit their ability to fully participate or achieve an orgasm. Addressing sexual function in the context of chronic pain often requires a holistic approach that

includes treating the pain, addressing emotional concerns, and maintaining open communication with healthcare providers and partners. Therapies such as cognitive behavioral therapy, physical therapy, and couples counseling can be beneficial in managing both pain and its impact on sexual function.

Medications

There are many medication classes that can have a significant impact on sexual function (Table 33.5). It is important to note that not every single drug in the class of medications causes all (or any) of the listed effects, but they are commonly associated with many of the drugs in that class.

Medication Class	Effect on Sexual Function
Antidepressants	• Decreased libido • Delayed orgasm • Erectile dysfunction
Antipsychotics	• Decreased libido • Erectile dysfunction • Difficulty achieving orgasm
Hormonal medications (e.g., contraceptives, hormone replacement therapy)	• Decreased libido • Vaginal dryness
Antihypertensives	• Erectile dysfunction • Decreased libido
Opioids	• Decreased testosterone levels • Decreased libido • Erectile dysfunction • Difficulty achieving orgasm

TABLE 33.5 **Medication Classes That Can Affect Sexual Function**

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 1

Mr. Morales, a 46-year-old male, is being seen in the clinic for an annual wellness examination. During the examination, Mr. Morales reports that he has been having trouble achieving and maintaining erections during sex. He states, "My wife is getting frustrated and so am I. I'm not even that old yet. Why is this happening to me?"

Past Medical History	**Medical history:** Type 2 diabetes, hypertension, depression **Family history:** Both parents alive and well, mother has hypertension and depression. **Social history**: Married x twenty years, two teenage children. Wife recently diagnosed with breast cancer. **Current medications:** • Fluoxetine (Prozac) 20 mg PO daily • Metoprolol (Lopressor) 50 mg PO twice daily

1. Recognize cues: Based on the provided information, what cues are most significant for the nurse to recognize?

2. Analyze cues: What might be some contributing factors to the patient's reported erectile dysfunction (ED) symptoms?
3. Prioritize hypotheses: The nurse recognizes the patient's symptoms are consistent with erectile dysfunction (ED) and that it may be partially caused by his current health status and medications. What other information should the nurse obtain from the patient at this time regarding potential causes of his ED symptoms?

Psychological Factors Affecting Sexuality

In addition to physical factors, psychological factors also have a significant impact on sexual function and health. Human sexuality is influenced by many psychological variables, including but not limited to, mental health, body image, and stress. Nurses play a vital role in recognizing and addressing the psychological dimensions of sexual health and function, thereby promoting holistic well-being for individuals across the life span.

Mental Health

Mental health and sexual health often go hand in hand. Although sexual dysfunction is often a result of physical conditions (e.g., heart disease, diabetes), they can also have underlying psychological causes. Specifically, depression, anxiety, substance use disorders, and schizophrenia have all been shown to contribute to the development of sexual dysfunction (Sewalem et al., 2022). It is vital that nurses and other healthcare providers treat patients with mental health disorders holistically and not shy away from conversations about sexuality and sexual health. Studies have shown that sexual health needs, especially those of individuals with concurrent mental health disorders, are not addressed appropriately (Hortal-Mas et al., 2022). Though discussing mental health and sexuality can be uncomfortable topics for some, it is imperative that they are addressed appropriately to ensure that all of the patient's needs are being met and holistic, patient-centered care is being provided.

Body Image

Body image plays a significant role in achieving sexual health and well-being. When individuals have a positive body image, they tend to feel more confident and comfortable with their bodies, which can enhance sexual experiences and intimacy. Conversely, negative body image can lead to feelings of self-consciousness, shame, and insecurity, which may contribute to sexual dysfunction, avoidance of sexual activity, or dissatisfaction with sexual relationships. For example, individuals with poor body image may avoid being seen naked or engaging in certain sexual positions due to feelings of embarrassment or fear of judgment. This avoidance can lead to decreased sexual pleasure and intimacy within relationships. Body image concerns can also affect communication and openness in sexual relationships. Individuals may feel hesitant to express their desires or preferences, fearing rejection or judgment from their partner. This lack of communication can hinder sexual satisfaction and intimacy, as partners may not fully understand each other's needs or feel emotionally connected during sexual interactions. Furthermore, societal standards of beauty and unrealistic media portrayals can exacerbate body image issues, leading individuals to compare themselves unfavorably to idealized images and to feel inadequate. These cultural influences can contribute to body dissatisfaction and impact sexual self-esteem.

PATIENT CONVERSATIONS

Body Image Concerns During Sex

Scenario: The patient is a 56-year-old female being seen in the clinic for an annual follow-up appointment following a double mastectomy and chemotherapy treatment for breast cancer.

Nurse: Good morning, Mrs. Johnson. How are you feeling today?

Patient: Good morning. I'm doing okay, thank you. I've been feeling a bit anxious lately, though.

Nurse. I'm sorry to hear that. Is there anything specific that's been on your mind?

Patient: Well, it's a bit embarrassing to talk about, but I've been feeling self-conscious about my body lately. Since my mastectomy, I can't help but feel insecure about how I look. It's starting to affect my sex life and I can tell my

husband is getting irritated.

Nurse: It's completely normal to have concerns about body image, especially after such a significant change. I want you to know that you're not alone, and it's okay to feel this way. Have you and your husband had the chance to discuss these feelings together?

Patient: We've touched on it briefly, but I think we're both struggling to find the right words. I worry that he doesn't find me attractive anymore.

Nurse: It's understandable that you would feel that way, but I want to assure you that physical appearance doesn't define your worth. Your husband is likely navigating his own emotions surrounding your mastectomy. It might be helpful to have an open and honest conversation with him about your concerns. Would you like some guidance on how to approach this conversation?

Patient: Yes, please. I'm not sure where to start.

Nurse: I recommend choosing a time when you both feel relaxed and comfortable, perhaps over a quiet dinner at home. Begin by expressing your feelings honestly and openly, using "I" statements to convey your emotions without placing blame. Let him know that you value his support and understanding, and that you want to work together to strengthen your intimacy and connection. Remember, communication is key in any relationship, and sharing your vulnerabilities can bring you closer together.

Patient: Thank you so much. That's really helpful advice. I'll try to talk to him tonight.

Nurse: You're welcome, Mrs. Johnson. Remember, I'm here to support you. If you ever need someone to talk to or have any questions, don't hesitate to reach out. You're not alone in this.

Stress

Stress can have a significant impact on sexual health, affecting both physical and psychological aspects of sexual function in several ways. First, high levels of stress can cause preoccupation with worries or responsibilities, leaving no physical or mental energy leftover for sexual activity. Second, stress can cause an inability for males to get an erection and for females to achieve orgasm. This is especially true in cases of chronic stress. Chronic stress disrupts hormone balance, increasing cortisol and adrenaline levels, which can inhibit sexual arousal and responsiveness. Lastly, chronic stress is linked to mental health conditions including depression and anxiety, both of which can further exacerbate sexual dysfunction. These conditions can also increase feelings of inadequacy, guilt, or shame related to sexual performance or desire. Chronic stress is a vicious cycle that affects many aspects of life, including sexual health and functioning.

Psychosocial Factors Affecting Sexuality

Psychosocial factors, which encompass both psychological and social aspects of an individual's life, can profoundly influence sexual health. These factors interact with biological and environmental elements to shape attitudes, behaviors, and experiences related to sexuality.

Culture

Cultural beliefs, societal expectations, and norms surrounding sexuality can influence how individuals perceive and express their sexuality. Attitudes toward gender roles, sexual orientation, and sexual behaviors are shaped by cultural and societal influences, which can affect sexual identity, self-expression, and access to sexual health resources. In some cultures, such as in many Western countries, there is growing acceptance and support for diverse sexual orientations and gender identities. This acceptance is reflected in laws that protect LGBTQIA+ rights, societal norms that encourage open discussion about sexual orientation, and widespread availability of sexual health resources tailored to LGBTQIA+ individuals. Conversely, in more conservative cultures, such as in some Middle Eastern or African countries, traditional beliefs and societal norms often dictate strict gender roles and heteronormative expectations. Homosexuality may be stigmatized or even criminalized, and gender nonconformity may be met with discrimination or violence. The main takeaway is that nurses and other healthcare professionals must remain open-minded and nonjudgmental to provide culturally competent care that accounts for cultural variations in beliefs about sexuality.

CULTURAL CONTEXT

Female Genital Mutilation (FGM)

Female genital mutilation (FGM) involves the partial or total removal of the external female genitalia for nonmedical reasons, most often related to cultural or religious beliefs. It has been estimated that more than 200 million females that are alive today have experienced FGM (World Health Organization, n.d.). FGM is nationally recognized as a violation of human rights of girls and women and a severe form of gender discrimination. The World Health Organization (WHO) has developed a goal to rid the world of FGM by the year 2030.

Religion

Religion can have a significant influence on sexual health by shaping attitudes, beliefs, and behaviors related to sexuality. The impact of religion on sexual health varies widely depending on specific religious teachings, cultural practices, and individual interpretations. Religious teachings often provide a moral framework for understanding sexuality and guiding sexual behavior. Values such as **monogamy** (having only one partner at a time) and **abstinence**, or refraining from engaging in sex before marriage, may be emphasized within some religious communities, influencing individuals' choices regarding sexual activity, contraception, and relationships. Some religions may stigmatize certain sexual behaviors or identities, leading to feelings of guilt, shame, or self-judgment among individuals who do not conform to religious norms. Stigmatization of premarital sex, extramarital affairs, nonheterosexual orientations, or gender nonconformity can create barriers to seeking sexual health services and support. It is important to recognize that the impact of religion on sexual health is complex and multifaceted, and individuals' experiences may vary widely within and across religious traditions. Nurses should approach discussions of sexual health with sensitivity to patients' religious and cultural backgrounds, respecting their beliefs and values while providing accurate information and support to promote positive sexual well-being.

Ethics

There are several ethical factors that may affect an individual’s sexuality. First, the importance of informed consent in all sexual interactions cannot be understated. All parties must freely and willingly consent to all aspects of sexual activity without coercion or pressure. Second, the ethical principle of autonomy should be emphasized for all individuals, regardless of their sexuality. Individuals should be able to make informed decisions about their sexual health and relationships, free from outside coercion or judgment. Additionally, ethical sexual behavior involves the individual respecting the autonomy and dignity of themselves and others. It means treating others with kindness, empathy, and understanding, and not sexually objectifying them. Third, ethical considerations related to sexuality mean that nurses and other healthcare professionals must recognize and respect the rights of individuals, regardless of gender, sexual orientation, or any other factor related to one’s sexuality. Additionally, it involves challenging power imbalances and advocating for equitable treatment and opportunities for all, both inside and outside of the healthcare system. Lastly, ethical considerations related to sexuality prioritize the safety and well-being of all parties involved. This includes practicing safe sex to prevent the spread of STIs and taking measures to prevent unwanted pregnancies. Ethical sexual behavior also involves being aware of and addressing the emotional, psychological, and physical consequences of sexual activity.

Lifestyle

Certain lifestyle choices can have an impact on sexual health and functioning (Table 33.6).

Lifestyle Factor	Impact on Sexual Health
Diet and nutrition	• Good nutrition supports overall health, including sexual health. • Maintaining healthy weight can prevent conditions such as heart disease and diabetes, both of which can negatively impact sexual health.
Smoking and substance use	• Smoking has been shown to increase risk of erectile dysfunction in men and decrease fertility in women. • Alcohol and drugs can impair sexual function, decrease libido, and contribute to risky sexual health behaviors.
Sleep	• Chronic sleep deprivation can lead to fatigue and decreased libido.
Relationships	• Communication and emotional connection with a sexual partner can impact sexual satisfaction and health. • Healthy relationships foster intimacy and enhanced sexual experiences.

TABLE 33.6 Lifestyle Factors and Impact on Sexual Health

33.4 The Nurse's Role in Providing Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe how the nurse acts as an educator
- Recognize how the nurse will be a role model when providing care
- Identify how the nurse is a mandatory reporter

From describing medication side effects to teaching patients about their medical conditions, one of the main roles of the nurse is acting as an educator. This is especially true for sexual health. There are many aspects of sexual health that require the nurse to act as an educator, some of which are described in more detail in the following sections.

Nurse as an Educator

Providing education related to sexual health can be sensitive and difficult at times, both for the nurse and for the patient receiving it. It is important to remember that sexual preferences and health are highly personal and can be uncomfortable to discuss, even if the nurse and patient have a good relationship. The nurse must possess an extensive knowledge base about sexual health topics including STIs, contraception (methods used to prevent pregnancy resulting from sexual intercourse), and reproduction to provide information to the patient that is accurate and easily understandable. Additionally, the nurse must be able to address any misconceptions about sexual health that the patient may have to help dispel misinformation and promote understanding.

The nurse as an educator must create a safe and supportive environment for the patient to openly discuss their sexual concerns and be able to provide referrals and other resources as needed to fully address the concerns. While acting as an educator, the nurse should acknowledge and respect the patient's cultural and religious beliefs, even if they do not align with the nurse's personal beliefs. Overall, the nurse acts as an educator by empowering patients to take responsibility for their sexual health by providing them with the information and support that they need to make informed decisions about their health. Some of the common topics requiring education to be provided by the nurse include STIs, pregnancy, and fertility, all of which are discussed in more detail in the following sections.

Sexually Transmitted Infections

An infection that is primarily spread through sexual contact, known as a **sexually transmitted infection (STI)**, may develop after sexual contact with an infected individual (Table 33.7). These infections can range from asymptomatic to severe depending on the specific type of infection as well as the baseline health status of the infected person. Safe sex practices such as limiting sexual partners or using appropriate protection such as condoms can decrease

the risk for developing STIs. Nurses caring for patients at risk for STIs must not only be able to adequately treat the physical condition and symptoms, but also be able to provide counseling and education regarding effective prevention strategies.

Sexually Transmitted Infection (STI)	Signs/Symptoms
Chlamydia	• Abnormal discharge from vagina or penis • Painful urination with itching or burning • Urinary frequency • Pelvic or abdominal pain • Irregular vaginal bleeding
Gonorrhea	• Same symptoms as chlamydia—these STIs often occur together.
Herpes simplex virus (HSV)	• Itching or tingling sensation is noticed a few days before outbreak of sores (called *prodrome*). • Blisters or sores are present on mouth/lips or genitals. • Flu-like symptoms appear (e.g., headache, fever, chills).
Human papillomavirus (HPV)	• Cases are often asymptomatic, especially if mild. • Genital warts are seen in more severe cases. • Severe types may lead to cancer of cervix, vagina, or anus if left untreated.
Syphilis	• A painless sore called **chancre**, develops where the bacteria entered the body (e.g., penis, vagina, anus, lips, mouth). • Late-stage symptoms include flu-like symptoms and rash on hands and feet.

TABLE 33.7 **Signs and Symptoms of Common STIs**

CLINICAL JUDGMENT MEASUREMENT MODEL

Form a Hypothesis: Recognizing a Potential STI

A 22-year-old female seeks care at a sexual health clinic due to lower abdominal pain and vaginal discharge following unprotected intercourse with a new partner. The nurse begins by gathering a comprehensive sexual history, probing for details about recent sexual activity, contraceptive practices, and symptoms experienced. Concurrently, a pelvic examination is conducted to assess for physical cues such as abnormal discharge, cervical tenderness, or lesions indicative of infection. Analyzing these cues, the nurse considers the patient's individual risk factors, including her age, sexual practices, and recent exposure, to determine the likelihood of STI transmission. Diagnostic tests, including nucleic acid amplification tests (NAATs) for common STIs such as chlamydia and gonorrhea, are ordered to confirm the presence of infection. Based on the identified cues and analysis, the nurse forms hypotheses regarding potential STIs such as chlamydia, gonorrhea, or trichomoniasis, considering the risk of coinfection and associated complications. This systematic approach to clinical judgment empowers the nurse to provide targeted, evidence-based care, facilitating timely diagnosis and treatment to optimize patient outcomes in sexual health management.

Fear of Pregnancy

Nurses play a crucial role in supporting patients who have a fear of pregnancy by providing them with information, empathy, and resources. Nurses can act as educators by offering detailed information about contraception methods, including their effectiveness, benefits, and potential side effects. They can explain how to properly use contraceptives and address any misconceptions or concerns the patient may have. Nurses can then assist patients

in selecting the most appropriate contraceptive method based on their individual needs, preferences, and medical history. They can also provide guidance on emergency contraception options for situations where contraception has failed or was not used. Most importantly, the nurse should create a supportive and nonjudgmental environment that allows the patient to feel comfortable discussing their fears and concerns related to pregnancy.

Fear of Infertility

While some patients are fearful of becoming pregnant, others may express fears related to **infertility**, or the inability to conceive a child. Nurses can act as educators in these situations by providing detailed information about fertility, including factors that can affect fertility, common causes of infertility, and available treatment options. They can explain the various diagnostic tests used to assess fertility and discuss potential lifestyle modifications that may improve fertility. Dealing with the fear of infertility can be emotionally challenging for patients. Nurses can offer empathetic support and nonjudgmental listening allowing patients to express their fears, concerns, and emotions openly. Validation of their feelings and providing a safe space for expression can be immensely helpful. Nurses may also empower patients by providing information about fertility preservation options such as egg freezing or sperm banking. This is especially helpful for patients who are facing medical conditions or treatments that could negatively impact their fertility in the future.

Nurse as a Role Model

In addition to acting as educators, nurses are also often viewed as role models. Specifically, when caring for the sexual health of patients, nurses demonstrate characteristics of a good role model by understanding human sexuality, possessing self-awareness and communication skills, and being able to recognize patient problems and provide competent care.

CLINICAL SAFETY AND PROCEDURES (QSEN)

Enhancing Patient Safety and Quality Care: Addressing Patient Sexuality

As nurses, it is essential to recognize and address the diverse needs and concerns related to patient sexuality to ensure the provision of safe, competent, and patient-centered care. Incorporating patient sexuality into nursing practice contributes to improved patient outcomes and enhances the overall quality of care. Here's how addressing patient sexuality relates to each of the QSEN competencies:

- Patient-centered care: Recognizing and respecting patient sexuality is fundamental to providing patient-centered care. By acknowledging and validating patients' sexual identities, preferences, and concerns, nurses demonstrate a commitment to meeting the individual needs and values of each patient.
- Teamwork and collaboration: Collaborating with interdisciplinary teams, including social workers, counselors, and sexual health specialists, allows nurses to address the multifaceted aspects of patient sexuality effectively. By working collaboratively, nurses can ensure that patients receive comprehensive and holistic care that addresses their sexual health and well-being.
- Evidence-based practice: Utilizing evidence-based guidelines and best practices in addressing patient sexuality enhances the quality and safety of care. Nurses should stay updated on the latest research and recommendations related to sexual health assessment, counseling, and interventions to provide optimal care based on current evidence.
- Quality improvement: Engaging in continuous quality improvement efforts related to patient sexuality involves evaluating current practices, identifying areas for improvement, and implementing strategies to enhance patient outcomes. Nurses can participate in quality improvement initiatives aimed at promoting inclusive and affirming care environments for patients of all sexual orientations and gender identities.
- Safety: Ensuring the safety of patients in matters related to sexuality involves creating a supportive and nonjudgmental environment where patients feel comfortable discussing sensitive topics. Nurses must prioritize patient confidentiality, privacy, and emotional well-being while addressing sexual health concerns, thereby promoting a culture of safety and trust within healthcare settings.
- Informatics: Leveraging health informatics tools and technologies can facilitate the assessment, documentation, and communication of patient sexuality-related information. Nurses should utilize electronic health records and other informatics resources to capture patient preferences, concerns, and interventions

accurately, thereby enhancing continuity of care and promoting patient safety and satisfaction.

By integrating patient sexuality into nursing practice and addressing it through the lens of the QSEN competencies, nurses can promote patient-centered care, improve patient outcomes, and contribute to a culture of inclusivity, respect, and safety within healthcare settings.

Understanding of Human Sexuality

First and foremost, to act as a role model when caring for the sexual health of their patients, nurses must demonstrate a thorough understanding of human sexuality. To provide high quality patient care, nurses must be knowledgeable about the topic at hand. In this context specifically, nurses must be knowledgeable about concepts related to gender identity, sexual preferences, and clinical symptoms that could be indicative of sexual health disorders. Although most nursing programs offer at least an introduction to these topics, it is important for nurses to participate in continuing education courses to stay abreast of changes in terminology or clinical guidelines to assist them in providing the highest quality care for patient sexual health concerns.

Self-Awareness

The ability to recognize, understand, and accurately perceive one's own thoughts, feelings, beliefs, attitudes, and behaviors, known as self-awareness, is imperative for nurses, especially in the context of sexuality. By being self-aware, nurses can provide care that is empathetic and respectful. To do this, nurses should reflect on their own attitudes, beliefs, and biases regarding sexuality. Awareness of personal biases enables nurses to provide nonjudgmental care and avoid imposing their values on patients. Nurses may encounter situations that evoke strong emotions or discomfort when discussing sexual health topics. By acknowledging and managing their emotional reactions, nurses can maintain professionalism and provide supportive care to patients without allowing their personal feelings to interfere. Additionally, nurses must establish and maintain appropriate professional boundaries when discussing sensitive sexual health issues with patients. Self-awareness helps nurses recognize and address any boundary issues that may arise to ensure patient comfort and trust. And finally, nurses should engage in regular self-reflection that allows them to assess their performance, identify areas for improvement, and enhance their ability to provide patient-centered care (PCC). Reflective practices, such as journaling or peer supervision, can help nurses deepen their self-awareness and refine their approach to caring for patients' sexual health.

Communication Skills

Communication skills are crucial for nurses when caring for patients' sexual health as they facilitate open dialogue, build trust, and ensure that patients feel comfortable discussing sensitive topics. First, nurses should practice active listening, which involves giving the patient their full attention while they are speaking, maintaining eye contact, and providing nonverbal cues to show they are engaged and listening to what the patient is saying. When speaking to the patient, nurses should use clear, nonjudgmental language when discussing sensitive sexual health topics. They should avoid using medical jargon or slang terms that may be confusing to the patient. Using inclusive language promotes open communication and helps the patient feel comfortable asking questions about their sexual health. When communicating with patients, nurses should be sensitive to cultural differences related to sexual health. Culturally sensitive care fosters trust and respect, enhancing the nurse-patient relationship and promoting effective communication.

LINK TO LEARNING

Communication skills are important for all nurses to have, especially when caring for patients experiencing sensitive issues related to their sexual health. This video provides some therapeutic communication techniques (https://openstax.org/r/77TherapComm) that may be helpful to use when communicating with patients about sensitive topics.

Recognize Problems

Nurses can recognize problems when caring for patients' sexual health through various means, including observation, assessment, and collaboration. Nurses can observe patients for physical signs or symptoms that may indicate sexual health problems, such as unusual genital discharge, sores, rashes, or discomfort during urination or sexual activity. Additionally, changes in behavior or mood, such as increased anxiety or depression, may also signal

underlying sexual health concerns. Nurses conduct thorough assessments of patients' sexual health by asking relevant questions about sexual activity, contraception use, sexual function, reproductive history, and any concerns or symptoms they may be experiencing. Assessment tools, such as standardized questionnaires or screening tests for STIs or sexual dysfunction, may also be used to gather comprehensive information. Additionally, nurses collaborate with other healthcare professionals to identify and address complex sexual health problems. Interdisciplinary teamwork allows for comprehensive assessment, diagnosis, and management of patients' sexual health concerns, ensuring that they receive holistic, high-quality care.

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 2

Refer back to Unfolding Case Study #5: Part 1 for a review on the patient data.

Nursing Notes	**1035:** Patient expresses concern about erectile dysfunction. He reports frustration about being unable to participate fully in sexual intercourse with his wife. He reports his wife is also frustrated with the situation, especially given her new diagnosis of breast cancer. He states, "I don't want to start taking Viagra in my 40s. That's just embarrassing. Surely there is something else I can do. My wife thinks I don't want to have sex with her because she has cancer, which isn't even remotely true. My body is failing me."

4. Generate solutions: The nurse prepares to report the patient's concerns to the treating provider. What interventions does the nurse anticipate the provider might order?
5. Take action: The nurse is getting ready to discuss the use of medications to treat the patient's ED symptoms. Thinking about how the nurse can act as both an educator and a role model, how might the nurse go about handling this conversation?
6. Evaluate outcomes: What are some examples of positive patient outcomes that the nurse should assess for after providing the patient with information about treatment options for his ED symptoms?

Nurse as a Mandatory Reporter

Mandatory reporting laws require that individuals who have contact with at-risk populations report suspected mistreatment or abuse to proper authorities. At-risk populations are defined as children, individuals with disabilities, and older adults. Examples of mandatory reporters include

- childcare providers,
- clergy,
- coaches,
- counselors,
- teachers,
- law enforcement, and
- healthcare providers, including nurses.

These laws cover several kinds of abuse and mistreatment including physical, sexual, emotional, and financial. For this unit, we will focus on the different types of sexual abuse and mistreatment including sexual discrimination, sexual harassment, and sexual assault.

REAL RN STORIES

Mandated Reporting—Sexual Abuse

Nurse: Gina, RN
Clinical setting: Emergency department

Years in practice: 12
Facility location: Urban level 1 trauma center in California

It was 10:30 p.m. and I was just about to get off work from my 11a–11p shift in the ER when I saw a distressed couple of teenage girls walk in. I walked over to see what was going on. One of the girls couldn't have been more than 15 years old and was super withdrawn, refusing to make eye contact with me. Her friend told me that she had been sexually assaulted by someone she knew but didn't want to give any other information until they were in a patient room.

I got the girls set up in a triage room and got them a warm blanket and some water. At this point, the girl began to tell me what happened. My heart sank as I listened to her recount how she was at a small party with some of her older friends when one of the male friends pulled her aside and began to touch her inappropriately. She asked him to stop multiple times, but he refused. She said he was able to get her pants off and stuck his penis inside of her. At that point, she completely froze up and felt like she couldn't move. She said, "It's all my fault. I could have fought him off, but my body wouldn't move. I did this to myself." I assured her that it was not her fault at all, but she remained adamant that it was. After letting her finish telling me what happened, I let her know that abuse like this must be reported by law to the authorities. She panicked and said, "What if he finds out that I reported him?" I assured her that the authorities would be able to answer that question more thoroughly but that reports like this can be kept anonymous if she chooses not to press charges.

At this point, I excused myself and made a phone call to speak with a sexual assault nurse examiner (SANE) about the situation. The SANE nurse thanked me for my report and said she would be there in fifteen minutes to conduct an examination and help the patient.

Sexual Discrimination

More commonly called "sex discrimination," **sexual discrimination** refers to when an individual is treated less favorably because of their sex, which includes sexual orientation, gender identity/expression, pregnancy, and any other sex-related stereotypes. In many cases, sexual discrimination occurs in the workplace. Some examples of sexual discrimination include the following:

- refusing to hire or promote an individual because they identify as being Transgender
- creating a hostile work environment though unwelcome sexual advances, comments, or behaviors (e.g., inappropriate jokes, indecent gestures)
- denying access to reproductive healthcare services (such as contraception or abortion) based on their a person's sex or gender
- denying housing to an individual because they are gay

Sexual Harassment

A specific type of sexual discrimination, **sexual harassment** includes unwelcome sexual advances, requests for sexual favors, and other forms of physical or verbal harassment of a sexual nature in any environment, including online. Some examples of sexual harassment include the following:

- offering a promotion to an individual only if they have sex with the manager first
- jokes about an individual's sexual preferences
- sending unwanted sexual photos, emails, or texts
- touching an individual when the contact is not wanted

Sexual Assault

A **sexual assault** involves sexual contact or behavior, often physical, that occurs without permission or consent from the victim. Although sexual harassment violates civil laws in many cases, sexual assault violates criminal laws. Like other types of assault, the threat of assault and/or using the threat of assault to force someone to perform or submit to an act can both be considered sexual assault. Examples of sexual assault include

- rape,
- forcing a victim to perform sexual acts, and
- fondling or unwanted sexual touching.

A serious global issue called **sex trafficking** involves the exploitation of individuals through force, fraud, or coercion for the purposes of sexual exploitation. Sex trafficking is deeply intertwined with sexual assault because it involves coercing or forcing individuals into sexual activities against their will or under conditions where consent is not gained. Victims of sex trafficking are often manipulated through threats, deception, or physical force to engage in commercial sex acts for the financial gain of traffickers.

LINK TO LEARNING

Healthcare providers must be acutely aware of the signs and necessary interventions of sex trafficking (https://openstax.org/r/77SexTraficSign) to identify and aid potential victims.

Summary

33.1 Sexual Identity

Biological sex refers to the sex assigned to an individual at birth, either male or female. However, there are several gender variations because the sex assigned at birth does not always correlate with an individual's feelings about their gender. Society has long dictated that individuals should act according to their biological sex, adhering to the appropriate gender role expression; however, there has been an increase in awareness and understanding of gender identity variations over the years. The same can be said for sexual orientation. Nurses are tasked with remaining knowledgeable and open-minded about these variations in gender identity and sexual orientation to provide high-quality, patient-centered care. Nurses must recognize that all variations are normal, and each individual should be treated with respect for their gender and sexual preferences.

33.2 Sexual Fulfillment

Sexual fulfillment, which involves satisfaction and pleasure in sexual relationships, is essential for overall health and well-being. Nurses must address patient sexual concerns with open-mindedness and without judgment, as this promotes holistic care and optimal patient outcomes. Achieving sexual fulfillment varies greatly among individuals and can involve physical and psychological forms of sexual stimulation. Physical stimulation includes activities such as kissing, manual stimulation, and oral stimulation, which involve contact with erogenous zones such as the mouth, ears, and genitals. Psychological stimulation can involve adult media and certain sounds, eliciting arousal without physical contact.

Sexual behavior, aimed at arousal, pleasure, or reproduction, includes both adaptive and maladaptive forms. Adaptive behaviors are healthy and enrich life, such as obtaining consent, communicating needs, respecting boundaries, and practicing safe sex. Maladaptive behaviors, which can be problematic, include pornography addiction, infidelity, and inappropriate touching. Sexual expression encompasses various activities such as masturbation, sexual intercourse, and oral-genital stimulation, each with its own benefits and risks. Understanding these diverse aspects of sexuality is crucial for providing comprehensive and empathetic care.

33.3 Factors Affecting Sexuality

Sexuality is a vital component of health that should not be overlooked. Nurses must recognize that there are many factors that can have a profound impact on a patient's sexual health. Certain physiological factors including developmental changes, medical conditions, and use of medications can significantly alter sexual functioning. In addition to physical characteristics, there are many psychological factors that can impact sexual health, including mental health, body image, and stress. Additionally, psychosocial factors such as culture, religion, and lifestyle behaviors have the potential to impact sexual health and well-being. Ethical considerations related to sexuality include the importance of informed consent for sexual activity, recognizing and respecting autonomy related to sexual health decisions, and prioritizing the safety and well-being of all parties involved.

33.4 The Nurse's Role in Providing Care

There are many aspects of sexual health that require the nurse to act as an educator, including providing education about STIs, pregnancy, and fertility. Additionally, the nurse serves as a role model when caring for patient's sexual health by understanding human sexuality, practicing self-awareness, communicating effectively, and recognizing potential sexual health problems. In addition to these two roles, nurses also serve as mandated reporters, which means that they are required by law to report suspected sexual abuse or mistreatment of at-risk populations to the proper authorities.

Key Terms

abstinence the practice of refraining from engaging in certain activities or behaviors, such as from sex before marriage

ambiguous genitalia genitals that do not look as expected for a male or female

androgynous gender expression that does not conform to societal expectations of how males or females should look and/or act

anilingus oral sex involving the anus

aromantic individuals who do not experience romantic attraction
asexual relating to or being an individual who does not experience sexual attraction or has a lack of interest in sexual activity
biological sex sex assigned to an individual at birth
bisexual relating to or being an individual who acknowledges that they have the potential to be attracted (romantically, emotionally and/or sexually) to people of more than one gender
chancre a painless sore associated with a syphilis infection that develops where the organism entered the body
chromosomes threadlike structures containing DNA that are located in the nucleus of a cell
cisgender relating to or being an individual whose gender identity aligns with the biological sex they were assigned at birth
congenital adrenal hyperplasia (CAH) a genetic disorder affecting the adrenal glands that causes an overproduction of sex hormones, resulting in enlarged external female genitalia in infants, early appearances of pubic hair, and acne and rapid growth patterns during adolescence
cunnilingus oral sex involving the vagina, vulva, or clitoris
erogenous zones areas of the body that trigger sexual arousal when stimulated or touched
fellatio oral sex involving the penis
fertilization the process in which sperm unites with an egg to form a zygote
foreplay intimate physical and emotional interactions that occur before sexual intercourse
gay a term used to describe men who are romantically or sexually attracted to other men; also used more broadly to describe individuals of any gender that are attracted to individuals of the same gender
gender a social construct that includes norms and behaviors associated with being a man or a woman
gender binary a classification of gender into two distinct categories (male and female)
gender dysphoria distress experienced by some people when their sex assigned at birth and assumed gender is not the one with which they identify
gender expansive health care a care-delivery model that is inclusive and affirming of gender identity
gender fluid relating to or being an individual who feels as if they are both male and female either simultaneously or at different times
gender identity a person's deeply felt, internal and individual experience of gender, which may or may not correspond to the person's physiology of designated sex at birth
gender nonbinary a gender identity that does not fit within the traditional framework of being male or female
gender nonconforming relating to or being an individual who displays behaviors or appearances that do not align with societal expectations of their sex assigned at birth
gender role expression the way a person communicates their gender to others, such as by clothing, appearance, and mannerisms
gender roles strict societal beliefs that define "acceptable" behaviors for each gender
heterosexual relating to or being an individual who is sexually attracted to a person of a different gender or sex
infertility the inability to conceive a child
intersex relating to or being an individual whose chromosomes, hormones, or reproductive or sexual anatomy does not fully align with either male or female
lesbian relating to or being a woman who is romantically or sexually attracted to other women
LGBTQIA+ lesbian, gay, bisexual, transgender, questioning/queer, intersex, asexual, gender diverse, and other identities and orientations
masturbation self-stimulation of genitals or other areas of the body for sexual arousal or pleasure
monogamy having only one romantic or sexual partner at a time
oral-genital stimulation (also, oral sex) the stimulation of an individual's genitals by another individual's mouth, lips, or tongue
orgasm a peak of sexual excitement, characterized by intense physical pleasure and a series of involuntary muscle contractions in the genital area
pornography materials, such as books, magazines, videos, and websites, that depict explicit sexual content primarily intended to stimulate sexual arousal
puberty the stage of development during which physical and sexual maturity occurs and individuals become capable of reproduction
questioning referring to a time of exploration and self-discovery about one's sexual orientation, gender identity,

and/or gender expression

sex chromosomes a specific pair of chromosomes that determine an individual's biological sex

sex trafficking exploitation of individuals through force, fraud, or coercion for the purposes of sexual exploitation

sexual arousal the state of being physically and mentally excited by sexual stimuli; involves physiological responses such as increased heart rate, blood flow to the genital areas, lubrication in women, and erections in men

sexual assault sexual contact or behavior, often physical, that occurs without permission or consent from the victim

sexual behavior acts in which an individual engages to experience sexual arousal, sexual pleasure, orgasm, and/or reproduction of offspring

sexual discrimination treatment of an individual less favorably because of their sex, which includes sexual orientation, gender identity/expression, pregnancy, and any other sex-related stereotypes

sexual dysfunction difficulty experienced by an individual or a couple during any stage of normal sexual activity, including physical pleasure, desire, preference, arousal, or orgasm

sexual fulfillment the state of experiencing satisfaction, pleasure, and contentment in one's sexual relationships

sexual harassment unwelcome sexual advances, requests for sexual favors, and other forms of physical or verbal harassment of a sexual nature

sexual intercourse penetration of the vagina or anus

sexual orientation who an individual is attracted to sexually, emotionally, and/or romantically

sexual pleasure enjoyable and satisfying physical and emotional sensations experienced during sexual activity

sexually transmitted infection (STI) an infection that is primarily spread through sexual contact

transgender relating to or being an individual whose gender identity does not align with the sex assigned to them at birth

transsexual relating to or being an individual who uses medical interventions such as hormone therapy or gender-affirming surgeries to align their physical characteristics with their gender identity

Assessments

Review Questions

1. The nurse is caring for a patient with a biological sex of male. What statement about the individual is accurate?

a. The patient was born with a penis.
b. The patient identifies as male.
c. The patient has XX sex chromosomes.
d. The patient is gay.

2. What assessment findings would the nurse anticipate for a patient diagnosed with Klinefelter syndrome?

a. overgrowth of body hair
b. increased breast tissue
c. early menopause
d. enlarged genitalia

3. What situation represents an individual who is cisgender?

a. A biological male who identifies as female
b. A male who is gender nonbinary
c. An individual who is gender nonconforming
d. A biological female who identifies as female

4. The nurse is caring for a patient who is wearing both masculine and female pieces of clothing, making it difficult for the nurse to ascertain the patient's gender identity. What should the nurse do in order to correctly identify the patient's gender?

a. Assume the patient is female.
b. Ask the patient their gender and preferred pronouns.

c. Ask the patient's family member when the patient is out of the room.
d. Avoid using any gender pronouns at all.

5. What example describes a psychological form of sexual stimulation?
a. sensual dancing
b. giving a back massage
c. holding hands
d. watching a film

6. What example best exemplifies an adaptive type of sexual behavior?
a. watching pornography daily
b. paying for sex from sex workers
c. using appropriate contraceptives
d. touching a coworker when they ask not to be touched

7. The nurse is caring for a patient who reports that they do not always use condoms during sexual intercourse with strangers. What would the nurse document this as?
a. maladaptive behavior
b. infidelity
c. adaptive behavior
d. sexual expression

8. The nurse is describing the effects of masturbation to a patient. What effect would the nurse include in the teaching?
a. hairy palms
b. improved mood
c. vision loss
d. infertility

9. The nurse is caring for a patient who reports they can only be sexually aroused by watching other people engage in sexual activity. What term would the nurse use to document these findings?
a. voyeurism
b. sadism
c. masochism
d. sadomasochism

10. What characteristic related to sexual health is most likely to be seen in a young adult patient?
a. beginning of puberty
b. menopause
c. chronic illness impacting sexual function
d. establishment of sexual identity

11. A 55-year-old patient with a history of diabetes mellitus presents to the clinic complaining of difficulty maintaining an erection during sexual activity. Which pathophysiological mechanism is most likely contributing to his erectile dysfunction?
a. increased testosterone levels leading to desensitization of penile nerves
b. chronic inflammation and damage to blood vessels and nerves
c. excessive release of nitric oxide causing vasoconstriction
d. hyperactivity of sympathetic nervous system inhibiting sexual arousal

12. The nurse is caring for a patient who has recently been diagnosed with depression. The patient expresses concern about how their diagnosis may affect their sexual health and intimacy with their partner. What statement by the nurse best addresses the patient's concerns?

a. "Depression typically increases sexual desire and responsiveness, so you may notice an improvement in your sexual health."
b. "Depression usually has no impact on sexual health, so you shouldn't worry about any changes in your sexual function."
c. "It's common for individuals with depression to experience changes in their sexual desire and responsiveness. We can discuss coping strategies and treatment options to help manage any difficulties you may encounter."
d. "You should avoid discussing your concerns about sexual health with your partner, as it may cause unnecessary stress and strain on your relationship."

13. The nurse is providing education to a group of patients about lifestyle factors that can impact sexual health. What statement accurately describes the relationship between diet and nutrition and sexual well-being?
a. "Maintaining a healthy weight through proper nutrition can prevent conditions such as heart disease and diabetes, which can negatively affect sexual health."
b. "Poor nutrition has no significant impact on sexual health."
c. "Eating a diet high in saturated fats and sugars can increase libido and sexual arousal."
d. "Nutritional supplements have been shown to cure erectile dysfunction and improve sexual performance."

14. The nurse is providing education to a group of adolescents about STIs. What statement by one of the adolescents indicates a need for further education?
a. "I can tell I have chlamydia if I have a painful rash on my hands and feet."
b. "Flu-like symptoms can occur during an outbreak of herpes simplex virus (HSV)."
c. "Genital warts are a common symptom of human papillomavirus (HPV)."
d. "A chancre, which is a painless sore, is characteristic of syphilis."

15. The nurse is counseling a patient diagnosed with genital herpes simplex virus (HSV). What statement by the patient indicates understanding of the teaching?
a. "After I take my medication, the herpes virus is gone from my body forever."
b. "Herpes involves the development of chancres on my skin."
c. "I should avoid sexual contact during an outbreak to prevent transmission."
d. "Herpes is caused by a bacterial infection."

16. How can nurses effectively recognize problems when caring for patients' sexual health?
a. by solely relying on observation of physical signs or symptoms
b. by conducting thorough assessments of patients' sexual health and utilizing standardized questionnaires
c. by avoiding collaboration with other healthcare professionals to address complex sexual health issues
d. by focusing solely on the patient's verbal communication about sexual concerns

17. A nurse working in a pediatric clinic suspects sexual abuse in a child based on physical signs observed during an assessment. What is the nurse's appropriate action in accordance with mandatory reporting laws?
a. Refer the child to counseling services for further evaluation.
b. Document the findings and inform the child's caregiver.
c. Report the suspected abuse to the appropriate authorities as mandated by law.
d. Conduct further assessments to confirm the suspicion before taking any action.

18. What would you recognize as an example of sexual assault?
a. attempted rape
b. making lewd jokes
c. denying a promotion based on gender
d. sending a nude photo

Check Your Understanding Questions

1. What is the difference between biological sex and gender identity?
2. What terms related to gender identity and sexual orientation should be used only after an individual has used them to classify themselves to avoid using offensive language?
3. What is sexual expression and why is it important for sexual fulfillment?
4. What are some of the common side effects of medications that impact sexual health and functioning?
5. What is the difference between sexual harassment and sexual assault?

Reflection Questions

1. How would you provide care to a Transgender patient? Would you do anything different as compared to caring for a cisgender patient?
2. How do you think traditional gender roles can play a role in the development of gender dysphoria?
3. You're caring for a Transgender male patient and overhear another staff member saying something inappropriate about their gender identity. How would you handle the situation?
4. What do you think might cause an individual to display maladaptive behaviors?
5. You are caring for a patient who reports they like to engage in asphyxiation (intentional restriction of oxygen to a sexual partner's brain, often through choking). What should you do?
6. What effects do you think social media can have on body image and sexual health?
7. An unwanted pregnancy can be scary and cause severe anxiety. What are some strategies you could use when discussing a positive pregnancy test with a patient who did not wish to become pregnant?
8. Think about how you might use self-awareness when caring for a patient's sexual health and provide an example.

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #5: Part 1.
   If the patient from the case study also reported that he was experiencing a lot of stress at his job, how might that be contributing to his ED symptoms?
2. Refer to Unfolding Case Study #5: Part 2.
   In addition to ED symptoms, the patient also reports a new onset of painful urination and increased urinary frequency. The treating provider orders several STI tests. Based on the symptoms, which type of STI should the nurse suspect?

What Should the Nurse Do?

1. The nurse suspects sexual abuse of an older adult patient. What should the nurse do?
2. A nurse who is pregnant has just received word that she was not hired for a nursing job that she recently interviewed for. She has reason to believe that she was not hired because she is pregnant. What should the nurse do?

Competency-Based Assessments

1. Write a sample nurse-patient dialogue that displays respect for the patient while obtaining their gender identity and sexual orientation.
2. Create a patient pamphlet that compares adaptive and maladaptive sexual behaviors.
3. Write a script between a nurse and a patient that addresses mental health or body image issues that the patient is experiencing that are negatively affecting their sexual health.

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CHAPTER 34
Stress, Adaptation, and Homeostasis

FIGURE 34.1 Stressful circumstances and experiences can manifest in various ways, including nervousness, anxiety, difficulty coping, and strained relationships. (credit: modification of "Canva - Woman Feeling Emotional Stress" by "MismibaTinasheMadando"/Wikimedia Commons, CC BY 1.0)

CHAPTER OUTLINE

34.1 Stress and Adaptation
34.2 Effects of Stress on Health and Wellness
34.3 Factors Affecting Stress and Adaptation
34.4 Adaptation Theories and Models

INTRODUCTION For nurses, stress can be beneficial in providing patient care: it provides an edge of vigilance while managing all the facets of caring for patients who are at their sickest and in the most chaotic circumstances. Stress can have a negative effect on patient health, contributing to pathophysiological changes and causing problems, possibly even mortality.

Stress happens for a variety of reasons in all sorts of settings. Whether the stress response is helpful or a contributor to harmful changes depends on the individual's response to the stressor. In stressful situations, the body responds by releasing certain chemicals in an effort to provide the necessary physiological tools to confront whatever the challenge is. Those who manage stress in a positive manner ultimately tend to feel a sense of accomplishment; when stress is managed poorly, and especially in the setting of chronicity, those same signs and symptoms can cause detrimental changes.

34.1 Stress and Adaptation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the experience of stress
- Recognize concepts of stress and adaptation that affect health
- Describe the maintenance of physiological and psychological homeostasis

A physiological response by the body to a stimulus, or **stressor**, is called **stress**. The physiological changes involved in the stress response can be beneficial, life sustaining, and lifesaving, particularly in the face of danger. Acute stressful events are short lived, with prompt resolution and return to a steady state with little or no long-lasting results. Chronic stress, on the other hand, involves sustained effects of the stress response and no relief from the stimulated sympathetic nervous system, which can be detrimental to health.

The stress response, including its activation and subsequent resolution (or not), is a complex process involving multiple body systems, with resultant normal or pathophysiological changes. This module delves more deeply into the experience of stress: the normal response, positive reactions to it, including effective **adaptation** (the body's changes in response to stress), and negative results that can cause health problems. The body has an innate drive for **homeostasis**, or physiological balance. Stress can support or challenge this steady state.

Experience of Stress

People experience stress in different ways, based on factors such as past experiences, support systems, and overall attitudes. Whether the stress is from something perceived as positive or negative, however, the physiological responses involve the same basic chemical actions and reactions (Figure 34.2).

- When a person recognizes a stressor, their hypothalamus releases corticotropin-releasing hormone (CRH), which causes the anterior pituitary gland to secrete adrenocorticotropic hormone (ACTH).
- The ACTH causes the adrenal glands to release corticosteroids, most notably cortisol (a glucocorticoid), and to activate the autonomic nervous system (ANS), specifically the sympathetic nervous system (SNS).
- The SNS releases catecholamines: norepinephrine (noradrenalin), epinephrine (adrenaline), and dopamine. These chemicals generate the fight-or-flight response: heart rate and blood pressure increase, bronchioles dilate, and glycogen in the liver is converted to glucose.

Under normal circumstances, when the stressor has been resolved, the effects of SNS stimulation are opposed by its counterpart, the parasympathetic nervous system (PSNS). The stress hormones dissipate, and body processes normalize.

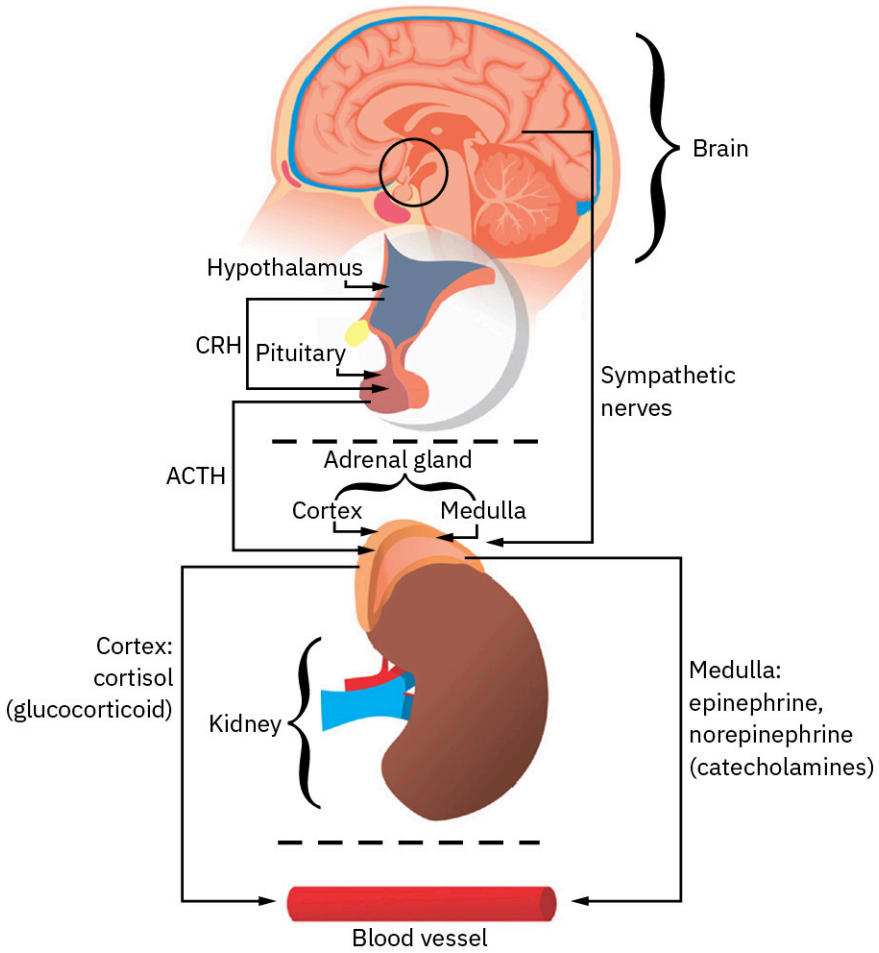

FIGURE 34.2 The stress response begins with the release of corticotropin-releasing hormone (CRH) and adrenocorticotropic hormone (ACTH), triggering the secretion of corticosteroids and generating the fight-or-flight response. (credit: modification of "Response to stress" by Campos-Rodríguez R, Godínez-Victoria M, Abarca-Rojano E, Pacheco-Yépez J, Reyna-Garfias H, Barbosa-Cabrera RE, Drago-Serrano ME/ Wikimedia Commons, CC BY 3.0)

Distress

Stress that is perceived negatively is called **distress**. It manifests in many ways, including **anxiety** (a feeling of unease, worry, or nervousness), sadness, pain, and varied vague symptoms that make isolating the cause difficult. The signs and symptoms of stress are similar to those of a stimulated SNS, such as tachycardia, hypertension (HTN), tachypnea, bronchiole and pupillary dilation, and release of glucose. Distress may be acute and relative to a particular event, such as a frightening encounter. Other causes of acute distress may include temporary illness or injury and the feelings of loss when a friend moves away.

Chronic stress develops when the distress is long lasting and unresolved. Medically, chronicity refers to something that develops slowly and is apt to worsen over time (Whitlock, 2023). Chronic stress tends to be responsible for the negative physiological changes associated with the stress experience, such as chronic occurrences of HTN, gastrointestinal upset, anxiety disorder, and heart failure (HF). Chronic distress can also damage or reduce the function of various body systems, including the immune system, increasing the risk of infection or autoimmune disorders. People who do not have supportive systems of family or friends are more prone to chronic stress, as a caring environment and positive relationships decrease levels of stress hormones.

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 3

Refer to Chapter 33 Sexuality for Unfolding Case Study Parts 1 and 2 to review the patient data. Mr. Morales, a 46-year-old male, is being seen in the clinic for an annual wellness examination. During the examination, Mr.

Morales reports that he has been having trouble achieving and maintaining erections during sex. He states, "My wife is getting frustrated and so am I. I'm not even that old yet. Why is this happening to me?"

Past Medical History	**Medical history:** Type 2 diabetes, hypertension, depression **Family history:** Both parents alive and well, mother has hypertension and depression **Social history:** Married twenty years, two teenage children. Wife recently diagnosed with breast cancer. **Current medications:** • Fluoxetine (Prozac) 20 mg PO daily • Metoprolol (Lopressor) 50 mg PO twice daily
Assessment	**1000:** **Neurological:** Alert and oriented ×4 **Respiratory:** Clear lung sounds, normal breathing pattern **Cardiovascular:** Tachycardia, bounding pulses, trace edema noted in bilateral lower extremities **Abdominal:** Bowel sounds present in all four quadrants, no pain or tenderness noted **Musculoskeletal:** Full range of motion in all joints, bilateral muscle strength of extremities equal **Integumentary:** Skin warm, dry, and intact
Flow Chart	**1030:** Blood pressure: 155/92 mm Hg Heart rate: 103 beats/min Respiratory rate: 20 breaths/min Temperature: 98°F (36.6°C) Oxygen saturation: 99 percent on room air Pain: No pain reported at this time
Nursing Notes	**1035:** Patient expresses concern about erectile dysfunction (ED). He reports frustration about being unable to participate fully in sexual intercourse with his wife. He reports his wife is also frustrated with the situation, especially given her new diagnosis of breast cancer. He states, "I don't want to start taking Viagra in my 40s. That's just embarrassing. Surely there is something else I can do. My wife thinks I don't want to have sex with her because she has cancer, which isn't even remotely true. My body is failing me." When asked about other potential contributing factors, patient reports experiencing a significant amount of stress at work lately, and worry about how he will afford his wife's cancer treatments.

1. Recognize cues: Based on the assessment findings and nursing notes, what cues are the most important for the nurse to recognize?
2. Analyze cues: What physiological effects might the patient be experiencing due to his recent reported stress?

Eustress

Positive stress, or **eustress**, is stress that initiates a positive response or feeling. Whether a person experiences eustress or distress typically depends on their perception of the stressor, which may itself reflect personality and attitude toward the stressor. Persons who are naturally optimistic tend to perceive stressful events positively, as opportunities for growth. In contrast, pessimists tend to assume stressful events will have negative outcomes, leading to distress (Conde Moreno & Ramalheira, 2022; Lindberg, 2019; Moore, 2019; Villines, 2024).

LINK TO LEARNING

This video describes eustress (https://openstax.org/r/77Eustress) or positive stress. As you watch it, think of examples of positive stressors you have encountered and how they made you feel.

The experience of eustress is essential for healthy development, as it supports the brain's ability to respond to events in beneficial ways. The source of eustress may be psychological or physiological, and results tend to be constructive, with associated feelings of accomplishment and excitement. For example, think of a student studying for an exam they are confident they will pass; an exam is a stressor, but the student's positive perception converts the stress into energy, excitement, and focus. These positive effects are episodic and short lived, without long-term, harmful effects, so eustress is associated with acuity. Figure 34.3 contrasts eustress and distress.

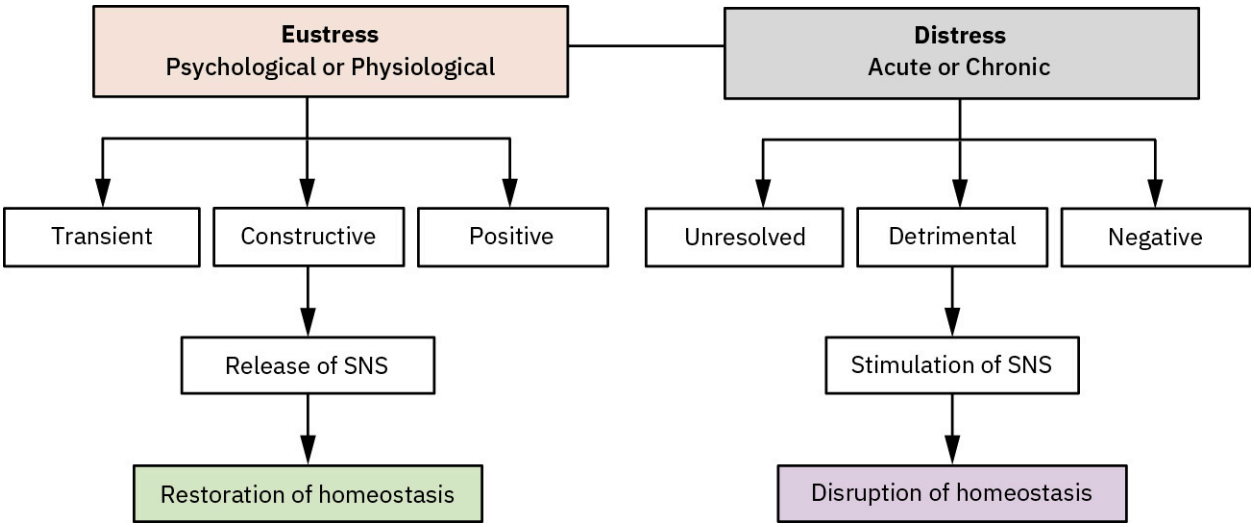

FIGURE 34.3 Eustress is stress that elicits a transient, positive feeling or response. Distress describes negative stress and can be either acute or chronic. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Concepts of Stress and Adaptation

An individual's ability to cope with stress allows for adaptive results. These may be effective, promoting health and wellness, or ineffective, causing unhealthy behaviors. Adaptation includes the body's own physiological changes following exposure to a stressor. These adaptive changes are necessary for survival and ultimately a return to homeostasis; however, individuals can also play a more active role in adaptation by learning and practicing stress management techniques and coping strategies.

Stressors

When a person is threatened or senses looming danger, that threat or danger is perceived consciously or subconsciously as a stressor. Stressors can be categorized by the extent to which they involve substantial changes in one's life: are they catastrophic events, frequent annoyances, or the various irritations and inconveniences that are omnipresent in daily life? Significant life changes are not necessarily negative; they can be joyful or represent the achievement of a goal. For example, a new job or promotion is typically a welcome change that comes with benefits such as increased income, but it also entails additional responsibilities and stress (Table 34.1). Stressors can be physical or psychological or both.

Type of Stressor	Examples
Significant life change	Marriage, divorce, new job, loss of job, move, birth or adoption of a child, injury/illness/surgery, death of a loved one or friend, change of school or political environment
Catastrophic event	Natural disaster (hurricane, tornado, blizzard, volcanic eruption, forest fire), act of war, life-threatening illness or injury, mental health crisis
Frequent annoyances	Heavy traffic, weather change, equipment malfunctions, changes to plans, forgetting lunch, running out of gas, experiencing a flat tire
Omnipresent irritations	Smog, bad roads or walking paths, distance to school or work

TABLE 34.1 Stressors

Physiological Stressors

Physiological stressors are physical stimuli that initiate the body's innate stress response. The following are some examples of physiological stressors:

- illness or injury
- malnutrition
- temperature extremes
- pain

Nursing care and anticipated treatment orders for physiological stressors focus on relieving symptoms and restoring homeostasis. Considering the listed items, restoration of homeostasis is attempted by treating the particular illness or injury, initiating parenteral feedings, avoiding or preparing for extreme temperatures, and implementing treatment for pain.

PATIENT CONVERSATIONS

Nursing Care for Physiological Stressors

Scenario: Mrs. Feldman has come to the emergency department because she's had "stomach flu" for two days, and she's feeling very weak. She's been vomiting several times a day, and can't even keep down sips of water or ginger ale. After the emergency physician has entered orders, the nurse returns to the patient's room with a medication and syringe.

Nurse: Mrs. Feldman, you've been throwing up so much, you're very dehydrated. Now, one of the problems is you can't have anything to drink right now, or you'll just keep throwing up.

Patient: I'm so miserable.

Nurse: I'll bet you are. The medication I brought for you should help you feel better soon. It's called ondansetron, and it is injected into your IV so you don't have to drink or swallow anything. It should help you stop throwing up.

Patient: Good. I've been vomiting so much, my throat burns.

Nurse: I can ask the doctor for some lozenges to soothe your throat. The vomit has acid in it, so it's no wonder your throat feels burned. Meanwhile, I've been worried about your blood pressure. You're so dry, your blood pressure has been low. Because you can't drink, you're getting what's called a "bolus" of IV fluid, to replace some of what's been lost. Once that finishes, I'll restart your other IV, with more fluids and also the electrolytes and some glucose (sugar) you need.

Patient: I can't wait to feel better. I even feel a bit dizzy when I sit up.

Nurse: That doesn't surprise me. When you're dehydrated like this, your blood pressure can drop too low when you

change positions: like sitting up after lying down or standing up after sitting or lying down. So, I want you to make changes like that very slowly. And when some of this fluid starts to work, you'll need to pee. I don't want you to go all the way to the bathroom, though, so I'll bring a commode and put it next to your bed. Don't get up by yourself. Here's your call light. You need to have your nursing assistant, Sean, or me here to help you to the commode.

Patient: Okay. I'll call when I feel I need to pee.

Nurse: I'll be back in about fifteen minutes. Your bolus IV should finish up about then, and I want to see if you're feeling a little better when that's done.

Psychosocial Stressors

Stressors can also have psychosocial origins. While psychosocial stressors are rooted in a psychological threat and subsequent imbalance, the same physiological results associated with the stress response occur as when the source is a physical stressor. The following are some examples of psychosocial stressors:

- grief
- job pressure/job loss
- addiction
- interpersonal strain or conflict
- mental illness
- ineffective coping

Consider this situation: a person is experiencing cravings for a particular addictive substance but is unable to acquire the substance and fulfill the need. Psychosocial stressors for this patient include mental health diagnoses, including ineffective coping and addiction. Because of the inability to access the desired substance of abuse, the patient experiences a withdrawal syndrome, which initiates a physiological stress response, such as tachycardia, HTN, and anxiety.

CLINICAL JUDGMENT MEASUREMENT MODEL

Prioritize a Hypothesis: Alcohol Withdrawal

A patient came to the day surgery for a laparoscopic cholecystectomy. The patient experienced more blood loss than anticipated and was admitted to the surgical floor to receive fluid bolus and blood transfusion. The patient normally drinks eight to ten beers or four to five vodka tonics each evening; however, because of preoperative nausea and abdominal pain, he had not consumed alcohol for two days prior to admission. Today is postoperative day two, and the patient tells the nurse he "feels a little nervous." His hands are shaky. The patient describes his pain as four on a zero to ten scale. The nurse reviews the chart and finds vital signs are as follows:

- temperature: 99.3°F (37.4°C)
- heart rate: 118 beats/min
- blood pressure: 196/124 mm Hg
- respiratory rate: 23 breaths/min
- oxygen saturation: 96 percent on room air

The nurse considers each vital sign and concludes that since the patient's last alcoholic beverage was almost four days ago, the low-grade fever, tachycardia, slight tachypnea, and hypertension are likely physiological indicators that he is withdrawing from alcohol. The patient's nervousness is a psychological indication of rising anxiety, also likely related to alcohol withdrawal. At this point, however, the nurse is most concerned about the patient's blood pressure.

Knowing that the patient's body is responding to the stress of a withdrawal syndrome, the nurse plans to call the healthcare provider to update on current physical and mental status. The nurse anticipates orders for IV hydralazine to bring the blood pressure down. Also, the nurse will ask about starting the alcohol withdrawal protocol, using the Clinical Institute Withdrawal Assessment for Alcohol (CIWA) scale for objective monitoring, and obtaining a prescription for chlordiazepoxide to help with the psychobiological factors of alcohol addiction

and withdrawal.

Because there are physiological signs and symptoms occurring because of substance use and withdrawal, they have to be addressed as part of the treatment plan, along with psychosocial therapies. Psychosocial treatment may include mental health and behavioral therapy to directly address appropriate diagnoses and improve coping skills, as well as medications to support psychosocial treatment and prevent and/or treat withdrawal syndrome.

Adaptation

Adaptation describes the body's response to stress. Some of these changes are positive and result in the development of effective coping mechanisms and resilience. However, sometimes the body adapts to stress in negative ways, leading to sustained stress responses and development of chronic disorders.

Because adaptation can be adaptive and effective or maladaptive and ineffective, the focus of nursing care is to help patients adapt to stress in positive ways that lead to healthy changes. Nurses play key roles in helping patients identify stress and stressors, minimize maladaptive behaviors, learn coping skills, and increase effective adaptation.

CLINICAL JUDGMENT MEASUREMENT MODEL

Generate Solutions: Alcohol Withdrawal

Continue to consider the patient withdrawing from alcohol.

What are the desired outcomes?

- Patient will report feeling less nervous.
- Patient's blood pressure will be maintained at less than 140/80.
- Patient's pain will continue to be adequately controlled with PO analgesics.

What interventions can achieve those outcomes?

- Chlordiazepoxide: 75 mg PO; to be increased per prescription order if needed, based on the CIWA protocol
- Hydralazine: 20 mg IV bolus
- Ibuprofen: 800 mg PO Q8 hours

Maintenance of Homeostasis

Homeostasis describes a steady, balanced, or uniform state in the body. This equilibrium is desirable, and the body tries to return to it when it is challenged and taken off-balance. Activation of the SNS by stress disrupts the steady state that is homeostasis. When nurses treat stressed patients, what they are mainly treating are symptoms of alterations to homeostasis, as well as the body's compensatory mechanisms as it attempts to resolve the perceived threats and return to a steady, stable state.

The process of the body making ongoing changes in response to stress is called **allostasis** (Guidi et al., 2021). These adaptive processes involve frequent physiological adjustments when a loss of equilibrium has occurred in order to reestablish and sustain normal function. Effective adaptations result in positive coping and outcomes representative of a return to homeostasis. While healthy function involves regular adjustments to the body's internal environment, recurrent stress leads to chronic effects of the stress response and maladaptive physical alterations from normal (Figure 34.4).

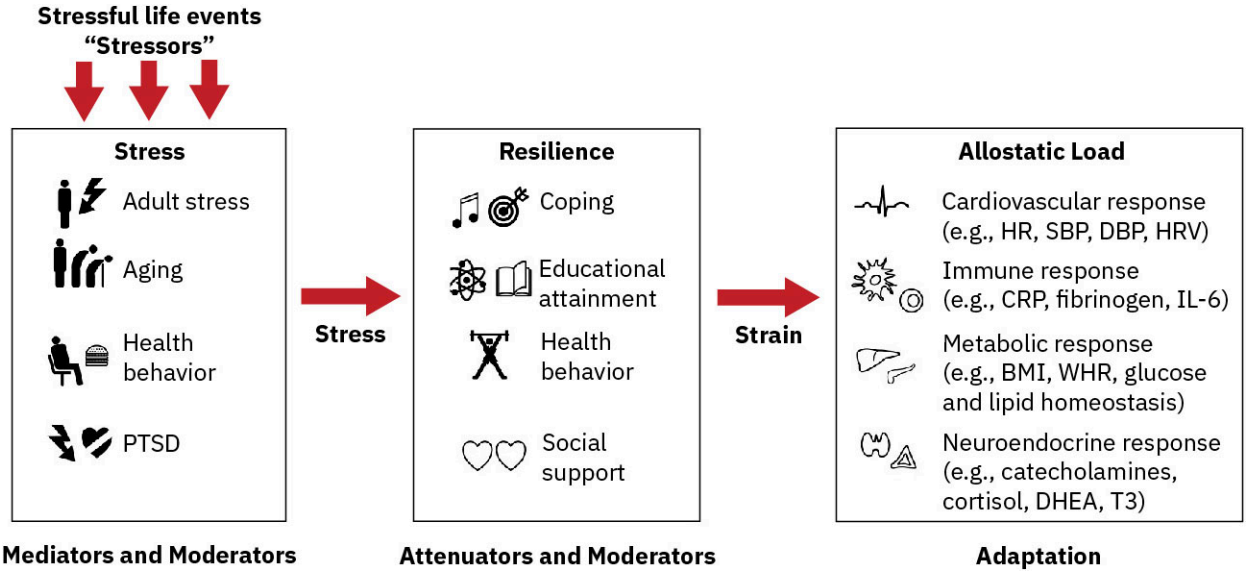

FIGURE 34.4 When stressful events build up, allostatic load occurs. (Abbreviations: BMI, body mass index; CRP, C-reactive protein; DBP, diastolic blood pressure; DHEA, dehydroepiandrosterone; HR, heart rate; HRV, heart rate variability; SBP, systolic blood pressure; WHR, waist-to-hip ratio.) (modification of "Allostatic load sketch" by "Jwdietrich2"/Wikimedia Commons, CC BY 4.0)

Physiological Homeostasis

Physiological homeostasis is a state of equilibrium in which the body's physical systems are in balance. When the body is not in a state of homeostasis, it initiates feedback mechanisms intended to return the body to equilibrium. The feedback can be negative or positive, depending on what factor is out of normal range and whether it is high or low. An example of negative feedback is hypotension. When the brain receives signals that blood pressure is too low, it initiates the stress response, releasing the hormone cortisol and the catecholamines epinephrine and norepinephrine. These cause vasoconstriction and tachycardia, thereby raising blood pressure and cardiac output. In addition, the release of the mineralocorticoid aldosterone causes the body to retain sodium and, therefore, water, improving the fluid volume deficit.

Another example of negative feedback is the opposite situation: hypertension. Under normal circumstances, elevated blood pressure causes responses such as vasodilation, to expand blood vessels, and increased urinary excretion, thereby decreasing blood pressure and returning the body to homeostasis.

LINK TO LEARNING

This video explains homeostasis and feedback mechanisms (https://openstax.org/r/77Homeostasis) in the body. While the previous examples about hypotension and hypertension both involve negative feedback, the video also illustrates positive feedback.

Local Adaptation Syndrome

To this point, this chapter has explained the stress response as a generalized reaction involving organs, neurotransmitters, hormones, and systemic results. This whole-body response to stress is known as the general adaptation syndrome (GAS). The stress response can also be isolated to a particular region, and when this is the case, it is called the local adaptation syndrome (LAS). The GAS is discussed in more depth in 34.4 Adaptation Theories and Models.

The generalized and localized syndromes respond similarly to stressors, although there are differences besides locality or extent of reaction. Essentially, the LAS is a smaller version of the GAS, in which the body attempts to minimize the negative effects of stress by isolating it. In either case, the ideal response is adaptive, with a return to homeostasis. In certain circumstances, the response may become so severe that it results in the systemic effects of the GAS. The LAS tends to be associated with reflex reactions and the inflammatory processes described in the following paragraphs.

Reflex Pain Response

Reflex responses are an example of the LAS in which the central nervous system reacts to pain. The reflex arc allows the central nervous system to bypass the longer, normal processes involved in coordination of movement by the neuromuscular system. While the conscious processes of muscle movement may not appear to take much time, the reflex response further minimizes reaction time, allowing for a nearly immediate, involuntary, and protective reaction (Figure 34.5).

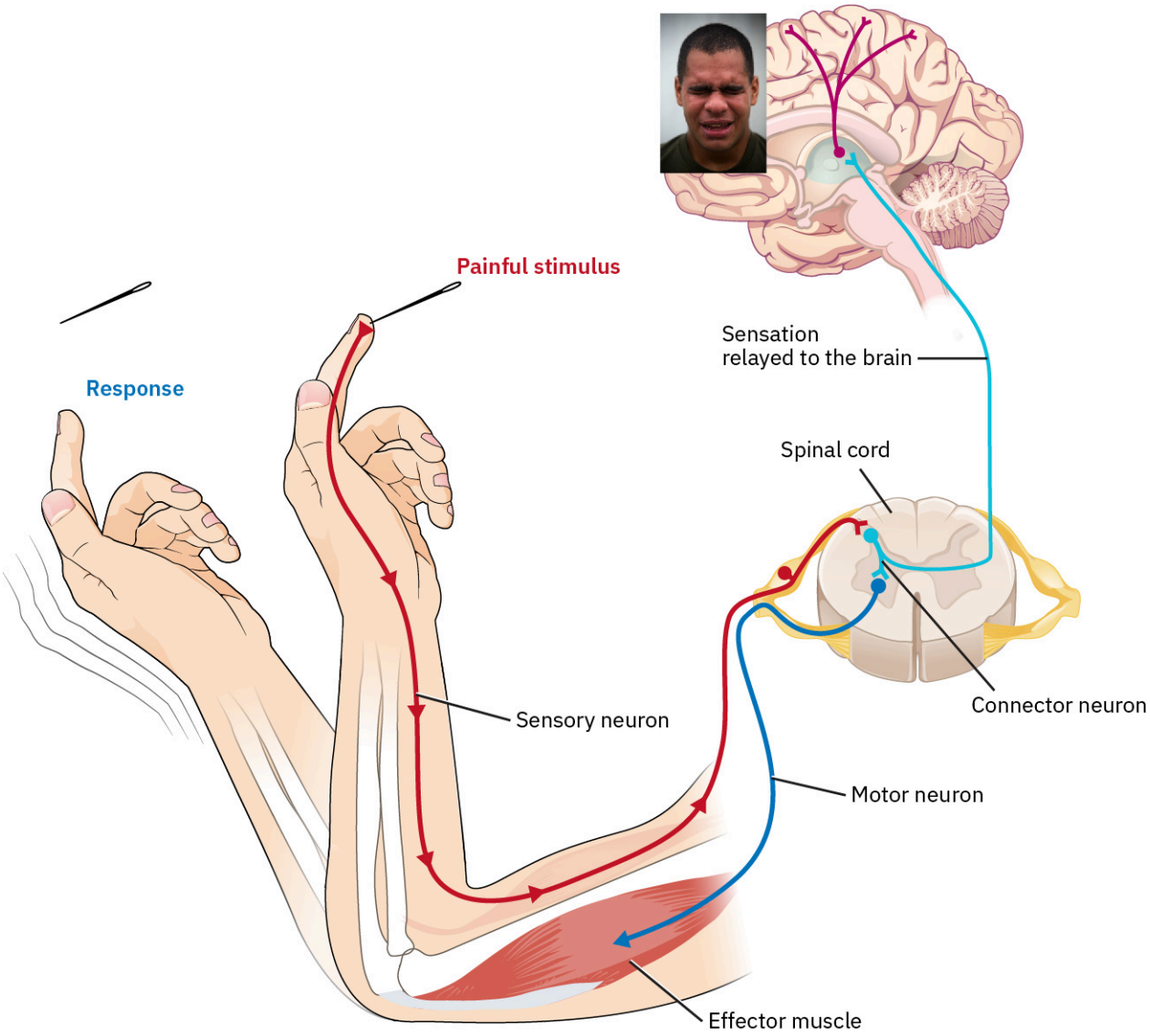

FIGURE 34.5 The reflex arc involves a painful stimulus (stressor), which causes a sensory response in a sensory nerve, which travels to the spinal cord, then through a connector neuron, and on to a motor nerve, which stimulates the effector muscle(s) to remove the body from the stressor. (photo: modification of "The pain is brutal for these Marines 150306-M-IN448-048" by Sgt. Matthew Callahan/Wikimedia Commons, Public Domain; illustration: attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Inflammatory Response

The LAS is closely associated with the inflammatory process. Stressors tend to cause inflammatory agents to be produced, and the stress responses (GAS and LAS) involve production of anti-inflammatory chemicals, including the powerful glucocorticoids. The five cardinal signs of inflammation (erythema, edema, warmth, pain, and loss of function) are integral in the protective and adaptive reactions that prevent further injury and aid return to homeostasis.

Examples of stressors that can cause an LAS reaction include injuries like lacerations, which involve bleeding and subsequent clotting. The injury, like a small razor cut, initiates the LAS (or if large, the GAS). Signs of inflammation often quickly include pain, erythema, sometimes some loss of function, and edema soon after. Internal responses

include vasoconstriction and the clotting process, both of which help minimize bleeding. Healing responses close the wound and form scar tissue. Vasoconstriction, clotting, and wound repair are restorative processes of the LAS. The GAS produces a larger inflammatory reaction. Such systemic responses are seen in disorders categorized by immune or autoimmune diagnoses.

Selye (1956/1976) describes the LAS reaction triggering the inflammatory process in response to invasion and infection by mycobacterium tuberculosis (TB): the inflammatory response as stimulated by the LAS creates a physical barrier around a collection of the bacteria, isolating and preventing their spread (latent TB). While this process relative to TB is not flawless, as it does not always trap and confine all the bacteria, the body's own response to the bacterial assault is remarkable.

Psychological Homeostasis

Homeostasis is also helpful in maintaining psychological well-being and avoiding stress. Whether the impetus for activation of the stress response is a physical or mental stressor, the resultant release of catecholamines, steroids, and other chemicals is the same. The stressor initiates the stress response, and if not relieved, development of adaptation-related disorders becomes a risk. The mechanisms for restoring homeostasis after psychological stressors initiate a stress response may be either psychological or physical. The following paragraphs discuss the relationship between the mind and body, anxiety, coping and defense mechanisms, and the fight-or-flight response, as ways of restoring homeostasis.

Mind-Body Interaction

The actions and interactions of the mind and the body are complex. It can also be challenging to describe where each begins and ends in relation to the other. The stress response is a perfect example of such a close relationship between the two body systems, as a stressor initially affecting either the mind or the body will result in the same cascade of physiological events. Dr. Jean Watson (2024) has been involved in the development of Caring Science in nursing, and in understanding the relationship between mind, body, and spirit. Dr. Watson connects these aspects of the person as a whole and relates the three components so closely as to connect them in written form, without spaces, as "mindbodyspirit."

When the stressor is psychological, there may be initial signs and symptoms of mental distress, such as anxiety (discussed further in the next section), even before the SNS response may also present with some of the same manifestations. Signs and symptoms of exposure to a psychological stressor may conversely appear as physical, in the form of anginal chest pain or gastrointestinal upset, for example. Effective adaptation may involve both the mind and body (and potentially spirit) through behavioral and cognitive stress management efforts, in conjunction with physiological therapies as indicated. An example of such coordinated efforts of restoring homeostatic balance is a patient who experiences a psychotic crisis episode, with symptoms reflecting a loss of connection from reality. Psychotic symptoms may include disordered thoughts and actions and hallucinations, as well as physical symptoms. Physical symptoms reflect the patient's experiences of psychosis, so if the patient is experiencing upsetting and anxiety-producing events, vital signs are apt to demonstrate stress.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care

Definition: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs (QSEN, 2022).

The PCC Competency (QSEN, 2022) Knowledge (K), Skills (S), and Attitudes (A) are exemplified through a patient scenario.

The patient is brought to the emergency department by ambulance after being found walking naked on a main shopping street at 0315. Vital signs:

- temperature: 96.5°F (35.7°C)
- heart rate: 124 beats/min
- blood pressure: 206/124 mm Hg

- respiration rate: 22 breaths/min
- oxygen saturation: 97 percent on room air

Labs: Positive for cocaine, methamphetamine, and tetrahydrocannabinol (THC). Complete Blood Count: normal. Comprehensive Metabolic Panel: pending.

Knowledge: "Demonstrate comprehensive understanding of the concepts of pain and suffering, including physiologic models of pain and comfort" (QSEN, 2022).

- Psychobiological effects of use of stimulant and depressant drugs
- Priority symptoms:
  - Malignant HTN
  - Hypothermia
  - Tachycardia

Skills: "Assess presence and extent of pain and suffering" and "Assess levels of physical and emotional comfort" (QSEN, 2022).

- Urgent focused physical and emotional assessment, followed by comprehensive assessment when stable.

Attitude: "Appreciate the role of the nurse in relief of all types and sources of pain or suffering" (QSEN, 2022).

- Restore psychological and physiological homeostasis
  - Hydralazine to lower blood pressure
  - Warm room and blankets to raise temperature
  - Case management for available resources
  - Psych consult for longer-term treatment
    - Inpatient versus outpatient substance use treatment
    - Appropriate mental health drug therapy

Anxiety

A certain level of occasional anxiety is considered normal and can be protective. Anxiety may also occur as a result of the stress response. Some symptoms of anxiety as a stress response include feelings of nervousness, restlessness, impending doom, hyperventilation, tachycardia, difficulty focusing, gastrointestinal upset, and insomnia.

Anxiety disorders are associated with intense manifestations of fear and anxiousness, or even extreme anxiety referred to as panic (Cleveland Clinic, 2020). Anxiety can therefore be its own mental health disorder and stressor, or a symptomatic result of another stressor and the stress response. While there is still some mystery to the etiology of anxiety disorders, there are some people who are more liable to be affected by it, and certain events can contribute to anxiety (Cleveland Clinic, 2020). Family history of anxiety disorder is also important as a potential contributor to occurrence of an anxiety disorder, as there is often a familial pattern to its diagnosis.

Certain medical diagnoses are associated with occurrence of anxiety. These medical problems include chronic obstructive pulmonary disease (COPD), heart disease and HTN, gastrointestinal symptoms, and chronic pain syndrome (Cherney, 2023). Patients who are experiencing a critical physical episode, such as myocardial infarction, often have a feeling of impending doom. Patients with COPD who are in the midst of a severe exacerbation of the disease are also usually very anxious, as air hunger is a frightening experience. These patients frequently do not have any personal or family history of anxiety. It is physiologically stress-induced, with the disease process as stressor.

LINK TO LEARNING

The Anxiety Network's suggestions for [statements to assist with various circumstances when anxiety is likely (https://openstax.org/r/77AnxietyStatment)](https://openstax.org/r/77AnxietyStatment) may help you with patients, and they may be personally helpful for you as well.

Coping

An adaptive mechanism for managing stress is known as **coping**, which can reflect effective adaptation or ineffective, maladaptive results. Coping encompasses adaptations in both the cognitive and behavioral realms that help people decrease negative emotions such as sadness, anger, or fear (Wilson, 2023). People begin to develop coping strategies from early exposures to stress and build on such techniques with subsequent stressful experiences. Because negative consequences of stress are often cumulative, they emerge after repeated, chronic experiences. Adaptation-related disease processes are typically exemplified by chronic illnesses such as HTN, DM, and COPD, although children can also develop problems related to maladaptive coping.

Early childhood is an optimal time for positive coping mechanisms to be identified, encouraged, and developed. However, there are many circumstances and many children for whom such an environment is not present. Adverse childhood experiences (ACEs) involve stress responses that begin in childhood and, for many affected without appropriate, effective interventions, potentially lead to a multitude of health problems.

LINK TO LEARNING

In this video, California's Surgeon General Dr. Nadine Burke Harris explains more about ACEs (https://openstax.org/r/77Nadine) and discusses their effects. Pay particular attention to the significance of these experiences, her recommendations for screening, and her goals for prevention.

During stressful situations, nurses can work with patients and their families to set goals as a coping mechanism. Patients may need help realizing that some behaviors are contrary to their effective adaptation, and they may benefit from counseling regarding changes from maladaptive actions toward positive coping strategies.

Wilson (2023) identified several mechanisms for positive coping, which include the following:

- sincerity
- openness
- optimism
- resilience
- establishing and using social support systems

There are many strategies recommended for developing positive coping skills. Of course, the choice of method(s) should be individualized. Coping, like stress, is not one-size-fits-all. Some strategies identified include the following (Peterson, 2021; Wilson, 2023):

- Participate in active relaxation.
- Regulate emotions.
- Rethink how stressors are approached.
- Create supportive interpersonal relationships.
- Reframe emotions through positive self-talk.
- Seek positive activities.
- Participate in religious/spiritual routines.

Certain behaviors are considered maladaptive, and nurses can assist patients in identifying them, as well as guiding them to change the negative coping strategies to techniques more likely to have positive outcomes. Patients' goals are rarely intentionally focused on deleterious behaviors; the ineffective strategies may have been developed years previously and subconsciously continued to develop over time. Following are some examples of maladaptive coping mechanisms:

- avoidance
- procrastination
- self-harm
- anorexia or bulimia nervosa
- risky behaviors
- self-deprecation

Defense Mechanisms

In the animal world, defense mechanisms are naturally occurring physical or behavioral traits that offer protection or safety from threats. Some translate to human defenses and reactions to stressors. An example is changing one's size—to make oneself appear larger or smaller than normal in order to present a more alarming presence or hide. Another example in some species is to live in a herd; for humans, being surrounded by a community or support group is a similar protective mechanism.

The purpose of defensive mechanisms as a means of coping is protection, in this case, from anxious feelings, self-esteem challenges, and events or experiences the person does not want to face or directly cope with (Cherry, 2022). Defense mechanisms may be effectively adaptive, although they are often related to maladaptation, or unhealthy behaviors. Higher-level adaptation, associated with positive coping, may be found with sublimation, suppression, humor, and altruism. Certain methods avoid maladaptive results and thereby assist in restoring homeostasis (Cherry, 2022). These include improved self-awareness, establishing and using effective coping strategies, and seeking mental health care if and when needed (Table 34.2).

Defense Mechanism	Description	Example
Acting out	Avoiding feelings by not acknowledging or sharing them but instead displaying the feelings through actions	Avoiding verbal confrontation by pounding fists on a table, or head on a wall
Altruism	Avoiding feelings by lack of direct acknowledgment; helping others as a way of satisfying internal needs	Volunteering at a preschool as a way to alleviate low self-esteem
Avoidance	Not facing a situation, person, or item by minimizing encounters	Refusing to return to a room where a negative experience occurred
Compensation	Overachievement of a strength to compensate for a weakness or failure	Excessive efforts in mathematics to compensate for poor understanding of grammar
Denial	Denying an event or item's existence	A person who has experienced abuse as a child denies that it happened
Displacement	Assigning emotions (e.g., anger) to a person or object other than the focus of the emotion	Kicking a pet after an argument with a spouse
Dissociation	Separating oneself from a negative or stressful experience	A person does not recall the events after being the victim of a sexual assault
Fantasy	Avoiding reality by retreating to a self-created inner, fictional reality	Creation and inhabitance of a self-world, away from specific stressor(s)
Humor	Identifying humorous facets of an experience	Making a joke during a crisis situation

TABLE 34.2 Defense Mechanisms

Defense Mechanism	Description	Example
Intellectualization	Avoiding emotional response for extreme intellectual pursuit and/or understanding	Performing excessive research into a particular diagnosis to avoid personal connection to it
Projection	Transferring certain qualities to another person	Feeling inadequate in caring for children and older adult parents, but criticizing one's sibling for not regularly visiting parents
Rationalization	Justifying behavior with a logical explanation	Being fired from a job and explaining that the "boss had it out for me all along"
Regression	Returning to behaviors of the past	A school-age child sucking their thumb
Repression	Subconsciously removing negative experience(s) from consciousness	Not recollecting a traumatic car accident

TABLE 34.2 **Defense Mechanisms**

Fight-or-Flight Response

When someone is said to have a rush of adrenaline, the image of bungee jumpers or skydivers usually comes to mind. But adrenaline, also known as epinephrine, is an important chemical in coordinating the body's fight-or-flight response. To respond to a threat—to fight or to run away—the sympathetic system causes divergent effects as many different effector organs are activated together for a common purpose. More oxygen needs to be inhaled and delivered to skeletal muscle. The respiratory, cardiovascular, and musculoskeletal systems are all activated together. Additionally, sweating keeps the excess heat that comes from muscle contraction from causing the body to overheat. The digestive system shuts down so that blood is not absorbing nutrients when it should be delivering oxygen to skeletal muscles.

How extreme the responses are differs based on the perceived significance and danger of the stressor. Someone whose resistance and resilience abilities are diminished by underdeveloped coping skills or constant stressful assaults may be overwhelmed by a stressor that a person with better coping skills would find a minor inconvenience. A stress response may also be consciously acknowledged or remain unrecognized. Patients who can recognize physical signs of stress are able to actively attempt behavior modifications to reduce stress and minimize negative results (Figure 34.6). Unrecognized stress and acute disruption of homeostasis can lead to physical and mental illness.

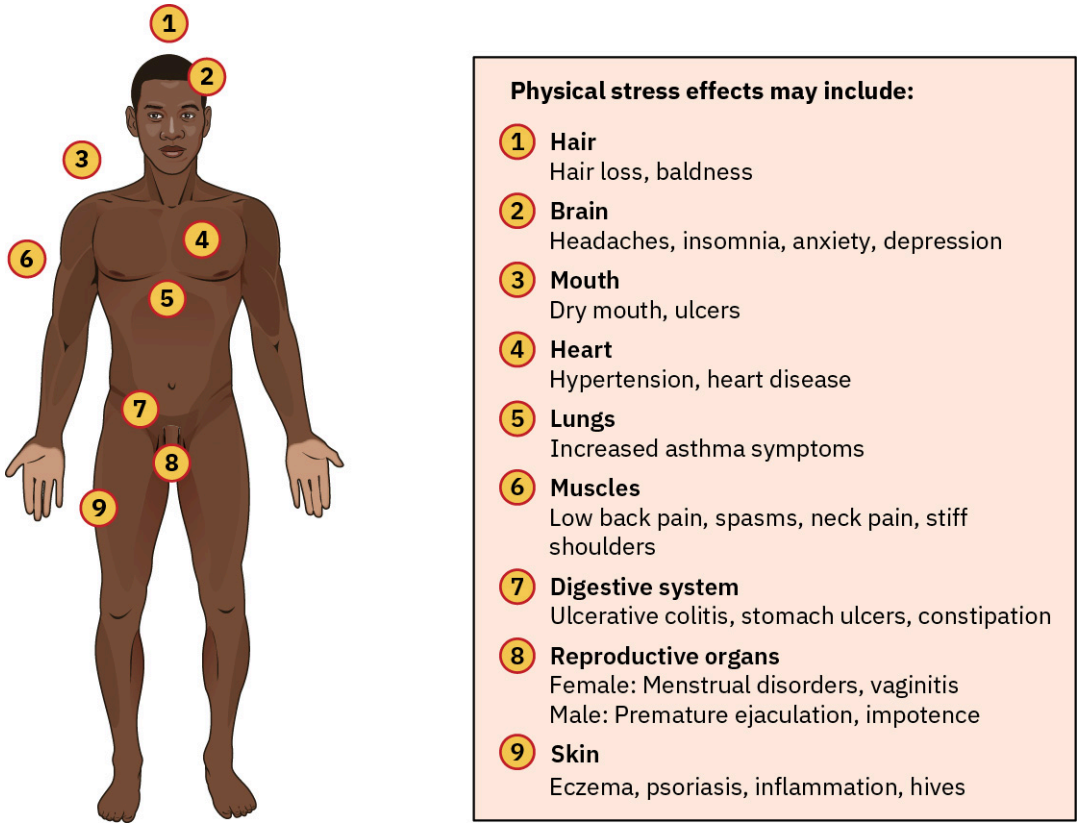

FIGURE 34.6 A person feeling stressed may experience any or all associated symptoms of stress. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

34.2 Effects of Stress on Health and Wellness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the effects of stress on basic human needs
- Explain effects of long-term stress
- Identify how unmanaged stress can evolve into a crisis

Stress can affect basic human needs related to physiology, safety and security, love and belonging, self-esteem, and the potential for self-actualization.. This list of basic human needs is recognizable as Maslow's hierarchy of needs.

Long-term, or chronic, stress can have significant effects on body functions, actions, and relationships, and has impacts on body systems, especially the immune system. Stress that is not managed effectively through resistance and adaptation is described as having depleted adaptive resources. When this happens, the stress response has progressed through the stages of the GAS to that of exhaustion. Such a loss of abilities to resist stress leads to crises. This unit explores the effects of stress on basic human needs and how unmanaged stress can be detrimental to function.

Effects of Stress on Basic Human Needs

Humans have certain needs they must meet to survive and ultimately thrive. The most common theory related to such physiological and psychological requirements is Maslow's hierarchy of needs. Maslow's hierarchy of needs is composed of five levels: physiological, safety and security, love and belonging, self-esteem, and self-actualization. These are frequently illustrated as a pyramid, with self-actualization as the pinnacle of human potential (Figure 4.5).

While there is a natural tendency to expect that lower-level needs are met prior to attempting or achieving those needs at the higher levels, Maslow determined this may not be the case (1943/2000). Instead, he described a "degree of relative satisfaction," whereby some needs are met in each category, with percentage of achievement (if it were measured) lessening as one climbs the pyramid. Maslow estimated that in the general population, more of

the most basic needs tend to be met, with fewer achieving most or all of the self-esteem or self-actualization concepts.

Stress is encountered throughout life, from fetal development through the process of death, with the stress response and adaptive capabilities existing long before the person is able to identify such experiences. Although usually transient, stress is essentially omnipresent as part of human growth and development, and in the motivations toward necessary and desired achievements, such as basic human needs.

Physiological Needs

When the effects of stress reach a life-threatening point, a patient becomes critically ill. The patient care setting is most often an intensive care unit (ICU) and includes multiple providers, such as pulmonologists and other specialist physicians, ICU nurses, therapists (e.g., respiratory, physical, speech, occupational), dietitians, and spiritual care providers. The goal of care is to return homeostasis by meeting basic physiological needs such as adequate neurological, cardiovascular, and pulmonary function. Maladaptive resistance apparent in these systems is often the root cause of chronic diseases evident in other organs.

For those patients who are not critically ill but show signs of chronic adaptation-induced disorders, treatment focuses on managing the condition(s). This includes primary care and specialist consultations aimed at symptom and disease-progression improvement or stabilization of the symptoms associated with chronic stress. Chronic stress manifests as a breakdown of systems affected by ANS (specifically sympathetic) overstimulation. When stress is chronic, there is a lack of relaxation, or physiological downtime. The harmful effects appear in both physical and psychological changes and behaviors.

Some examples of long-standing effects of increased cortisol, norepinephrine, and epinephrine include hypertension (HTN), tachycardia, headache, hyperglycemia, hyperlipidemia, gastrointestinal upset, and anorexia. Kidney damage may ensue from effects of chronic HTN and hyperglycemia; cardiovascular effects are also common, secondary to HTN, coronary artery disease, and subsequent issues such as myocardial infarction, HF, and peripheral vascular disease. These diagnoses, symptoms, and effects can be related to basic human physiological needs. Following are some examples:

- Nutrition: Diagnoses may change a person's recommended diet to restrictions of electrolytes and water; weight-loss (cardiovascular) or weight-gain (COPD) diets may be indicated.
- Weakness and fatigue: Organ dysfunctions may cause disability, as the patient becomes unable to tolerate activities. Job loss may ensue, leading to loss of shelter and financially based needs like clothing or food.
- Reproduction (or sexual pleasure, which appears more directly under love and belonging): Physical activity can be impaired to the point of sexual intercourse becoming uncomfortable, complicated, or impossible.

Safety and Security

Similar to physiological needs and consequential negative effects of stress on the ability to meet them, safety and security can be affected by health and wellness changes. Development or exacerbation of anxiety is a possible effect of an overactive SNS or as a result of other systemic pathophysiological changes. The impact of anxiety on a person's behaviors and subsequent ability to establish or maintain a safe and secure environment can be significant. The following are some examples:

- Safety and security: may be affected by physiological or psychological changes (e.g., job loss leading to loss of shelter)
- Resources: an inability to provide for other financially based resources (e.g., health insurance, transportation, positive activities)
- Anxiety: may affect perception of safety; person may make poor decisions

Love and Belonging

Anxiety and long-term results of chronic stress, such as weakness and fatigue, can hinder the physical ability to participate in meaningful, intimate relationships, broader social friendships, and activities. Isolation, loss of lower levels of need achievement, and difficulty establishing connections are possible consequences of negative stress effects.

Sexuality and performance of sexual intercourse can be impacted, as effects of diagnoses like HTN or diabetes take their toll. Meanwhile, increased physical needs increase the need for love and belonging even more. Patients may

not only need help with care, they may also need more emotional presence and support. They may lose their sense of belonging and of their normal roles, increasing feelings of inadequacy.

Self-Esteem

The aging process itself is associated with normal physiological changes, such as loss of muscle mass and related strength, slowing of neurological responses, and hearing and vision changes. Stress-induced chronic illness and some of the effects of particular disorders may involve weight gain (e.g., hyperlipidemia, DM, HF, weight loss [e.g., COPD, anorexia]) or disability. Any or all of these situations are likely to have negative effects on establishing or maintaining self-esteem. Additionally, physiological changes can affect patients' roles in their families or social circles as well as their ability to fulfill their obligations. Isolation is also a likely consequence of stress effects related to self-esteem.

Self-Actualization

Unmet needs on any of the other levels of human needs ultimately impact self-actualization. This is the pinnacle of the needs, the utmost in fulfillment, or fulfillment of potential (McLeod, 2024). As Maslow put it, "What a man *can* be, he *must* be" (1943/2000). It has been noted that few people achieve this level of human needs, as it requires advancing beyond the normal state of homeostasis to a unique level of creativity and elevated homeostasis through "peak experiences" (McLeod, 2024).

For many, chronic disease from stress adds further barriers to achieving a level of self-actualization. For example, when someone is experiencing a common combination of adaptation-related ailments, COPD, heart disease, and DM, it becomes difficult to seek out and focus on higher levels of homeostasis when the body is battling hard merely to achieve normal functions while struggling with oxygenation, perfusion, and hormonal regulation. That said, some people find that physical challenges and established disabilities provide the opportunity to develop themselves intellectually. Some who are limited physically manage to reach heights of fulfillment and achievement that doubtless place them in the realm of the self-actualized.

Effects of Long-Term Stress

Maladaptive physical and mental changes are not typically associated with occurrences of eustress or with short-term episodes of distress. The short and positive stress response and the adaptive resistance response can ultimately take a toll on the body, but such changes tend to be considered naturally age related over a lifetime. The types of stress that are normally connected to negative implications to health and wellness are those that are chronic.

As outlined by the GAS, the acute phase of the stress response mounts the various physiological reactions brought about by the release and effects of hormones and neurotransmitters in efforts to return the body to homeostasis. During the resistance phase, the body physiologically remains on the alert for the stressor. If coping mechanisms are effective, effective adaptation returns the system to a homeostatic state. Ineffective adaptation, however, leads to the third phase, that of exhaustion, whereby metabolic resources are ultimately depleted. Prolonged exposure to stressors continues this cycle and leads to chronic changes to various organs and systems and dysfunction of the immune system.

Negative Effects on the Body Systems

Long-standing, or chronic, stress has similarly long-standing impacts on the human body. Such effects are attributed to negative or ineffective adaptation during the resistance stage of the GAS. Such a loss of the ability to restore homeostasis allows for breakdown of body systems, including the immune system. This is reflective of the exhaustion phase of the GAS, as the resources associated with resistance and adaptation are diminished. Effects are seen in what Selye described as "diseases of adaptation" (1956/1976, p. xvii).

As Selye researched the chemicals released as a result of stressful experiences, he determined a difference between diseases caused by microbial invasion or toxins, for example, and those resulting from an adaptive response to stressors. Selye attributed several diseases or disorders to the reactions of chronic exposure to corticoids and pituitary hormones. His research dates back to the 1920s during his medical school education, and while there have been many developments in medicine since that time, he identified several disease processes as related to stress, which have been supported as such over the years. Some of the terms he used are no longer used to refer to the ailments, but the disorders are still recognized as related to chronic stress. Examples, using current

terminology, include the following:

- hypertension
- arteriosclerosis
- myocardial infarction
- cardiac hypertrophy
- edema
- nephritis, nephrosclerosis
- proteinuria
- inflammatory diseases/disorders

The following are some additional disorders and habits that have been recognized as frequently being related to stress:

- hyperlipidemia
- nutritional imbalances
- obesity
- alcohol and other substance misuse
- smoking
- COPD
- sedentary habits
- DM

In addition to cortisol, it is important to consider another corticosteroid, aldosterone, which is not a glucocorticoid but a mineralocorticoid. Release of aldosterone is not typically associated with the stress response in the way that cortisol and glucocorticoids are, but certain stressors may result in its secretion. An example is a patient who is hypovolemic (e.g., from blood loss or severe dehydration) and presents with hypotension.

In an effort to correct the low blood pressure and restore homeostasis, the stress response is initiated, including stimulation of the renin-angiotensin-aldosterone system. By a series of responses in various organs (liver, kidneys, lungs), the enzyme angiotensinogen interacts with renin to form angiotensin I, which is activated to produce angiotensin II by an enzyme reaction (angiotensin-converting enzyme) primarily in the lungs. Angiotensin II is a powerful vasoconstrictor, which prompts secretion of aldosterone from the adrenal cortex. Therefore, by two mechanisms, vasoconstriction and sodium retention with subsequent water retention, homeostasis is achieved, as seen by a normal blood pressure.

REAL RN STORIES

Physical Adaptations

Nurse: Margaret, MSN, RN
Clinical setting: Medical/surgical
Years in practice: 8
Facility location: Denver, Colorado

I was teaching a Med-Surg I clinical. As I approached one of the students for a check-in, I said, “Tell me about your patient this morning. Does she have COPD?” The student looked alarmed and replied, “How did you know? Yes!”

“Over the years, I’ve filled a photo album in my mind with the patients I’ve taken care of. There have been many at various stages of COPD, and sadly for your patient, she looks like them. You’re just starting your photo album, and she will probably be one of the pictures.” We proceeded to talk about the physical characteristics so often apparent in patients with COPD and the pathophysiology contributing to the changes. The student explained that her 72-year-old patient had been smoking since she was 15 years old, having quit five years ago. She smoked two packs a day most of that time. The student proudly stated, “She has a 104 pack-year history.”

The patient’s body had made modifications over the years, specifically decreased oxygen and increased carbon dioxide, as it adapted to stressors such as chronic acidosis and chronic hypoxemia. I noted the patient’s barrel chest

(a chest that has been chronically enlarged by hyperinflation, with a resultant round shape) and explained that was part of the adaptation process as her body became accustomed to an inability to fully exhale the carbon dioxide. The student had noticed the patient's use of accessory muscles of the neck and shoulders as she employed pursed-lip breathing to consciously inhale and exhale.

These physical assessment findings gave us the opportunity to discuss the long-term effects the patient was experiencing from a chronically activated stress response. What was the stressor, back when she was 15 years old, that started her exposure to tobacco smoke? Was it a desire to "fit in," leading to peer pressure and smoking, or was it a painful breakup from an early love, or struggles with math class, or frequent arguments at home? Was there even an emotional cause, or did she just want to try a cigarette and then enjoyed the results? From our vantage point, many years and many packs of cigarettes later, the original cause was not as important as the psychophysiological changes of all the years of stress, leading to cascading events and alterations to her body. We watched a frail woman, not overly aged at 72 years, but aged by years of the impacts of stress, sitting in a hospital bed, with the head at 60 degrees, while she spent critical calories simply breathing and could barely rally the energy necessary to pick at her breakfast tray or sip from a can of Ensure.

Negative Effects on Immunity

The stress response involves a process beginning with the body's recognition of the stressor, leading to the hypothalamus's release of CRH. Circulating CRH causes adrenocorticotropic hormone (ACTH) secretion from the anterior pituitary gland. ACTH stimulates the release of corticosteroids from the adrenal glands. The most notable is the glucocorticoid cortisol. Mineralocorticoids are also secreted from the adrenal glands; aldosterone is such a steroid. Its release is associated with fluid and electrolyte balance.

The stress effect on immunity involves both glucocorticoids and mineralocorticoids. Glucocorticoids have anti-inflammatory properties, and they reduce the immune response. There is a balancing act involved with patients who experience chronic maladaptive disorders, as the stress response has already been implicated in the release of cortisol, epinephrine, and norepinephrine. Patients' bodies eventually lose the ability to compensate, with resultant disorders like DM and HTN demonstrating the long-term exposure to glucocorticoids and catecholamines.

Meanwhile, the mineralocorticoid aldosterone has also been synthesized more often as a compensatory mechanism, with effects of sodium and water retention, and signs and symptoms of fluid volume excess (e.g., HTN) again, as well as development over years of cardiovascular disorders including myocardial infarction and HF. This entire cycle of chronic results of general adaptation finally has patients reach the exhaustion phase, when the lack of resources and the long-term damage finally catch up. Immune system function decreases, patients become more prone to infections, or autoimmune diseases may develop. At this stage of the GAS, exacerbations of diseases like HF or COPD can cause major setbacks, with lengthy hospitalizations, rehabilitation or skilled nursing needs, or mortality.

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 4

Refer to Unfolding Case Study #5: Part 3 for a review of the patient data.

Provider's Orders	**1115:** Full laboratory workup including BMP, CBC, lipid panel, and hemoglobin A_{1C}.
Lab Results	• BUN 21 mg/dL • Creatinine 1.1 mg/dL • Glucose 139 mg/dL • WBC 15,000/mm^3 • Total cholesterol 245 mg/dL • HDL cholesterol 50 mg/dL • LDL cholesterol 110 mg/dL

3. Prioritize hypotheses: What connections can you make between the patient's self-reported stress and his lab results?
4. Generate solutions: Based on the patient's lab results, what interventions do you anticipate being ordered by the provider?

Development of Poor Health Habits

Some people are surrounded by the necessary items to face and withstand stressful situations. Particularly optimistic individuals are able to frame stressful circumstances as eustress, and while the physiological response involves the same chemical reactions, the temporary nature combined with resilience minimizes the negative effects and allows for more positive adaptations. Unfortunately, many people are not in such affirmative environments, and they have developed coping mechanisms that are ultimately destructive. There are those who are born into settings filled with poor coping abilities. Long-standing decisions about nutritional choices, cooking habits, and the importance of exercise are examples of settings and behaviors that surround people and impact health.

When poor health is established, this in itself is a stressor, and it can place the patient firmly within the cycle of chronic stress, maladaptation, and ultimately exhaustion. Feeling ill can wear a person down; even an optimistic person can feel the burden and sadness ensuing from an illness or a chronic diagnosis. Such depression and not feeling well can be apparent through a lack of energy and motivation.

The following are some examples of ineffective coping mechanisms:

- overeating (food as a source of comfort)
- anorexia (not eating as a method of control)
- substance use disorders (alcohol, drugs use as means of escape)
- smoking (as a way of reducing stress)
- isolation (feeling too physically or mentally unwell to participate in social activities)

Unfortunately, these maladaptive coping methods perpetuate or worsen stressful circumstances and associated disorders; if not replaced by positive coping techniques and improvements in health and wellness, they may lead to detrimental effects within family units.

Negative Effects on the Family

Stress-related effects cause an assortment of challenges and problems for families. Physical and psychosocial effects impact not only the patient but families as well. The toll from maladaptive coping may mean family members have to do more for the patient in completion of activities of daily living and in supporting the patient with work or lack thereof. Often, people who have developed poor coping strategies are in an environment where others around them also do not employ positive coping methods. This leads to dysfunctional behaviors, such as enabling each other's actions and further reinforcing chronic stress and its negative effects.

Manifestations of negative family effects related to stress include addictive behaviors, frustration and anger, relationship strain, interpersonal violence, and mental health diagnoses. The earlier part of the chapter presented some of the effects of ACEs that result from the environment surrounding a child and described how they cause chronic activation of the stress response. Some examples are a child living with someone with a mental illness, substance misuse or addiction, having a parent or caregiver who is incarcerated, violence, or parents with marital strain or dysfunction. The contribution of ACEs to the development of physical and mental health problems is significant, especially when more than one ACE is experienced. Diagnoses that have been identified with ACEs include DM, liver and heart diseases, stroke, cancers, and autoimmune diseases.

Because of the multigenerational influence of ACEs, recommendations focus on prevention of the experiences. Preventive measures as outlined by the Centers for Disease Control and Prevention (CDC) are designed to minimize the behaviors and environments that contribute to ACEs, thereby reducing the negative impacts caused by chronic stress on families. The CDC (2022) strategies include the following:

- strengthening economic supports to families

- promoting social norms that protect against violence and adversity
- ensuring a strong start for children
- teaching skills
- connecting youth to caring adults and activities
- intervening to lessen immediate and long-term harms

LINK TO LEARNING

This video "We Can Prevent ACEs" describes one person's experience in breaking the cycle of ACEs (https://openstax.org/r/77BreakCycleACE) and ideas for ongoing prevention. Watch the video, and note the positive changes; consider how you, as a nurse, can incorporate your awareness of ACEs into practice.

Crisis

Stress and the responses of a person experiencing it can range from mild to severe reactions, up to and including a point of crisis. A **crisis** is described as an inability to cope with a stressful situation, or a state reflecting loss of psychological homeostasis. Adaptive coping mechanisms are established over time as children consciously or subconsciously learn ways to handle stressful situations. At various places in this chapter, the notions of positive and negative maladaptive strategies have been discussed. People who have not developed positive methods for managing stress are more apt to face crises, whereby they become overwhelmed as stressors spiral out of control and techniques established over time for stress adaptation no longer work.

In addition to stages of crisis, there are different types identified. The types of crises include maturational, situational, and adventitious. As nurses interact with patients, awareness of not only the person's physical state but also their psychosocial status is important. Exploring life events while talking to patients is important, as during such discussion, the nurse can identify occasions that may have been stressful for the patient or that might cause stress in the future. During such discussion, the nurse can also assess the patient's psychological and physical state, noting any of the characteristics or manifestations of the different levels of crisis and stress (Table 34.3), and plan care accordingly.

	Crisis Phase 1: Normal Stress and Anxiety	Crisis Phase 2: Rising Anxiety	Crisis Phase 3: Severe Stress and Anxiety	Crisis Phase 4: Crisis
Characteristics	Person is exposed to causal stressor (annoyance or inconvenience of life).	Regular coping mechanisms fail to relieve the stressor.	• Person uses novel internal and external resources to cope. • New techniques for coping are surveyed and employed to reduce stress.	Lack of resolution leads to critical point of maladaptive efforts to cope.
Manifestations	• Stress response initiates; anxiety begins. • Person is reasonable; emotions and behavior are under control.	• Anxiety increases. • Thinking is impaired; feelings of confusion and helplessness prevail. • Person may experience tachycardia, tachypnea, voice changes to higher pitch and fast speech. • Person may be restless and have nervous habits (e.g., tapping of feet or hands).	• If new techniques are successful, anxiety resolves, and homeostasis is reestablished. • If new techniques are unsuccessful, anxiety continues to increase; functions such as reasoning, communication, and behaviors are impaired. • Person may display a panting appearance to tachypnea. • Person may clench fists, pace, and sweat.	• Person may experience intolerable anxiety to the point of panic and unorganized, disturbed thought processes (possible psychotic thoughts). • There is urgency for relief of emotional discomfort. • There is a potential for harm.

TABLE 34.3 Crisis Phases

Maturational

The first crisis type is maturational crisis. The term **maturational** indicates these are the sorts of events that happen in a person's life, and while they are normal occurrences, for some people they can cause a crisis. This may be influenced by other events in the person's life that add to the level of stress, pushing the person to a stress point that reaches critical levels.

Patients who have developed positive adaptation and coping mechanisms tend to take such occasions in stride,

coping with the extra busyness of the affair skillfully and without (or with minimal) anxiety, the experience reflecting eustress. For those whose coping techniques are maladaptive, however, such events as a wedding or the birth or adoption of a child can climb to the point of anxiety and on to crisis levels as previously used coping systems are not effective enough to address the rising stress level.

Situational

While maturational crises are common occurrences that are considered normal life events, a situational crisis results from an incident that comes as a surprise. A situational crisis is exemplified by being fired or laid off from a job, moving for a new job, or a death in the family. Even those who can typically withstand added stress may find themselves overwhelmed by all the emotions and added stress involved in such a significant circumstance.

Some who have remarkable support systems and their own internal strength and coping can minimize even situational stress. Many, though, are impacted by situational stress, and without interventions assisting them with new coping mechanisms and means of adapting, the response carries them into higher levels of anxiety and disequilibrium. Patients in the higher stages of crisis are likely to require more interventions, additional support, and exploration of novel methods of adaptation in order to overcome the combined psychophysiological distress and restore homeostasis.

Adventitious

Crises such as those resulting from traumatic incidents like a flood, hurricane, terrorist attack, or violent crime are categorized as adventitious. These are crisis events that take a person (or group) by surprise. An adventitious crisis may affect one person or several, and perhaps even an entire community or region. This type of crisis may not advance through the levels as shown in Table 34.3 but may appear already as a high-level crisis and be accompanied by a complete failure of previously used coping techniques.

As with the other types of crises, there is a loss of psychophysiological homeostasis. In the case of an adventitious crisis, it may be more complicated to restore equilibrium, as the level of devastation may impact an individual patient in a more significant manner, for example, in the case of a victim of a violent crime. Or, as in the case of natural disasters like hurricanes and tornadoes, there may be such tremendous damage and so many people may be impacted that support systems and resources are depleted. See Table 34.4 for characteristics and examples of different categories of crises.

Category	Characteristics	Examples
Maturational/ developmental	• Stressors are part of normal life: growth and development. • Somewhat predictable; they commonly occur at certain developmental milestones. • Vulnerability to crisis is related to personal equilibrium/homeostasis.	• Birth • Puberty and adolescence • Marriage • Death
Situational	• Stressors are unexpected and sudden. • Stressors are unpredictable. • Equilibrium/homeostasis is threatened by the event.	• Traumatic accident • Illness (self or loved one) • Job loss • Financial hardship • Move • Divorce
Adventitious/ social	• Stressors are unanticipated and rare. • They may include multiple losses. • They may result from major disasters (natural or man-made). • There is a severe threat to equilibrium/ homeostasis.	• Natural disasters (e.g., flood, forest fire, earthquake, tsunami, tornado, hurricane) • Terrorism/attack • Riots/violent crime • War

TABLE 34.4 Crisis Categories

34.3 Factors Affecting Stress and Adaptation

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine sources of stress throughout the life span
- Recognize personal factors affecting stress and adaptation

Effects may be strictly physical, with signs of elevated cortisol and activation of the autonomic (particularly sympathetic) nervous system. As stress manifests, strain on the body results from release of cortisol and catecholamines and from the stimulation of the fight-or-flight response. Personal factors that affect stress and adaptation include the individual's adaptation abilities, health status, support system (or lack thereof), and socioeconomic status.

Sources of Stress

Exposure to stressors begins very early in development and lasts throughout the life span. An elevation of cortisol levels in infants was found to be related to factors such as maternal anxiety, history of depression, and the mother's attitude and attachment to the baby (Hernández-Martinez et al., 2019). Adaptations are a part of normal stress exposures, and such mechanisms are experienced throughout all stages of growth and development. Adaptation and coping techniques can be positive and have positive, perhaps even lifesaving, results, or they can be maladaptive, with negative results. Such negative impacts can become devastating, especially if healthier skills are not learned and used, leading to maladaptive consequences becoming chronic or lethal. In the following paragraphs, developmental and situational sources of stress are considered.

Developmental Stress

There are certain developmental milestones anticipated in the normal human life cycle. Such events tend to be associated with stress, whether physiological, psychological, or both. The first exposures to stress appear during fetal development, with the fetus exposed to stressors of the uterine environment and to maternal emotional

influences. Changes in levels of infant cortisol relate to prenatal exposure to factors, such as overall maternal emotional status with specific mention of the feelings toward the pregnancy, and factors after delivery, such as the maternal-infant bond (Hernández-Martinez et al., 2019).

Fetal exposure to stress, anxiety, and depression results in low levels of cortisol, while parental neglect, abuse, bonding disorders, mental health disorders in parent(s), and low socioeconomic status causes changes in cortisol levels to either higher or lower than normal (Hernández-Martinez et al., 2019). The relevance of these results is that psychopathological processes can be related to alterations from normal levels of cortisol.

Young children face other developmental milestones, with tremendous growth within the first year. During the first few years, children learn to sit up, eat, walk, talk, discover likes and dislikes, assert themselves, and interact with others. These are activities and events that involve stress. Frequently, this is the normal experience of eustress, with prompt return to normal hormones and positive adaptations.

As children start school, and their social circle broadens, more such encounters and challenges are likely, as well as exposure to distressful circumstances. Again, however, if their environment is supportive, the child is likely to establish positive coping adaptations. Similar to the fetus or neonate, though, if the surroundings are negative or even abusive, maladaptive techniques for coping are apt to be developed. Maladaptive physical results from adversity, stress, or trauma in early childhood have also been explored for their contributions as ACEs (Smith & Pollack, 2020). Because infants and young children are in stages of substantial brain development, they are particularly affected by prolonged exposure to stress hormones. The effects of exposures to ACEs can result in remodeling of the brain, with a detrimental lifelong impact on learning and behaviors.

Puberty and adolescence are later developmental milestones, during which inherent stressors such as major growth spurts are common, with accompanying hormonal changes. During these stages, social development continues and expands, with more social events, such as birthday parties, school dances, sporting events, dating, and intimate friendships, each with potential for exposure to eustress and distress and for learning to develop positive coping skills. Reactions to stress tend to be more acute and prevalent in early phases of development, with most exposure to stressors and heightened reactions occurring prior to age 30 years. In young adulthood, people noted fewer stress reactions, and continued passage of time demonstrated a stabilization of stress (Almeida et al., 2023).

Early adulthood tends to involve new experiences, including advancing education through training, college, or university, all of which have inherent stress, as decisions are made and new social groups and independence are established. This is frequently also a time of intimacy and perhaps marriage and parenthood, further developmental stressors.

For some, middle and later adulthood is rather a period of status quo and stability or homeostasis, but with human experiences, stress is apparent even during normal days. So, whether adults are simply facing the challenge of slow traffic during a commute or a minor argument with a child, there are developmental and situational stressors with which to cope. Older adults often trade work stress for changes relative to health, wellness, attitudes, and advancing age. Losing physical strength, losing abilities, and ultimately death, are all likely stressors for older adults, and share some common threads with situational stress. However, reactivity to stress tends to have plateaued by older adulthood (Almeida et al., 2023).

Situational Stress

Throughout a life span, there are countless circumstances and events that cause the stress response. Situational examples include a traumatic injury or accident, illness, losing a job and related financial burden, a divorce, or moving to a new area and home. Like all stressors, situational events begin the cascade of physiological responses that are the stress response, and the person adapts to the stress with positive or negative coping mechanisms.

As with developmental stress, responses to the situational stressor may range from very mild, with quick and positive resolution, to severe, with negative coping techniques leading to crisis. Unlike developmental stress, situations are typically not predictable. Where a person lands on such a continuum of responses (from very mild to very severe) is dependent on several factors. Such factors include internal skills, such as their own adaptation abilities, and their level of health and wellness. Also, availability of support and socioeconomic status influence abilities to cope. Discussion of these factors follows.

Personal Factors Affecting Stress and Adaptation

From intrauterine development to birth, and throughout the life span, people encounter stressors, to which their bodies and minds respond, consciously and subconsciously. Some of the reactions to stress are purely physiological, like the innate actions of the SNS, including the fight-or-flight response. As a side effect of stress hormones, people also experience symptoms like anxiety. Some of the adaptive responses to anxiety may be subconscious too, but some are learned.

Unfortunately, some coping skills develop in maladaptive or negative ways. While the adaptations may help in the moment, maladaptive coping strategies lead to disruption of homeostasis in the long term, including psychopathological changes. The ability of a person to adapt depends to some extent on previous adaptations, dating back to fetal development. Subsequent exposures to stress over time contribute to the development of coping strategies. Depending on physical and environmental influences, the mechanisms for coping may be effective or ineffective and maladaptive. Effective coping skills contribute to short stressful episodes, often representative of eustress. Over time, and with repeated exposures, ineffective methods of coping result in chronic stress and related negative health impacts. Whether or not negative methods can be modified to improve results and minimize harmful psychophysiological outcomes depends on several factors. The upcoming paragraphs examine the ability to adapt, the influence of the current state of health, the impact of support systems, and the impact of socioeconomic status.

LINK TO LEARNING

This video incorporates concepts from each of the upcoming topics, with its culmination in the final section. As you read about the factors affecting stress (https://openstax.org/r/77StressAdapt) and adaptation, think about these two young men, and how their different socioeconomic backgrounds affected stress and subsequently other aspects of their lives.

Ability to Adapt

The ability of a person to adapt to stress depends on multiple factors. During fetal development, if the fetus is exposed to elevated levels of anxiety, worry about the birth, or negative feelings about the pregnancy, levels of cortisol and subsequent brain development can be undesirably affected (Hernández-Martinez et al. 2019; Smith & Pollack, 2020). Neonates and young children exposed to these stressful situations, as well as additional factors including neglect, maltreatment or abuse, financial woes, and parental mental illness, are at risk for abnormal cortisol levels and related psychopathology in the future.

Considering the negative effects of ACEs, an environment that is positive and supportive, with well-adjusted family and others who have adapted to stress themselves in affirmative ways, using constructive coping mechanisms, tends to foster development of similarly functional coping skills. Even simply removing the chronic stress response associated with ACEs can reduce development of maladaptive stress and coping responses and decrease chronic physical and psychological ailments occurring over time.

While many coping mechanisms, adaptive or maladaptive, are established in early life, they are used, modified, or reinforced throughout a lifetime. Some people are more adaptable, more able to “go with the flow” without feeling stressed and/or anxious, while others are negatively affected and feel heightened levels of anxiety with minor inconveniences. An ability to recognize and control emotions, especially those in response to stress, can also prove helpful. An attitude of gratitude and enjoyment improves stress (Wilson, 2023). Statements to reassure oneself can improve coping; such a statement might be, “This is a challenge, but I have overcome such challenges before and can do it again.” In the longer term, positive self-talk involving writing positive statements and practicing them to improve self-esteem and counter negative thoughts can foster coping (Wilson, 2023). When a stressful, negative situation presents, one repeats the positive statement(s).

Improved self-awareness is a key factor in establishing positive coping techniques and reducing stress-related threats to homeostasis (Cherry, 2022). The following are some methods for enhancing self-awareness:

- *Psychotherapy* helps identify defense mechanisms and determine improved adaptive strategies.

- *Relaxation*, meditation, deep breathing, mindfulness, physical activity, and setting goals, helps reduce anxiety and improves focus on positive actions.
- *Setting healthy boundaries* fosters positive relationships and commitments.
- *Reflection/journaling* helps reduce anxiety and enhances focus.

Current Health State

The relationships of stress on health and of health on stress are intertwined or may be considered cyclical. This is because negative effects of stress, especially when persistent, accumulate over time and are identified as diseases and disorders. Diagnoses of health problems contribute to illness and therefore are themselves stressors. Stress impacts physiological changes through the actions of the SNS and the fight-or-flight response, resulting in release of cortisol and catecholamines. Immune responses, including inflammation and the potential for autoimmune implications, are also promoted by the renin-angiotensin-aldosterone system. Examples of diagnoses attributed to one or both of these stress pathways include HTN, HF, COPD, and DM.

Psychiatric disorders can also be affected by stress responses, and these may include depression, anxiety, bipolar disorder, and post-traumatic stress disorder (PTSD). These examples all decrease the ability to manage stressful circumstances, and measures used for coping may also be maladaptive, leading to worsening the situation rather than improving it. Additionally, PTSD symptoms may trigger the stress response and worsen anxiety; bipolar disorder, if not managed, results in volatile moods. Such ineffective adaptations easily swirl into the cycle of increasing stress and subsequent anxiety, with potential for crisis situations.

Support System

A supportive environment and being surrounded by a community of support should not be underestimated in regard to positive coping strategies and dealing with stressors. Children are less likely to be adversely affected by ACEs if they have support and help to counter the results of negative experiences. While an entirely optimistic environment of course offers the most protection from ACEs, at least if there are some ways for the effects to be minimized and alternatives offered, outcomes can be improved.

Beyond the early developmental years, support systems remain very important positive means of coping with stressful situations and avoiding long-term negative effects. Talking to a friend or family member may also help provide support, calm anxious emotions, and avert crises. Assistance may also come from nursing and counseling or therapy sessions, offering simple support or professional guidance to recognize and manage stressors.

It is sometimes helpful to have another perspective, especially if overwhelmed by a particularly stressful circumstance. Someone from outside the experience may be able to identify a less gloomy perspective and find something positive or funny in it; humor can be a good stress reliever (Wilson, 2023). Informal group support may come in the form of friends, or people may seek formal support groups based on a common interest or need, like Alcoholics Anonymous or a group of patients recovering from cancer. Such alliances of people can help a stressed individual feel validated and emotionally strengthened. Religious or spiritual communities provide support, encouragement, and purpose for many, with customs and prayers proving to assist with positive adaptive skills.

Socioeconomic Status

Socioeconomic status (SES) is societal standing based on factors such as occupation, education, and income. Other contributors to SES include availability of health care (ability to pay, e.g., insurance, group contributions, and access to providers), safe environments, and access to healthful activities and choices (e.g., nutritious foods, exercise, leisure activities). Subjective concepts, such as how a particular role is perceived (social class and/or status based on a position), are also part of SES. Sometimes, opportunities are based on perceptions of qualifications and abilities of those in a particular SES (American Psychological Association, 2024). Such opportunities can include the type of job a person is qualified for, the availability of employment, education and training, and pay.

The SES can be attributed to various psychopathologies (American Psychological Association, 2024). Previous topics within this chapter have alluded to factors that can be correlated to SES and their relationship to stress and adaptation. Examples have included stressors beginning with prenatal development, through early childhood (ACEs), and throughout the milestones and challenges of a life span. The SES, health and wellness, and the relationship to stress and adaptation may be best described as social determinants of health (SDOH), which group concepts mentioned earlier under the following categories/determinants (Healthy People 2030, n.d.):

- economic stability
- neighborhood and built environment
- education access and quality
- health care access and quality
- social and community context

LINK TO LEARNING

Visit the Healthy People 2030 Social Determinants of Health (https://openstax.org/r/77HealthyPeople) at the Office of Disease Prevention and Health Promotion website. Scroll down and explore the clickable buttons at the bottom. Consider ways you might use the research, the information about older adults, and the infographics in your interactions with patients.

Stressors can be found within all domains of the SDOH, including diagnoses impacting mental or physical health, adaptations and subsequent behaviors, financial worries, access to and preparation of nutritious food, transportation needs and access, and availability of affordable healthcare providers. Interactions between nurses and patients, including a thorough interview to identify applicable SDOH and any other influences from SES, can help identify stressors affecting individuals. Such assessment and care planning can assist with stress reduction, as well as establishing and fostering positive coping methods for people within their socioeconomic means.

PATIENT CONVERSATIONS

Help When There Is No Extra Money

Scenario: Mr. Alvarado is a 48-year-old married father of six children and the sole provider for the family. Mr. Alvarado comes to the free clinic and tells Reynaldo, the nurse, "I'm afraid my high blood pressure is back." Reynaldo assesses Mr. Alvarado, and his blood pressure is 156/98. His pulse is 104, and Reynaldo notices some pedal edema.

Nurse: Mr. Alvarado, your blood pressure is indeed high today, it's 156/98. Please tell me how you've been taking your medication.

Patient: [looks down and wrings his hands] Oh, Reynaldo, I'm so embarrassed. You know I was working at the meat packing plant. I lost that job four months ago. I haven't been able to refill my blood pressure prescription because now I don't have health insurance or money for extras like that.

Scenario follow-up: Mr. Alvarado was seen by the nurse practitioner. When he comes back to Reynaldo to check out, he has two prescriptions. One is for his blood pressure medicine, and the other is a food prescription.

Nurse: Mr. Alvarado, I see you have a new prescription for your blood pressure medicine. There are some pharmacies for you where you can get this blood pressure medicine at no cost.

Patient: I had no idea! There are pharmacies that help like that? This is good news, for sure!

Nurse: Since you haven't taken this medicine in three months, let's go review how you take it, and other things about it, okay?

Patient: Good idea. I've gotten used to not being on any medicines.

Scenario follow-up: Reynaldo explains the drug prescribed: how and when to take it, side and adverse effects, and reasons to call the clinic or go to urgent care, or the emergency department.

Nurse: The prescription is for three months. Please check your blood pressure at least twice a week—you can do that at the grocery store or pharmacy, or you can come here. Keep a diary of your measurements. Here is a little notebook for that. We want to see you in one month to recheck your blood pressure and review your diary of blood pressure entries.

Patient: Twice a week I check my pressure, and write it in this notebook?

Nurse: Exactly. And bring it with you when you come back in a month.

Patient: Okay.

Nurse: Now, let's talk about the food prescription program. Have you heard of it before?

Patient: No. I thought it was a joke when the nurse practitioner gave me a prescription and said it's for food!

Nurse: It's for real. Some grocery stores work with this program, and they will accept the prescription instead of requiring you to pay.

Patient: This will help so much! My whole family.

Nurse: It should. Let me also give you a list for other resources that might help your family. You can apply for Medicaid and the Supplemental Nutrition Assistance Program, which will also help you with groceries. And here is a list of dentists and eye doctors who charge less than many providers.

Patient: I have so much information, and so much help! I really didn't have any idea. My wife is going to be so happy too. Thank you!

34.4 Adaptation Theories and Models

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify different theories associated with stress and adaptation
- Analyze models of stress and adaptation to maintain homeostasis
- Describe adaptation techniques to maintain homeostasis

Stress is a necessity of life for humans, an integral part of growth and development, and a key to survival. Whether threats come in the traditional form of a bear to be fought or fled from, as an invisible invader that causes sepsis, or malignant thoughts and worries, the physiological responses to stress are the same. Stressors may even have positive results, like providing a nurse with the critical edge of vigilance while caring for a particularly acutely ill patient, or a public speaker's ability to impress an audience with charisma and fascination.

Some theories and models of stress and adaptation, as well as methods of adaptation, have implications for preparation of nurses for practice, as stress, adaptation, and homeostasis have major effects on health, wellness, illness, and equilibrium. A basic knowledge of homeostasis and the stress responses is important for nurses in all aspects and specialties of patient care.

Theories Associated with Stress and Adaptation

Identification of stress as an issue facing all humans has been associated with Selye, and his stress-related research began in the early part of the twentieth century. Since that time, others have also investigated the stress phenomena, with additional data adding to that introduced by Selye. Evidence continues to be added as more research is conducted. In the upcoming section, three theories associated with stress and adaptation are explored: stress-response theory, GAS, and allostasis and **allostatic load** theories.

Stress-Response Theory

The **stress-response theory** reflects the identification of the body's nonspecific reaction to a need (threat or stressor) (Selye, 1956/1976). Selye's description of the approach to illness during his medical education was that it was diagnosis based. Each patient was approached and given a particular diagnosis, and treatment was suggested accordingly. As an early medical student, he made an association that although the patients had different infections, there were similarities. Ultimately, he determined the patients' physiological responses did share commonalities, and he identified this as the stress response (Selye, 1956/1976).

The stress-response theory involves the chemical (hormonal) actions and reactions upon recognition of a stressor by the limbic system. This reaction continues to the hypothalamus, which initiates the release of CRH, resulting in secretion of adrenocorticotrophic hormone (ACTH) from the anterior pituitary gland. The ACTH causes the adrenal

glands to release corticosteroids, most notably cortisol, and to activate the ANS, specifically the SNS. This causes release of fight-or-flight catecholamines: norepinephrine and epinephrine. Under normal circumstances, when the threat has been resolved, the effects of SNS stimulation are opposed by its counterpart, the parasympathetic nervous system (PSNS), and its rest-and-digest actions.

Selye's (1956/1976) research did not stop with merely identifying stress and its chemical actions and reactions. He continued to examine stress from various angles and with different experiments, through which he further specified the stress response as involving phases he branded as the GAS, which is discussed in the following paragraphs.

General Adaptation Syndrome

The **general adaptation syndrome (GAS)** involves the concept that stress causes a three-stage syndrome of events resulting in either adaptation or exhaustion (potentially death) (Figure 34.7). The first stage is that of alarm, at which time the SNS is triggered. The activation of the SNS is likely apparent in signs of bronchodilation, tachycardia, tachypnea, elevated blood pressure and glucose, and pupillary dilation, as the body is prepared for facing the stressor. Such confrontation may involve physical or mental confrontation of the stressor, or a combination of both.

The second stage of the GAS is that of resistance. It is during this phase that effective adaptation allows the threat from the stressor to dissipate, and activation of the PSNS opposes the stimulating effects of the SNS. The chemicals released during the alarm phase and the SNS fade, and homeostasis is restored. If, however, ineffective coping by either conscious or subconscious means is apparent, the resistance stage can be extended, and maladaptive results become apparent. These maladaptive results may become apparent in physiological or psychophysiological behaviors and symptoms and in subsequent chronic diagnoses and disorders.

Unresolved adaptations to stress prevent a return to homeostasis and continuation to the third stage of the GAS: exhaustion. At this point, the hormones released during the alarm phase and their reactions have dwindled, and the organism does not have the resources to continue resisting the stressor. This stage can sometimes be prolonged by medical interventions, as healthcare providers order and nurses administer exogenous catecholamines and corticosteroids to critically ill patients. Patients whose compensation ability has been drained may be supported by intravenous medications, intubation, and ventilation, until such time as their own adaptive abilities are revived or reach a point of depletion that is irrecoverable.

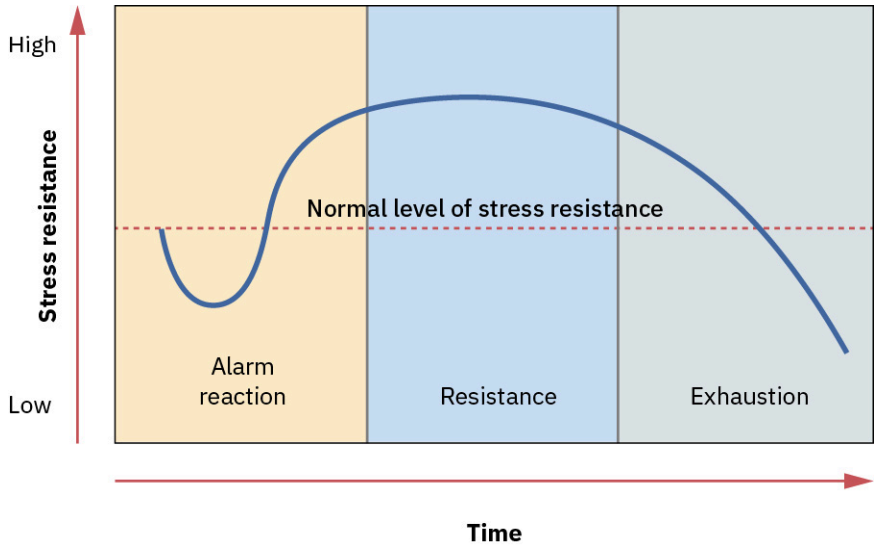

FIGURE 34.7 Selye's general adaptation syndrome theory consists of three phases with an associated time factor. modification of work from Psychology 2e. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Allostasis and Allostatic Load Theories

Allostasis is a concept related to homeostasis (Figure 34.8). The two are considered as nearly opposites in achieving and maintaining equilibrium. Homeostasis is the balance represented by normal vital signs, laboratory findings, and mental state. Stressors lead to instability, and the body naturally attempts to return to and maintain the state of homeostasis. The body's responses to stressors (e.g., bronchodilation, tachypnea, tachycardia, hyperglycemia) are necessary and life supporting, but the increased effect of these responses over time can be detrimental (Cherry,

2020; Guidi et al., 2021; Igboanugo & Mielke, 2023). The short-term response, with prompt return to normalcy after a challenge, is associated with homeostasis. Allostasis has been described as the ongoing changes within the body in response to stress. The greater the challenge, the more variability there is in the response. As previously established, allostatic load is the response to the collective capacity of events and related chronic stress.

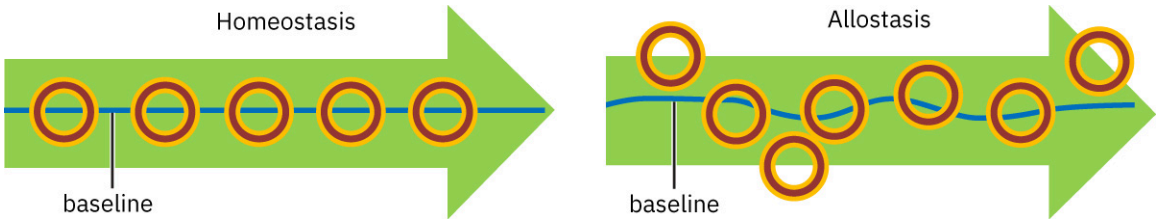

FIGURE 34.8 The diagram shows baseline as the solid blue line; the orange lines indicate the dynamic nature of equilibrium in (1) homeostasis and (2) allostasis. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Allostatic overload describes the situation when the threat or stress is more than the coping ability of an individual (Guidi et al., 20201; Igboanugo & Mielke, 2023). This may be seen as similar to a lack of effective coping during the resistance stage of the GAS, with an ultimate transition to the exhaustion phase if psychophysiological interventions are not taken or are unsuccessful. The following are examples of potential diagnoses ensuing from allostatic load (and overload):

- DM
- cancer
- HTN
- arteriosclerosis
- psychiatric/mental health disorders

Models of Stress and Adaptation

While there are many models of stress and adaptation, two popular models of stress and adaptation are discussed here: Sister Callista Roy's adaptation model (RAM) and the psychophysiological stress model (PSM). Roy's (1984) original work is comprehensive, with a design that can be used as a foundation for nursing education programs and professional nursing practice. The PSM incorporates the complete processes involved in stress.

Roy's Adaptation Model

Roy's adaptation model (RAM) is a holistic approach to nursing as a combination of art and science, structured as a science, model, and practice discipline containing various elements. The model and elements note the inclusion of (1) the goal of nursing, (2) health, (3) environment, and (4) nursing activities (Gonzalo, 2024). The RAM provides a comprehensive foundation for all aspects of nursing and patient interactions, including psychophysiological concepts throughout the life span (Table 34.5). Nursing's goal is to foster adaptive behavior and alter ineffective behaviors to become effectively adaptive.

Concept	Definition
Adaptation level	The dynamic level of stimuli a person can react to with normal adaptation/coping
Adaptive responses	Reliable reactions toward goals of "survival, growth, reproduction, mastery"
Adaptive/ effector modes	Coping methods manifesting in regulator and cognator actions; features four adaptive modes: physiological, self-concept, role function, interdependence
Cognator	Coping technique involving internal and external stimuli managed by emotions

TABLE 34.5 Key Concepts of Roy Adaptation Model

Concept	Definition
Coping mechanisms	Physical and emotional methods of reacting to environmental alterations
Environment	Stimuli and situations that affect people/groups, and their development and actions
Health	Being and evolving to a state of wholeness
Ineffective responses	Reactions contrary to adaptation goals “survival, growth, reproduction, mastery”
Regulator	Automatic coping reaction to environmental change(s), e.g., neural and chemical responses
Stimulus	The source of an action or reaction
System	Closely related group forming a whole; includes “inputs, outputs, and control and feedback processes”

TABLE 34.5 Key Concepts of Roy Adaptation Model

Integral to the RAM are the interactions of the person (an individual or a group) and the system. The system is composed of the inputs, outputs, control, and feedback (Gonzalo, 2024), which are compared to the functions of machinery (Figure 34.9). Scientifically, it is noted that the possibilities for adaptation are not infinite but are limited by the body’s resources and the person’s ability to cope. The strictly scientific approach to stress and adaptation is enhanced by the values of humanism, and the role of the person. The notion that the patient can be more than merely a reflexive participant in stress, and at least in some circumstances exert some control of stress, is a component of this model.

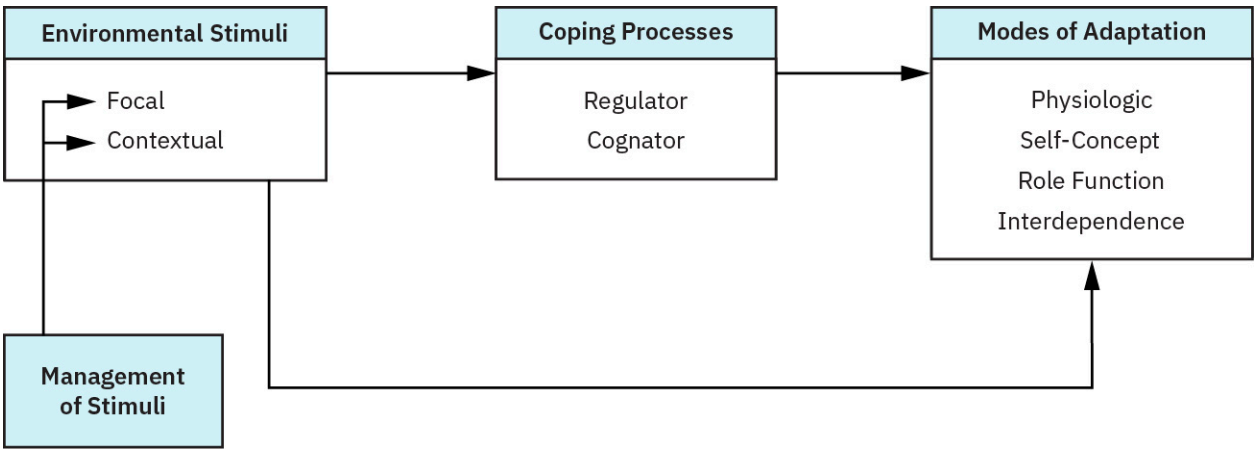

FIGURE 34.9 This diagram shows the RAM, from input through output, and the associated feedback mechanism. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 5

Refer to Unfolding Case Study #5: Part 4 for a review of the patient data.

Provider's Orders	**1230:** Referral to dietitian for lifestyle changes related to diet to address elevated HbA_{1C} and cholesterol levels. Provide patient with support group information for spouses of patients with cancer. Referral to psychiatry for history of depression and increased stress.

5. Take action: When implementing the provider's orders, how do these actions reflect concepts included in Roy's adaptation model?
6. Evaluate outcomes: After implementing the provider's orders, what findings should the nurse assess for that would indicate positive patient outcomes have been achieved?

Psychophysiological Stress Model

The **psychophysiological stress model (PSM)** reflects the relationship between the mental and physical reactions and adaptations to stress. The adaptive component of the stress response may be where the relationship is most evident. Whether the body is responding to a physical or psychological threat, negative results tend to occur when the level of stress does not adequately dissipate, which typically happens during resistance or through adaptation. Effective coping leads to positive adaptation and minimizes poor outcomes. Maladaptive coping mechanisms, however, contribute to the signs, symptoms, and diagnoses of chronic disorders, including physical diagnoses like HTN, DM, HF, as well as mental health diagnoses like anxiety, depression, and PTSD. The stress response involves actions at the hypothalamus, pituitary gland, and adrenal glands, which cause physiological reactions. Hormones released activate the ANS, with particular signs of stimulation of the SNS. Effects from the SNS involve increased actions in the respiratory and cardiovascular systems and release of corticosteroids; nervousness and anxiety are also common consequences. Interestingly, anxiety may also be the original stressor starting the cascade of events. Considering that the limbic system of the brain is where stress is identified by the body, and that the hormones also act chemically as neurotransmitters, the relationship between the psychological and physical responses to stress are unmistakable. Sometimes these interactions occur in a rather cyclical fashion, either initiating or fostering the processes.

Adaptation Techniques to Maintain Homeostasis

As the human body reacts to stress, various physical responses are apparent, reflecting, particularly, an activated SNS. The results include both psychological and physiological effects to maintain or return to homeostasis. The body is readied for fight or flight, if necessary. As Selye described, the resistance stage of the GAS is the period during which the body attempts to counteract the stress by adapting to its cause and effects. Coping mechanisms are established, starting with first encounters with stressors, and developing with continued exposures.

Strategies for coping and thereby adapting to threats can be effective or ineffective, and the consequences are similarly productive and stress reducing, or they are inefficient and ultimately lead to long-term changes. Such maladaptive alterations may be apparent in either mental or physical health disorders, and they may reflect minor to very serious stress-related problems. In the upcoming paragraphs, techniques for adaptation and maintenance of homeostasis will be investigated within the nursing process and the framework of the National Council of State Boards of Nursing Clinical Judgment Measurement Model (CJMM) in order to relate the processes to nursing care and clinical judgment.

Identify Predisposing Risk Factors for Stress Reactions

Like the diagnoses induced by stress, there are many risk factors for development of stress and how it is handled by the body. As nurses plan their care of patients, an important piece can be to distinguish those risk factors that increase the patient's likelihood of being adversely affected by stress. Such risk factors begin early in life, with

stressors imposed during fetal development, based on maternal health status, mental health, and behaviors. Such early risk factors continue with ACEs and the effects of such adverse events on adaptation throughout the life span.

Despite negative experiences, there are some who are innately optimistic. There are also those who are pessimistic despite supportive environments and mostly pleasant experiences. Also, there are people who are predictably optimistic or pessimistic, based on incidents perceived as accordingly good or bad. Additionally, ascertaining whether a patient reaches high levels of anxiety, or a crisis point, easily can be a contributing risk factor for stress responses cascading out of control and away from balance. Therefore, a general outlook can be a predisposing risk factor of homeostatic maintenance.

During a nurse's interaction with a patient, helping the patient (or family) to determine what coping mechanisms have been successful in the past, as well as those that have been ineffective, may contribute as risk factors for inability to maintain homeostasis. After all, if an adaptive technique has not been helpful in the past, a patient's reliance on it is not likely to be fruitful with repeated use. Another piece of a patient's history that may be considered a stress risk factor is health and surgical history. Well-controlled diagnoses may still contribute to stress, either by worry about it or by the actual stressful event of an exacerbation. Similarly, while some surgeries offer definitive and complete resolution of a problem, sequelae or side effects may occur, involving subsequent stress and inflammatory responses. This adaptation technique toward maintenance of homeostasis is represented by the assessment phase of the nursing process. Within the CJMM, this is the phase Recognize Cues.

Identify the Stressor

As the nurse considers a patient who is experiencing a stressful situation, it is important to identify the stressor. The assessment findings or cues from the previous risk factors step may prove helpful in narrowing down possible stressors to that which is currently causing psychophysiological stress responses. This adaptation technique reflects "analysis," the second phase of the nursing process, or "analyze cues" from the CJMM.

At this point, the nurse investigates aspects of the patient's life that may shed light on specific stressors influencing the patient. This may include potential contributions from health history and current state, including current socioeconomic situations such as family and employment status (or lack thereof). Recent events that have already been identified as having produced stress, or that have caused issues in the past, are worthy of analysis and consideration. With the nurse and patient working together to analyze the possibilities, the stressor (or multiple stressors) is typically identifiable.

Identify Personal Feelings Toward Stressor

For patients who are attempting to effectively cope with and adapt to stress, once a particular stressor has been identified, the next step toward hopeful success is to identify personal feelings relative to the stressor. Sometimes, stress responses are subconscious, as the body reacts to changes in homeostasis with automatic chemical reactions. Cases of this nature often reflect physical assaults to equilibrium, such as the vasoconstriction, aldosterone, and ADH release that are initiated to counter fluid volume deficit from blood loss or dehydration. These automatic reactions are often associated with acute stress circumstances, without the patient cognitively recognizing or responding.

An example of fluid volume deficit is an older adult patient who does not drink enough water. With this additional information in mind, the nurse can help identify contributions to the stressful incident. What is prohibiting adequate fluid intake? The nurse determines that the factors are forgetfulness and diminished thirst. And, because the patient has difficulty ambulating, it is too complicated to get up to fix a drink. As the nurse uncovers these issues, the patient can be collaborated with once again to determine what factors can be changed, and which among those the patient wants to change in order to minimize stress, maximize effective adaptation, and restore homeostasis.

PATIENT CONVERSATIONS

Diets of the Heart

Patient: [wipes her eyes and her runny nose] Nurse, I'm so worried about my heart!

Nurse: Tell me what worries you about it, Mr. Adams.

Patient: My heart's so bad. I just hate it!

Nurse: Ah. Yes, your heart failure has been getting a bit worse. I notice the doctor increased your lisinopril and your water pill today.

Patient: I know. I just want it to go away. My husband doesn't want to eat bland food, and I can't cook anymore, so he picks up stuff for us. He gets spicy food, and it does taste better.

Nurse: I wonder if you could find some foods that he just needs to heat up but are low in salt and fat and have flavor, if you'd eat them?

Patient: I guess it's worth a try. He's picky, but maybe.

Nurse: [shows a menu flier] Okay. Here are four companies that make meal kits suited for particular diets. Some of them are spicy. And I can give you a list of spices you can use, in case you want to add more. But if you want your heart failure to improve, or at least not get worse, you really need to not add salt, and limit fats.

Patient: If he'll use this, it'll make it easier for me, too.

Nurse: That's true. Let's follow up in three weeks, and you can tell me how you're both doing. We can think of more ideas then, if we need to. Why don't you bring Mr. Adams in with you then?

Patient: I'll see if he'll come. Maybe he'll like the food.

An ability and desire to change may reflect the same coping behaviors; sometimes, though, the fact that change is possible does not mean the patient wants to do so. This can pose a barrier to coping, leading to refusal to try or use of defense mechanisms. Maladaptive mechanisms unfortunately perpetuate negative results of stress and, ultimately, chronic stress-induced disorders. Nurses can assist patients through education about the following:

- pathophysiological processes
- prevention
- treatment compliance
- actions for effective coping:
  - regulating emotions
  - relaxing
  - novel approaches to stress and its relief
  - supportive relationships
  - professional therapy
  - positive self-talk and activities
  - participation in spiritual or religious actions (Peterson, 2021; Wilson, 2023).

Maintaining homeostasis continues with the analysis phase of the nursing process or the CJMM. During this step, collected data from the assessment or recognition phases are analyzed for possible interventions and actions by the nurse and patient. Subsequently, they will be arranged by priorities.

Decide Action

At this point, the nurse has identified risk factors, applicable stressors, and the patient's feelings toward the stressors. With these pieces in place, the stressors can be prioritized, and actions can be considered and decided on. If there is but one stressor identified or noted to be of importance, prioritization is simple; frequently, however, patients have more than one issue going on at once, or the source of stress is complicated with multiple actions possible. Based on severity of symptoms, patient goals, and the patient's personal priorities, decisions need to be made about action(s) to plan and implement. To continue the previous exemplar about fluid volume deficit, the nurse previously considered possibilities for the patient's hypovolemia, including forgetfulness, diminished thirst, and ambulation challenges limiting access to fluids. With the patient's input, it is determined the most important action is to improve the availability of fluids. The patient feels that even without feeling thirsty, it will be easier to remember to drink if water is handy.

Constructive

Some actions are constructive and will improve access to what the patient needs to effectively adapt to stress and

minimize its effects. Some are likely to prove destructive and are explored next. Ideally, constructive measures will either produce eustress or little to no stress, maintaining the homeostatic state.

Revisiting the example patient, constructive solutions include the following:

- having an assistive device (e.g., cane, walker) nearby for the patient to easily use to ambulate to the refrigerator or sink for water
- having water available in a cooler or insulated beverage container near the patient's bed or chair
- placing a bedside commode near the patient's bed or chair to prevent anxiety from having to ambulate to the toilet

Destructive

Destructive actions are those that will produce distress for the patient and therefore foster negative coping strategies and maladaptive results. Some of these will be individual responses, as what may prove to be constructive for one patient may be destructive for another. A patient who is forgetful may need reminders for particular actions, so a reminder of some sort may be helpful. However, a phone call or an alarm may be startling and cause fear and agitation, so it may cause its own negative stress.

Evaluate Outcome

Finally, in an effort to produce and foster adaptation techniques to maintain homeostasis, the evaluation process should be employed. At the point where actions were decided, patient goals and nursing goals were both considered in order to determine which action(s) to plan and act on. This period allows for the nurse to evaluate the outcomes of the previous actions; when the actions were implemented, were the established goals achieved? If so, then the cycle of the nursing process continues with assessment or recognition occurring again to determine the next important cues. If goals were not met, the process again begins, but with focus on what modifications may prove helpful for goal achievement and how to implement such changes.

Summary

34.1 Stress and Adaptation

Stress involves a perceived threat and responses associated with the release of chemicals that stimulate the SNS. Resulting effects are those commonly recognized as the fight-or-flight response, which readies the body for action against challenges and dangers. In many circumstances, stress is necessary and life sustaining, or even lifesaving. Stress is integral in some aspects of growth and development, especially through adaptation. Adaptive, or coping, responses support the body's resistance to stress and ideally its resolution and return to a condition of homeostasis.

Resistance to stress involves adaptive responses, which when effective assist the body in its return to equilibrium, when the SNS effects diminish and homeostasis is restored. Unfortunately, coping does not always involve positive techniques, and maladaptive results may also occur, preventing or slowing the return to homeostasis. Sustained arousal responses, as seen by continued SNS stimulation, lead to chronic stress-induced illnesses and contribute to functional deterioration over time.

Stress and adaptation influence human development, health, and wellness throughout the life span. Responses to stress may be conscious or subconscious, as some reactions are strictly activated by neurobiological actions, and others may be controlled by the affected individual. Individuals who demonstrate higher levels of resilience and optimism typically experience fewer negative impacts from stress, with positive coping returning them to a level of homeostasis more promptly. Negative adaptive responses are more likely for those who lack resilience or have experienced adverse or traumatic events, as they have been hindered in developing effective coping skills and resilience.

Physiological and psychological aspects of homeostasis are maintained by various means. The stress response results in generalized, systemic effects, as well as localized effects, depending on the specific type of stressor. Classic examples of the LAS include reflex and inflammatory responses, while the GAS is exemplified by the fight-or-flight response associated with SNS stimulation affecting the entire body. Psychosocial homeostasis is affected by the close interaction of mind and body and by the development of effective coping mechanisms and adaptive abilities.

34.2 Effects of Stress on Health and Wellness

The effects of stress on health and wellness have been the topic of the previous sections. Using Maslow's hierarchy of needs as a guide, physiological, safety and security, love and belonging, self-esteem, and self-actualization needs have been described. The impact of stress on achievement and satisfaction of these basic and advanced needs has been analyzed and exemplified.

Because there are negative consequences of long-term stress, effects on the body in general, and the immune system specifically, have been explored. Unfortunately, many of the stress-related disorders are all too common, with nursing students beginning to become familiar with them during clinical experiences. Throughout professional practice, nurses are apt to encounter some of these diagnoses repeatedly. Additionally, poor health habits have been characterized, and some of the negative impacts such decisions and behaviors have on families have been shown.

When adaptive responses are ineffective, results can be critical. When such maladaptive coping is unable to keep up with the stress responses, crises are possible. In crisis situations, the patient loses psychological homeostasis and the ability to cope and adapt. Major, typically adventitious, events may manifest initially at the crisis level; maturational and situational events tend to begin at lower stress levels. If coping is insufficient, day-to-day stresses or unexpected incidents can cause an individual to spiral out of control and into a stage where they are not able to regulate the disequilibrium and restore homeostasis.

34.3 Factors Affecting Stress and Adaptation

Stress can be found in most any area of human life. Assuming normal growth and development, there are actual and potential stressors from prenatal development through old age and ultimately death. During any of these life span phases, developmental and situational stressors impact neurocognitive changes as neural pathways and responses are created and promoted.

Whether adaptations have positive or negative results depends on a variety of individual factors. How stress is received and perceived affects a person's ability to adapt. Additionally, state of health (essentially a continuum from wellness to illness, and ultimately critical illness and death) influences psychophysiological stress reactions. Outcomes tend to be better, demonstrating effective coping strategies and adaptive responses, when an individual is supported through stressful circumstances. A nurturing environment, support from family, friends, and the larger communities of employment, leisure, spiritual support, and perhaps formal mental health providers, tend to foster eustress and resilience.

Considerations within the topic of socioeconomic status may come to mind as simply financial, but there is more to it than money. While economic status is important, other issues, like healthcare access and availability of neighborhood and community systems, are also important under the socioeconomic umbrella. Again, these influences and systems reflect layers of support and the potential for stress. Such factors contribute, once again, to positive or negative stress responses and resultant impacts on health and wellness.

34.4 Adaptation Theories and Models

This final section of the chapter offers a high-level view of stress and adaptation through an exploration of theories and models. The stress-response theory and GAS are similar, with focus on the physiological response to a stressor or threat and resultant changes affecting psychobiological function. More recently, the concept of allostasis has been introduced, along with theories surrounding allostasis and allostatic load. This offers further information about physiological limits to chronic stress and how homeostasis is restored and maintained.

Two models of stress and adaptation, the RAM and the PSM, have been introduced. Roy's model is a detailed framework for nursing education and practice, applicable as a guide for curriculum and potentially as a textbook. Its comprehensive nature addresses stress and its physiological reactions and different applications for the holistic aspects of nursing. There is some correlation with Selye's stress and adaptation concepts but with expansion specific to nurses and patient care.

As the model's name indicates, the PSM's focus is on the connections between the psychological and physiological implications of stress and adaptation. There is an undeniable relationship between responses that are initiated by one system and have impacts on the other. As the PSM suggests, for example, anxiety can play a role as a stressor and lead to physiological responses, or it can be the result of a physiological threat, essentially a side effect of the stimulated SNS. Adaptations result, effectively or not, from either system as the original stimulus, and considering both aspects is important.

Coping strategies or adaptation techniques are the resistance mechanisms for restoring and fostering homeostasis. The process, from identification of risk factors, the stressor, and its impacts on the individual, through establishing priorities, producing solutions, implementing actions, and finally evaluation, has been studied.

Key Terms

adaptation the ongoing changes within the body in response to stress
allostasis the ongoing changes within the body in response to stressors
allostatic load the collective burden of chronic stressful events.
anxiety an overwhelming feeling of apprehensiveness, nervousness, and worry about real or perceived events that have an uncertain outcome
coping an adaptive mechanism for managing stress
crisis an inability to cope with a stressful situation
distress negatively perceived stress, or stress that causes a negative response
eustress positively perceived stress, or stress that initiates a positive response
general adaptation syndrome (GAS) theory involving stress as the cause of a three-stage syndrome of events resulting in either adaptation or exhaustion
homeostasis the process by which the human body maintains balance by adjusting to internal and external stimuli
maturational events that happen in a person's life
psychophysiological stress model (PSM) the relationship between the mental and physical reactions and adaptations to stress
Roy's adaptation model (RAM) holistic approach to the art and science of nursing structured as a science, model,

and practice discipline containing various elements

stress the physiological response by the body to a stimulus, or stressor

stress-response theory the identification of the body's nonspecific reaction to a threat or stressor

stressor the stimulus or cause of the stress response

Assessments

Review Questions

1. Starting a final exam for which the student has not fully prepared will likely elicit which aspect of stress for the student?
   a. allostatic load
   b. distress
   c. maladaptation
   d. eustress

2. After being terminated from employment, a person stops for a drink and yells at the bartender. The nurse recognizes this behavior as representing what defense mechanism?
   a. repression
   b. projection
   c. displacement
   d. intellectualization

3. The nursing preceptor corrects the student when what chemical is described as a catecholamine?
   a. dopamine
   b. norepinephrine
   c. epinephrine
   d. cortisol

4. Allostatic overload describes which circumstance?
   a. a level of physiological equilibrium
   b. more stress than the person is able to cope with
   c. stress that contributes to normal development
   d. an incapacitating feeling of unease

5. A patient who is admitted to the hospital experiencing an exacerbation of chronic obstructive pulmonary disease is very anxious. The nurse is aware of which likely cause of the patient's anxiety?
   a. extreme pain
   b. elevated blood pressure
   c. air hunger
   d. gastrointestinal upset

6. Stress is initially recognized in which part of the brain?
   a. limbic system
   b. cerebellum
   c. Wernicke area
   d. brainstem

7. A 32-year-old patient who has been laid off from work has frequent episodes of anxiety, particularly in the evenings. This scenario shows that which of the patient's basic needs is not being met?
   a. physiological needs
   b. safety and security
   c. self-esteem
   d. self-actualization

8. A nursing student is caring for a patient who has been prescribed a glucocorticoid drug to treat inflammation. The student recognizes this type of drug has which additional result?
   a. frequent hypotension
   b. severe hives
   c. reduced immune response
   d. critical weight loss

9. A patient has not only lost their home, but the entire city has been demolished by a hurricane. Which type of crisis has the patient experienced?
   a. maturational
   b. situational
   c. development
   d. adventitious

10. An anxious patient has employed coping strategies that have worked to reduce anxiety in the past, but this time these are not effective. The patient is in which crisis phase?
   a. crisis phase 1
   b. crisis phase 2
   c. crisis phase 3
   d. crisis phase 4

11. Effective adaptation during the resistance phase of the general adaptation syndrome is anticipated to have what result?
   a. homeostasis
   b. alarm
   c. exhaustion
   d. allostatic overload

12. Exposure to maternal stressors affects which fetal hormone?
   a. calcitonin
   b. growth hormone
   c. cortisol
   d. oxytocin

13. Which patient typifies experiencing the developmental milestones of establishing intimacy and independence?
   a. an 11-month-old, starting to walk
   b. a 6-year-old, starting first grade
   c. a 22-year-old, getting married
   d. a 64-year-old, retiring

14. To counteract the negative effects of a dysfunctional and abusive family, the nurse will recommend a 12-year-old patient try what action?
   a. participate in an after-school indoor soccer group
   b. bring brochures for counseling home for the parents
   c. stay outside with friends to avoid family arguments
   d. dissociate from family to prevent conflicts

15. What is a frequent stressor faced by the older adult?
   a. facing a promotion at work
   b. having multiple health problems
   c. searching for a new job
   d. raising a defiant teenager

16. A patient with a long history of bipolar disorder may have difficulty coping with stressful situations for what reason?
   a. the complexity of treating the disorder
   b. a lack of financial resources
   c. established maladaptive techniques
   d. a natural tendency toward resilience

17. What description characterizes the stress-response theory?
   a. a specific reaction to a threat
   b. an adaptive response
   c. nonspecific responses to a stressor
   d. underdeveloped coping

18. What theory related to stress and reactions to stress is represented by the following stages: acute, resistance, and exhaustion?
   a. allostasis and allostatic load theory
   b. stress-response theory
   c. psychophysiological stress model
   d. general adaptation syndrome

19. Roy's adaptation model includes which concept?
   a. the goal of nursing
   b. resistance
   c. specific diagnoses
   d. alarm

20. Which action would be constructive for a patient who is adapting to limited mobility after several falls?
   a. Encourage the patient's frequent independent walking.
   b. Provide a raised seat for the toilet.
   c. Restrict fluid intake.
   d. Teach the patient use of a walker.

21. During the resistance phase of the general adaptation syndrome, the action of the sympathetic nervous system is opposed by which system?
   a. immune system
   b. vascular system
   c. parasympathetic system
   d. endocrine system

Check Your Understanding Questions

1. Adrenocorticotropic hormone (ACTH) is released from the hypothalamus in times of stress. The ACTH causes release of cortisol, norepinephrine, and epinephrine from the adrenal glands. Describe four of the effects of the release of these hormones.

2. A patient whose spouse has experienced a stroke with significant residual effects is at risk for effects related to stress and anxiety. Describe the type of crisis the spouse is at risk for if anxiety becomes overwhelming.

3. Describe at least five negative effects stress can have on families.

4. Select one of the social determinants of health and describe in approximately 100 words how it contributes to increased stress.

5. Describe an example of how a nurse will identify which stressor is causing a patient's distress.

Reflection Questions

1. Consider a patient who is an accountant and is extremely anxious a month prior to the income tax deadline. Describe positive coping behaviors and ways to introduce such behaviors to the patient.
2. Think about caring for a patient whose anxiety has been rising. The patient is experiencing severe stress and is extremely anxious. What are your concerns for the patient reaching the point of crisis?
3. Identify a stressor you have encountered since starting nursing school. Reflect on the following: (1) Was this developmental or situational? (2) How were you able to adapt? (3) Was your adaptation positive/effective or negative/ineffective?
4. Consider an action that exemplifies a destructive action relative to maintenance of homeostasis. Describe two things you as a nurse can do to assist your patient to identify constructive actions instead.
5. Describe what has happened physiologically when a patient has reached the exhaustion stage of the general adaptation syndrome.

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #5: Part 3.
   What psychosocial stressors is the patient experiencing?
2. Refer to Unfolding Case Study #5: Part 4.
   Based on the Unfolding Case Study and Maslow's hierarchy of needs, how do you think the patient's stress is affecting his needs?
3. Refer to Unfolding Case Study #5: Part 5.
   What are some examples of constructive actions that could be taken by the nurse?

What Should the Nurse Do?

1. A patient who has a long-standing history of type 2 diabetes mellitus has been experiencing extreme episodes of anxiety with accompanying feelings of a racing heart, breathing fast, and high blood sugar. The patient asks the nurse why this is happening. What should the nurse do to explain the stress response?
2. A patient who is scheduled to undergo mental health testing is frequently asking to use the restroom to void. What should the nurse do in order to maximize the patient's performance on the test?
3. A nurse is caring for a patient with a long-standing history of hypertension. The patient is worried about this becoming worse, because a third prescription is now necessary for control. In talking to the patient, the nurse discovers the patient is not self-aware. What should the nurse recommend to help the patient foster self-awareness?

Competency-Based Assessments

1. Describe how eustress is perceived as a positive response.
2. Create a maximum 300-word explanation for a patient as to how chronic stress affects immunity.
3. Create a three-minute video explaining concepts within socioeconomic status.
4. Review these concepts of Roy's adaptation model: adaptation level, adaptive responses, adaptive/effector modes, and health. Describe how they relate to nursing care of patients.

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CHAPTER 35
Spirituality

FIGURE 35.1 Spirituality can mean many different things to different people. However it's defined, its presence has the potential to improve a patient's health and well-being. (credit: modification of "Astro Spirituality" by Sujeet Singh/Wikimedia Commons, CC BY 4.0)

CHAPTER OUTLINE

35.1 Dimensions of Spirituality

35.2 Applications of Spirituality to Health Care

INTRODUCTION If you were to ask 100 people what spirituality means, you would likely get 100 different answers. These diverse answers would likely reveal a person's innermost beliefs and values, as well as the meaning and purpose they derive from life and their relationships with the world around them. For many people, spirituality drives their decisions and provides comfort and resilience during difficult life experiences, including illness (Balboni et al., 2022). Consequently, understanding a patient's spiritual beliefs and needs—including recognizing how they may differ from one's own—is one of the most important parts of providing culturally aware, compassionate, and comprehensive nursing care. In this chapter, you will learn how to have open, respectful conversations with patients about their spiritual needs and identify the evidence-based practices that will help you meet those needs.

35.1 Dimensions of Spirituality

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Recognize key concepts of spirituality
- Identify the different practices of spirituality
- Explain how spirituality affects health and well-being

Many people believe in and feel connected to a power greater than themselves. This sense of connection helps give their lives meaning and purpose and provides solace and peace as they navigate life's challenges. One's **spirituality**

encompasses not only this connectedness but also the diverse practices that people follow in seeking **transcendence**, or experiences that move them beyond the physical or literal world. For some people, spiritual practices include belief in a particular deity or deities and worship in a religious institution such as a church, temple, mosque, or synagogue. Others may develop their spirituality through nature or art. An individual's sense of spirituality may evolve throughout their life as they have new experiences and cultivate new relationships.

Nurses play a pivotal role in helping people cope, and spirituality is often central to these efforts. Integrating a patient's spirituality with their care has been shown to lead to improvements in health and quality of life, as these beliefs influence how patients experience pain, respond to stress, and approach the challenges associated with serious illness and death (Balboni et al., 2022; Harvard T. H. Chan, 2022). To do this effectively, nurses must understand the key concepts and practices of spirituality.

Concepts of Spirituality

One's sense of purpose or meaning in life, or one's **spiritual well-being**, depends on positive connections between one's self and the rest of the world, including other people, nature, art, and, for some, awareness of a higher power (American Nurses Association [ANA], 2015). When patients are confronted with an initial diagnosis of illness or a severe injury, they often struggle with the fundamental question, "Why is this happening to me?" This question is a manifestation of **spiritual distress**, or disruption to their core beliefs and values (Harrad et al., 2019). Nurses play a crucial role in alleviating patients' distress by responsively addressing their discomfort and advocating for their spiritual needs throughout the health care journey.

In its first provision, the American Nurses Association (ANA) Code of Ethics emphasizes nursing practice with compassion, respect for each person's inherent dignity, and the recognition of their unique attributes. According to this code, optimal nursing care seeks to enable patients to live with maximum well-being across physical, emotional, social, and religious or spiritual dimensions, reflecting their individual values. In the context of nursing, spirituality and spiritual values are closely intertwined with caring, as are key concepts such as faith, hope, and love.

LINK TO LEARNING

The ANA Code of Ethics for Nurses with Interpretive Statements (https://openstax.org/r/77ANAEthics) is a useful guide for how to deliver quality, ethical care.

Faith

An acceptance of certain religious doctrines is called **faith** and is often associated with specific religions such as Buddhism, Christianity, Hinduism, Islam, and Judaism. Although it may be viewed in monotheistic (belief in a single deity or god) tradition as adherence to specific doctrines, faith takes the form of an attitude of devotion facilitating a gateway to spiritual practice in some cultures and religions. In a broader sense, faith can refer to a relationship with a divine force—whatever an individual believes that to be.

Engaging in a faith-based and spiritual practice can be a valuable coping strategy for patients, addressing fundamental human needs such as identity, self-care, community, belonging, and connection. As nurses, advocating to meet patients' spiritual needs is one of the tasks of providing comprehensive, culturally aware care. Initiating conversations and creating a supportive space for discussions on faith and spirituality can play a pivotal role in promoting physical and psychological healing.

Religion

People commonly associate faith with **religion**; however, they are distinct concepts. Religion is a unified system of beliefs, values, and practices that a person holds sacred or considers to be spiritually significant (Figure 35.2). It is possible to be spiritual without belonging to any religion, just as it is possible to belong to a religious community and perform all the required practices without deriving any spiritual meaning from them.

FIGURE 35.2 These religious symbols represent some of the world's most populous religions: (top row, from left) the word *Om* (Hinduism), the wheel of dharma (Buddhism), the Jain emblem (Jainism), the khanda (Sikhism); (bottom row, from left) the star of David (Judaism), the cross (Christianity), the crescent and star (Islam), and the taijitu (Taoism). (credit: modification of "Religious symbols collage" by "Howardcorn33"/Wikimedia Commons, CC BY 4.0)

Nurses should be familiar with the beliefs and practices of the religions present in their communities, particularly beliefs regarding health and well-being. For example, some religions prohibit the eating of certain foods or the utilization of specific medical interventions such as blood transfusions. Some religions celebrate holidays with different rules and expectations for behavior, such as fasting, prayer, or purification rituals. As much as possible, a nurse should tailor care to incorporate the religious needs of the patient and their family. Nurses should get clarification from patients and their families about their lived experiences of religion and spirituality—just because a patient identifies as a specific religion does not mean they follow it devotedly.

Hope

The desire for a positive outcome is known as **hope**. Hope is a vital and influential aspect of spiritual practice in nursing and can guide patients through challenging moments. It is central to the healing process and emphasizes the efforts of the patient's journey through recovery.

Cultivating hope is a skill that can be developed through practice and holding specific attitudes. Patience, the ability to endure delays and allow events to unfold naturally, is one such attitude. Courage, or confidence in the face of uncertainty, is another crucial element. Persistence, persevering regardless of obstacles, forms the third pillar. True hope is realized when we sincerely declare that all will be well and genuinely believe in that affirmation.

Hope is also a desire or goal for a particular event or outcome. For example, some people may view dying as "hopeless," but a spiritual view can define hope as a "good death," which is when a patient dies peacefully and according to their end-of-life preferences.

People in despair may try to find witnesses who can answer their questions and replace fearful voices with hopeful ones. At times, nurses may ask patients about their fears—in these moments, simply being a compassionate listener can be a powerful healing tool beyond practical nursing care. Quality connections shape the level of hope in a patient's life, opening up a horizon of possibilities beyond the current situation.

Love

The notion of **love**, a strong feeling of affection, may seem simple—after all, most of us use the word every day in a variety of contexts. But we clearly mean something different in each context: romantic love differs from parental love, which differs from the love someone has for a piece of music, a treasured possession, or delicious food. Nurses are not required to love their patients; a sense of professionalism or responsibility may be all the motivation they need to provide effective, quality care. However, contemplating the role of love in nursing can enhance nursing

practice in two significant ways. First, it prompts nurses to reflect on their values and beliefs. Second, it guides them in establishing meaningful interactions with patients. Love in nursing manifests through accountability, benevolence (being kind and well-intentioned), attentive concern, respect, and the recognition of others as human beings. These behaviors contribute to patients and nurses feeling valued, fostering self-esteem, and alleviating suffering.

Practices of Spirituality

There are many ways that people can experience and express their spiritual beliefs, both as individuals and as part of a community. Practices such as praying or going to church are associated with particular religions. Others, such as communing with nature or practicing mindfulness, are more about feeling connected to oneself and the rest of the world.

Spiritual practices may involve **ritual**, a defined activity to commemorate or cope with something significant. Spirituality could also be a ceremony (a public, formal celebration or gathering to honor an important event). It is important for the nurse to be aware of the different spiritual practices that may matter to their patients so they can facilitate these activities as part of the healing process.

Individual Practices

Although individual practices may be performed in a group setting (such as a yoga class or a prayer group), the focus is on the individual experience of spirituality. Many of these practices involve private contemplation or similar activities to increase compassion and empathy and quiet the mind (Delagran, n.d.). This section explains some common individual practices and their associated health benefits.

Mindfulness

The practice of being present in the moment and aware of one's thoughts, feelings, and environment is called **mindfulness**. This awareness is nonjudgmental: in a mindful state, we acknowledge negative experiences but do not fault ourselves for experiencing them. When practiced regularly, mindfulness helps us develop some control of our reactions, see the habitual patterns that lead to negative reactions and stress, and learn healthier patterns. Practicing mindfulness reminds us to pause, get a clearer picture of a situation, and respond more skillfully.

Consider your default state when studying for an exam in a difficult course or preparing for a clinical experience. What do you do? Do you tell yourself, "I am not good at this" or "I am going to look stupid"? Does this distract you from paying attention to studying or preparing? How might the experience be different if you had an open attitude with no concern or judgment about your performance? What if you directly experienced the process as it unfolded, including the challenges, anxieties, insights, and accomplishments, while acknowledging each thought or feeling and accepting it without needing to figure it out or explore it further? By simply observing thoughts and emotions instead of reacting to them, a person can develop a broader perspective and learn more effective responses (Schuman-Olivier et al., 2020).

Meditation

A mindfulness technique that involves focused attention—often on a particular word, phrase, or image—and deep breathing is known as **meditation**. Research suggests that regular meditation can contribute to reduced symptoms of depression, improved sleep quality, and enhanced mental clarity, making it a valuable tool for patients to manage stress, alleviate anxiety, and foster emotional resilience (American Psychological Association [APA], 2019). Some studies have also shown that meditation may help decrease the perception of pain and support pain management (Hilton et al., 2017).

In a healthcare setting, introducing meditation as part of patient care can be a simple yet powerful strategy. Nurses can educate patients about the practice, its positive effects on physical and mental health, and its potential to complement medical treatments. Offering guided meditation sessions or providing resources such as meditation apps can empower patients to incorporate this practice into their daily routines, promoting self-care and a sense of control over their well-being.

REAL RN STORIES

Focusing on the Moment

Nurse: Hillary, BSN
Clinical setting: Oncology unit
Years in practice: 16
Facility location: A hospital in rural New England

Even though I've been a nurse for well over a decade, I only transitioned into cancer care a few years ago. The career shift was actually for a personal reason—after my mom was diagnosed with breast cancer, I learned that our local healthcare system was really struggling to provide quality care to cancer patients and their families. I was determined to do my part to make things better, but I had no idea what I was in for. And I'll be honest, that first year, I wasn't sure I'd make it. But I had an amazing charge nurse, Kathy, who taught me so much about how to not just take care of my patients and their loved ones, but myself as well. One of the first "tricks" she taught me was meditation. And at first, I thought it was a little weird. Like one of those "new-age" things you go to a retreat to do. And besides that, I didn't see how I could possibly justify taking the time out of my shift to do it when I had patients who needed me. But Kathy was adamant about the self-care work that nurses have to do. Meditating was hard at first, because I couldn't get my brain to just shut up. But over time, it did start to get easier.

I'll never forget the first time I felt it really working for me. I had a patient with the same cancer my mom had, but a far worse prognosis. This patient, we'll call her Shanna, also didn't have any family support. The situation was stressful, not just because Shanna was in so much pain and so sad, but because watching her go through what my mom had gone through just brought up a lot of my own feelings again. I was getting distracted and making mistakes, which immediately alerted me that I needed to stop, reach out for help, and find strategies for coping—and in that order.

At first, it was just a few minutes when I was restocking supplies or waiting for the fountain to fill up my water bottle—just focusing on what I could hear, see, smell, and touch. I would focus so hard on being in the moment that it would force me out of the past, where my mom was the patient, and when I walked back into Shanna's room, I was present and there for her. Pretty soon, those little meditations just became a normal part of my shifts. Whenever I feel myself getting too caught up in my head, or someone else's, meditating brings me back to the present moment and the patient in front of me.

Prayer

The practice of communicating with a higher power or divine entity is prayer. Unlike mindfulness and meditation, **prayer** is mainly used in the context of religion, though it is a deeply personal and culturally diverse practice. Encouraging prayer as part of the healing process for patients who are open to it can provide a source of comfort, solace, and connection during challenging times. Prayer can foster emotional resilience by offering patients a means to express their fears, hopes, and gratitude and helping them to navigate the complex emotions associated with illness. It is also a reminder of their faith and connection to a higher power, which can give patients a sense of hope and purpose.

For the nurse, supporting patients who want to incorporate prayer into their care plan demonstrates a commitment to holistic, patient-centered care (PCC). It honors the individuality of each patient and promotes an environment that respects and supports their diverse cultural and spiritual backgrounds. Prayer has been shown to have concrete benefits for patient health, linked to stress reduction and relaxation (Andrade & Radhakrishnan, 2009).

Breathwork

Both healthcare providers and patients often face significant stress that affects their physical, mental, and spiritual well-being. One practical approach to interrupting the stress cycle and promoting relaxation is **breathwork**, a technique involving intentional, controlled breathing. Breathwork is a safe and easily accessible practice that can be utilized in any healthcare setting as well in one's daily routine. It has been proven to reduce anxiety and depression while improving sleep, making it a valuable tool for individuals seeking to enhance their well-being (Shaw-Metz, 2023). Both nurses and patients can prepare for moments of heightened stress by identifying their specific triggers

and stressors and incorporating breathwork into their self-care tool kit as a coping strategy.

Nature

In many spiritual traditions, nature is a powerful source of symbolism and metaphor. The changing seasons, cycles of life, and relationships observed in nature can mirror spiritual concepts such as growth, transformation, and the interconnectedness of all living things. But the connection between the natural world and the self goes beyond metaphor. Sensory experiences in nature, such as the feel of the wind, the scent of flowers, or the sound of flowing water, can serve as conduits for spiritual experiences, promoting holistic well-being and reducing stress and anxiety (APA, 2020). As individuals relax in natural surroundings, they may find it easier to connect with their inner selves and explore spiritual aspects of their identity (Ryff, 2021).

Spending time in nature can also enhance spiritual healing by fostering a deep connection between individuals and something larger than themselves. In essence, nature provides a serene and nurturing backdrop for individuals to explore and deepen their spiritual connection. Whether providing awe-inspiring beauty or the comfort of everyday sensations, nature encourages a state of mindfulness and presence that is conducive to spiritual reflection, meditation, and inner peace (Yamada et al., 2020).

Yoga

A practice rooted in ancient spiritual traditions, **yoga** combines physical postures, controlled breathing, and mindfulness techniques to harmonize the mind, body, and spirit (Figure 35.3). The physical aspects of yoga, including gentle stretches and postures, contribute to flexibility, balance, and improved circulation. Systematic yoga practice has been found to reduce inflammation and stress, decrease depression and anxiety, lower blood pressure, and increase feelings of well-being (Padmavathi et al., 2023; Yatham et al., 2023). Yoga can be a valuable tool for pain management and rehabilitation both for patients dealing with chronic conditions as well as those recovering from surgeries. Yoga has also been shown to improve sleep quality by promoting relaxation and reducing anxiety, which can help with physical healing (Woodyard, 2011). The practice also encourages emotional and spiritual healing by cultivating self-awareness and mindfulness and helping individuals be fully present in the moment.

FIGURE 35.3 A yoga practice does not have to be advanced to offer mental and physical benefits. (credit: "Yoga" by Dave Rosenblum/ Flickr, CC BY 2.0)

By incorporating yoga into patient care, nurses contribute to a patient-centered approach to healing. Yoga's holistic nature addresses physical ailments and the spiritual dimensions of well-being. The practice's diverse origins provide an inclusive approach to spiritual healing that respects various cultural backgrounds. Nurses can educate patients on the accessibility and benefits of yoga, encouraging them to continue the practice independently as a valuable

tool for self-care beyond the healthcare setting.

Journaling

Writing one's thoughts and documenting one's feelings in a journal or diary is called **journaling**. The practice can help people become more aware of their inner lives and feel more connected to experiences. Studies show that writing during difficult times may help a person find meaning in life's challenges and become more resilient in the face of obstacles (Sohal et al., 2022; Smyth et al., 2018). When journaling, it can be helpful to focus on three basic questions: What experiences give me energy? What experiences drain my energy? Did I experience anything today that made me feel alive and positively connected to my surroundings? Allow yourself to write freely without stopping to edit or worry about spelling and grammar.

Social Support

Social support plays a crucial role in individual spirituality, offering avenues for connection, support, and growth within a community context. One essential practice of spirituality through social support is active participation in religious or spiritual communities. Some people find a spiritual community among their family and friends. Others join a spiritual group in the community, such as a church, synagogue, temple, mosque, meditation center, nature center, or yoga class. These communities provide a space for individuals to come together, share beliefs, engage in worship, and find support from others. Within these communities, individuals often form deep bonds, offering each other companionship, encouragement, and a sense of belonging.

Within social support systems, people may also seek guidance from spiritual mentors or leaders who can offer wisdom, advice, and spiritual insight, guiding individuals through challenges and helping them deepen their understanding of their faith or beliefs. Through mentorship relationships, individuals receive personalized support and encouragement tailored to their unique spiritual needs and aspirations.

Volunteering and serving others within the community are individual practices of spirituality. Serving alongside others fosters a sense of unity, purpose, and interconnectedness, deepening individuals' spiritual growth and fulfillment. Through acts of service, individuals express their spiritual values of compassion, kindness, and generosity while connecting with others and positively impacting the lives of those in need.

As a nurse, you may be called upon to help a patient connect with social support. There will also be times when you, as a human being, will need to lean on your social network for support. If you have a well-established support network, it will also help you help patients navigate the valuable connections with others that can bolster them spiritually in difficult times.

Organizational Practices

Organized spiritual practices typically involve religion. Although the overall percentage has been trending downward, most Americans identify as belonging to a specific religion. However, the Census of American Religion, conducted annually by the Public Religion Research Institute (PRRI), underscores the complexity of these affiliations (Public Religion Research Institute, 2023). According to the 2022 survey:

- 26.8 percent of Americans identify as religiously unaffiliated, the largest individual category, which includes:
  - **atheist**, those who do not believe in the existence of any divine being, and
  - **agnostic**, those who believe that ultimate reality is unknowable, as well as,
  - people who are very spiritual but resist identifying with a specific religion.
- Of Christians in the United States, 27.6 percent identify as nonevangelical Protestant and 23.1 percent identify as Catholic. The survey further divides these totals into subcategories by race and ethnicity: 13.6 percent identify as evangelical Protestant, 1.5 percent identify as Mormon, and 1.1 percent identify as Jehovah's Witness.
- 1.9 percent of Americans identify as Jewish.
- Less than 1 percent of Americans identify as a member of any other specific religion, including Islam, Buddhism, and Hinduism.

Research by PRRI also reveals varying levels of certainty and nuance in the nature of belief in a god, illustrating that individuals hold distinct perspectives even within shared religious frameworks (Pew Research Center, 2023). PRRI findings emphasize the diversity within religious groups, as some unaffiliated individuals embrace specific religious beliefs, whereas some affiliated members report minimal importance of religion in their lives. Furthermore, the

survey indicates that the belief in absolute standards of right and wrong is influenced not only by religious beliefs but also by practical experiences, highlighting a nuanced and pragmatic approach to morality in the United States.

LINK TO LEARNING

Learn more about the 2022 PRRI Census of American Religion: Religious Affiliation Updates and Trends (https://openstax.org/r/77PRRICensus) that provides county-level religious affiliation data.

Every culture has atheists who do not believe in a divine being or entity and agnostics who hold that ultimate reality (such as a god) is unknowable. However, being a nonbeliever in a divine being does not mean the individual has no morality. A person who does not believe in a god can still be guided by a set of morals, ethics, and values, contribute to the world in positive ways, and have deeply meaningful relationships with others. At the same time, a person may believe in a god but do immoral, unethical, and harmful things. One's religious beliefs may influence their sense of moral judgment, but it is not synonymous with it.

To provide effective, patient-centered care, nurses must be knowledgeable about the various cultures in the communities they serve, and religion is a key component of culture. The following subsections provide a high-level overview of the religions that nurses in the United States are the most likely to encounter. However, it is essential to recognize that the categorization of religion is not without its limitations and complexities. Most religions have formal sects, informal movements or practices (sometimes at the local level), and intersect with cultural aspects related to the ethnicity, race, and national origin of members. These labels can be oversimplified and may not fully capture the diversity and complexity of religious beliefs and practices within specific cultural contexts, and can sometimes perpetuate stereotypes or essentialize cultural identities. Finally, media depictions and literature -- even when authentically written from the perspective of a member of the religion -- can lead to assumptions or stereotypes, because religions are not monolithic.

When a nurse encounters a patient whose belief system is unfamiliar, the situation presents an opportunity for cultural humility and respectful engagement. In such instances, it is imperative for the nurse to approach the situation with an open mind and a willingness to learn about the patient's unique traditions and practices. This begins with actively listening to the patient's perspective, asking questions to gain a deeper understanding, and demonstrating genuine curiosity and respect for their beliefs.

Judaism

Judaism is the oldest monotheistic religion, with a history spanning nearly 4,000 years. Jewish law emphasizes righteous, just behavior in all aspects of life. The Jews were the first people to declare belief in a single, all-powerful deity, and for a time, they ruled two kingdoms in the Middle East, Israel and Judah. (The word *Jewish* is derived from the Kingdom of Judah.) They recorded their ideas, laws, stories, and poems in a collection of scriptures called the Tanakh. The first five books of the Tanakh are called the Torah, and they contain the most important rules and rituals that Jews are expected to follow, including the Ten Commandments (Figure 35.4). The three main branches of Judaism today—Orthodox, Conservative, and Reform—are characterized partly by how strictly they interpret the Torah (Vajda, 2024).

FIGURE 35.4 The Torah is a sacred text that articulates the laws and rituals God expects Jews to follow. (credit: "Torah" by Lawrie Cate/ Flickr, CC BY 2.0)

Christianity

The history of Christianity begins approximately 2,000 years ago, with the birth of a Jewish man named Jesus. Jesus was a charismatic leader whose interpretations of scripture led some Jews to believe he was the Messiah, a legendary warrior-king prophesied to restore the Jewish kingdoms (The Editors of Encyclopedia Britannica, 2024). These beliefs threatened the Romans, who at the time ruled over much of the Middle East, and they killed Jesus through crucifixion (Figure 35.5). After Jesus's death, some of his followers came to believe he was the son of God and eventually formed a new religion around this belief.

FIGURE 35.5 The Romans crucified Jesus because they feared he would lead a revolt against their rule. Today, the crucifixion is one of the best-known symbols of Christianity. (credit: "Saint-Malo Stone Crucifix" by Nicolas Raymond/Flickr, CC BY 2.0)

The sacred text for Christians is the Bible, which includes the Old and New Testaments. The Old Testament contains many of the same books as the Jewish Tanakh, including the five that make up the Torah. The New Testament describes the life and teachings of Jesus and his early followers. Christians believe that through Jesus's death, their sins are forgiven. When they die, their spirits will live on with God.

Contemporary Christianity consists of several main branches. The two largest branches worldwide, Catholicism and Eastern Orthodox, developed out of the churches that took root in the western and eastern halves of the Roman Empire, respectively. Another branch, Protestantism, developed from criticisms of Catholicism and consists of many distinct denominations, including Anglican, Baptist, Lutheran, and Pentecostal. Each branch or denomination emphasizes different aspects of the Bible and may use slightly different versions of the text. The Church of Jesus Christ of Latter-Day Saints follows another sacred text, the Book of Mormon, in addition to the Bible. Members of the Church of Jesus Christ of Latter Day Saints typically abstain from alcohol, tobacco, and substances.

Jehovah's Witnesses are members of a Christian denomination that emphasizes the teachings of the Bible and the imminent establishment of God's Kingdom. They are known for their active evangelism (the practice of spreading or preaching the Christian gospel with the intent of converting individuals to the Christian faith), often going door-to-door to share their faith, and for their refusal to participate in activities that they believe are incompatible with their interpretation of Christianity, such as military service, voting in political elections, and celebrating holidays and birthdays. They adhere strictly to their interpretation of biblical teachings and maintain a strong sense of community and discipline within their congregations.

The Amish religion is another Christian denomination known for its simple living, plain dress, and reluctance to adopt many conveniences of modern technology. Originating from an Anabaptist movement in the sixteenth century, the Amish emphasize community, humility, and separation from the non-Amish world to maintain their religious values and way of life. They believe in adult baptism, pacifism (the belief that all forms of violence, including war, are unjustifiable and that disputes should be settled through peaceful means), and a literal interpretation of the Bible. The Amish are also known for their strong work ethic (which is often seen in their farming and craftsmanship) and their commitment to mutual aid within their communities. Worship services are typically held in homes and the church is governed by a set of rules called the Ordnung, which guides everyday behavior and ensures adherence to their religious principles.

Islam

Islam is the third major monotheistic religion to originate in the Middle East. It is based on the teachings of Muhammad, an Arabian man who lived in the sixth and seventh centuries CE (Sinai & Watt, 2024). Muhammad had visions of an angel who declared there is only one God, Allah, and that a righteous life requires complete submission to Allah's will. Followers of Islam, called Muslims, believe that Jesus, Moses, and the other major figures from the Jewish and Christian Bibles were prophets whose visions and teachings are incomplete. Muhammad is the final prophet, and Islam represents the completion of Allah's will.

Muslims worship in buildings called mosques (Figure 35.6). Their sacred text, the Qur'an, is believed to be the literal word of Allah, which the angel recited to Muhammad during his visions. The two main branches of Islam, Sunni and Shia, originated in a disagreement over who should lead the faith following the death of Muhammad. In practical life, Muslims are guided by five "pillars" of their faith: the belief that Allah is the only God and Muhammad is his prophet; the participation in daily prayer; the obligation to give alms to those in need; the obligation for healthy adults to fast during the holy month of Ramadan; and, if possible, the making of at least one pilgrimage to the holy city of Mecca.

FIGURE 35.6 Mosques are sacred spaces where Muslims worship. (credit: "Azadi Mosque (5730562789)" by David Stanley/Wikipedia, CC BY 2.0)

Hinduism

Hinduism may be the oldest surviving religion on Earth, developing out of ancient traditions and ideas that originated in what is now India (Soniger & Narayanan, 2024). Hinduism encompasses an unusually diverse set of beliefs and practices, with different people in different times and places representing the nature of the divine and its relationship to human life in a variety of ways. Generally, Hindus believe in a universal, essential reality called Brahman, which may manifest in numerous specific entities, including the major deities Vishnu, Shiva, and Brahma (Figure 35.7).

FIGURE 35.7 Hindu gods such as Shiva may appear in a wide variety of forms, which represent different aspects of their nature. (credit: "Shiva Statue Murdeshwara Temple" by "Nkodikal"/Wikipedia, CC BY 3.0)

Although there are Hindu temples, most Hindus observe religious rituals at home, and the rituals vary greatly among regions, villages, and individuals. The main sacred texts, collectively called the Vedas, were written in Sanskrit more than 3,000 years ago. They include poems and stories about various gods and heroes and articulate key principles such as dharma, a complex idea that includes a person's moral duties in the world. Hindus also generally believe in **karma**, the notion that one's future happiness is caused by present actions: actions performed with good intent lead to future happiness, whereas actions performed with bad intent lead to future unhappiness. Karma is often connected to **reincarnation**, the idea that a person's soul or spirit is reborn into a new body.

Buddhism

Another major religion that originated in the Indian subcontinent is Buddhism. According to legend, it was founded by Siddhartha Gautama, a Hindu prince who renounced his wealth and power and chose an itinerant, ascetic life after observing the poverty and suffering outside the palace (National Geographic, n.d.). However, he remained spiritually unfulfilled. At last, after meditating under a sacred fig, or bodhi, tree, he achieved a state of enlightenment called nirvana; the name *Buddha* means "enlightened one" (Figure 35.8).

FIGURE 35.8 Through deep meditation, the Buddha escaped earthly suffering and achieved enlightenment. (credit: "Four Scenes from the Life of the Buddha - Enlightenment - Kushan dynasty, late 2nd to early 3rd century AD, Gandhara, schist - Freer Gallery of Art - DSC05124" by "Daderot"/Wikipedia, CC0)

Following the Buddha's teachings, Buddhists strive to lead a moral life by accepting the four Noble Truths: life is suffering, suffering arises from attachment to desires, suffering ceases when attachment to desires ceases, and freedom from suffering is possible by following the Middle Way. The concept of the Middle Way is central to Buddhist thinking; it encourages people to live in the present, practice acceptance of others, and avoid both extreme self-indulgence and extreme self-denial. Reflecting their common origin, Buddhists also share some beliefs with Hindus, such as karma and reincarnation.

Sikhism

Sikhism is a monotheistic religion that began in the Punjab region of India in the fifteenth century (Fenech, 2014). The religion developed from the teachings of ten human gurus, each of whom is believed to have possessed the same soul, and their sacred text, the Guru Granth Sahib (Figure 35.9). These teachings proclaim the existence of one god, Waheguru, and emphasize equality for all and the importance of living a life of truth, honesty, and compassion.

Sikhism also strongly emphasizes community service; a fundamental concept of the religion is selfless service, or Seva (Sikh Missionary Society, n.d.). Another integral component is the Five Ks, which are symbols of devotion to the faith: Kesh (uncut hair), Kangha (a comb), Kara (a steel bracelet), Kachera (a cotton undergarment), and Kirpan (a sword) (The Sikh Coalition, 2018).

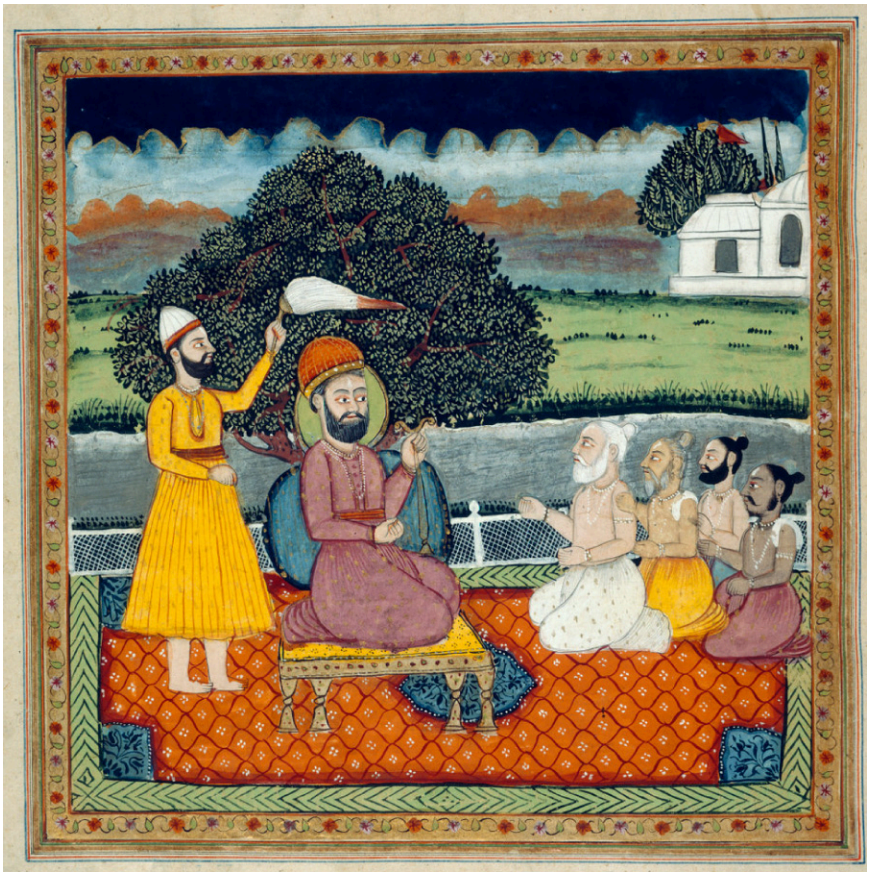

FIGURE 35.9 This illustration from a nineteenth-century text depicts the founder of Sikhism, Guru Nanak, debating Hindu holy men. (credit: "Detail of 'Guru Nanak, the founder of the Sikh religion, in dispute with Hindu holymen' from Rani Jindan's book" by Unknown author/ Wikimedia Commons, Public Domain)

African Religions

African religions encompass a diverse array of spiritual traditions, beliefs, and practices that are indigenous to the African continent. These traditions vary widely across different ethnic groups and regions but share common themes such as reverence for ancestors, connection to the natural world, and rituals for healing and community cohesion. The grouping of African religions as a category acknowledges the continent's rich religious diversity while recognizing commonalities and shared cultural elements among various traditions. This approach allows for a broader exploration of spiritual practices within the African context, highlighting themes and dynamics unique to the continent's religious landscape.

Some common themes in African spirituality include belief in a specific god or supreme being and the existence of a spiritual world that is closely connected to the physical world (Chakale & Marumo, 2018). Many African religions also incorporate aspects of monotheistic Abrahamic religions, primarily Christianity and Islam, both of which are prominent throughout the country (Pew Research Center, 2010; Pew Charitable Trusts 2016; U.S. Department of State, 2022). African spirituality also emphasizes community, harmony with nature, and divine healing and medicine, which is reflected by the traditions and practices—many of which are passed down orally (such as through song) instead of in writing.

In some African religions, communal worship is often characterized by vibrant ceremonies that bring together members of the community to honor deities, ancestors, and spiritual forces. These ceremonies can vary widely depending on the specific religious tradition but often involve rituals such as drumming, dancing, chanting, and offerings. The importance of ancestors is also central to many African spiritual practices and is featured in many celebrations and festivals (van Beek, 2020). For example, in the Yoruba tribe's religion, ceremonies such as the "Egungun" festival are held to honor ancestors, whereas in Vodou, rituals such as the "lave tèt" involve purification and communion with spirits (Daniels, 2016). Some African religions worship different gods depending on region and culture:

- In some religions of the Yoruba culture, Olorun is considered the supreme deity, the creator of the universe, and the source of all life. Orishas, on the other hand, are deities that serve as intermediaries between Olorun and humanity and represent different aspects of nature, such as Oshun (goddess of rivers and love), Shango (god of thunder and lightning), and Ogun (god of iron and war) (Indiana University, 2024).
- Some religions in the Igbo culture, Amadioha is a deity associated with thunder and lightning. He is considered a powerful and fearsome god who punishes wrongdoers and protects the innocent. Amadioha is often invoked for justice, protection, and guidance in times of trouble (Kanu, 2021).
- Anansi is a trickster god in Akan mythology, primarily worshiped by the Ashanti people of Ghana. Anansi, depicted as a spider and known for his cunning and cleverness, is a symbol of wisdom, creativity, and resourcefulness (Britannica, n.d.).
- Nyame is the supreme god in Akan mythology, worshiped by some of the Akan people of Ghana and the Ivory Coast. Nyame, associated with the sun and considered the creator of the universe, is often invoked for blessings, protection, and guidance in daily life (Oxford Reference, 2024).
- In Vodun or Voodoo traditions, Osun is a deity associated with fertility, love, and healing. She is often depicted as a river goddess and worshiped by devotees seeking blessings in matters of love, childbirth, and prosperity (Britannica, n.d.).

Indigenous American Spiritual Practices

Oral tradition through song and storytelling, honoring ancestors, and celebration of community are often key themes within Indigenous spirituality and central to the healing practices that are also part of the culture. The following are a few spiritual practices that nurses can familiarize themselves with related to American Indigenous communities (Smithsonian Institute, 2024; U.S. Forest Service, 2024; Centennial College, 2015):

- Connection to the land: Central to Indigenous American spiritual practices is a deep reverence for the land and the natural world. Many Indigenous traditions view Earth as a sacred and living entity, with spiritual beings inhabiting the land, waters, and skies. Spiritual practices often involve rituals and ceremonies conducted in natural settings, such as mountains, rivers, and forests, to honor and connect with the land and its spirits.
- Ceremonial rituals: Integral to some Indigenous American spiritual practices, ceremonial rituals serve as occasions for prayer, communion, and cultural expression. These rituals vary widely among Indigenous communities and may include sweat lodge ceremonies, vision quests, pipe ceremonies, sun dances, and powwows. Many traditions have rituals and ceremonies to mark important milestones and transitions in life, such as birth, puberty, marriage, and death. Seasonal ceremonies, such as harvest festivals and solstice celebrations, are common and serve to honor the changing seasons and give thanks for Earth's bounty.
- Ancestral veneration: Ancestor veneration includes traditions honoring and communing with the spirits of ancestors. Ancestors are guardians, guides, and sources of wisdom for the living, and rituals are performed to honor their memory and seek their blessings and guidance.
- Visionary and shamanic practices: Many Indigenous American spiritual traditions incorporate visionary and shamanic practices that involve altered states of consciousness, trance, and spiritual journeying. Medicine people, shamans, or healers play a central role in these practices, using rituals, chants, and herbal medicines to facilitate healing, divination, and communication with the spirit world.

East Asian Spiritual Practices

East Asian religions also contribute to the religious diversity in the United States, especially for nurses working in areas with significant East Asian immigrant populations. The following are a few of the East Asian religions, philosophies, and traditions that a nurse may encounter in the course of their practice:

- Confucianism: Founded in China, Confucianism emphasizes social harmony, respect for elders and authority, and ethical conduct. Confucianism is not a religion in the traditional sense but a system of philosophical and moral teachings founded by Confucius. (Britannica, n.d.) The principles of Confucianism are an important part of many East Asian cultures and can influence how people view life, illness, and death. Confucianism emphasizes family, especially respecting elders.
- Taoism (Daoism): Another Chinese philosophical and religious tradition, Taoism (Daoism) focuses on striving for balance in life and living in harmony with nature (BBC, n.d.). Holistic healing practices paired with traditional medicine may be the preference of Taoist patients. In Taoism, there is an emphasis on health, longevity, and healing, which often includes the use of herbal medicine, acupuncture, and **qigong** (a traditional

Chinese practice that integrates physical postures, breathing techniques, and focused intention).
- Shinto: Shinto, the indigenous religion of Japan, holds deep reverence for nature spirits and ancestors (kami) and balancing the physical and spiritual worlds. Shintoism emphasizes cleanliness and purification (Britannica, n.d.).
- Folk religions: Many folk religions throughout East Asia feature ancestor worship, animism, and deities specific to a region.

The Impact of Spiritual Beliefs on Health and Well-Being

Spiritual care is associated with better health and well-being for everyone. Spirituality significantly contributes to a person's overall sense of wellness and quality of life. These impacts include the following:

- Meaning and purpose: Spirituality provides a framework through which individuals interpret their experiences and find a sense of direction in life.
- Connection and relationships: Spirituality nurtures connection with others. Positive relationships and a sense of community contribute to well-being.
- Inner peace and resilience: Spiritual beliefs and practices can provide individuals with inner peace, comfort, and resilience in the face of challenges, including illness.
- Quality of life: Studies suggest that individuals who report a strong sense of spirituality often experience a higher quality of life (Borges et al., 2021).
- Coping mechanism: Spirituality can serve as a coping mechanism during times of stress, illness, or loss. It provides individuals with a source of strength and support.

Spiritual resources can help nurses overcome the emotional toll of caring for seriously ill and dying patients and prevent compassion fatigue and burnout. Provision 5 of the ANA Code of Ethics states, "The nurse owes the same duties to self as to others, including the responsibility to promote health and safety, preserve wholeness of character and integrity, maintain competence, and continue personal and professional growth" (ANA, 2015). A desire to help others in need is an important part of spirituality.

LINK TO LEARNING

Michaela, a nursing student, is also a patient undergoing chemotherapy. In this video, she discusses how her spiritual journey has helped (https://openstax.org/r/77spiritual) in her recovery.

Patient-Centered Care

Integrating a patient's spirituality into care aligns closely with the principles of patient-centered care (PCC), which prioritizes the individual's preferences, values, and unique needs. By recognizing and incorporating a patient's spiritual beliefs and practices into their care plan, nurses demonstrate a commitment to honoring the patient's holistic well-being and promoting a sense of connection and engagement (see Chapter 6 Promoting Individualized Care for more about patient-centered care).

Moreover, integrating spiritual participation into the care plan reflects a proactive approach to addressing the patient's holistic health needs beyond just the physical aspects of their condition. People who hold spiritual beliefs and participate in a community, such as religious service attendance, are associated with positive health outcomes, including greater longevity and reduced depression, suicide, and substance use (Chen et al., 2020). By recognizing the value of spiritual participation in promoting overall well-being, nurses demonstrate a commitment to providing comprehensive, patient-centered care that addresses the patient's spiritual, emotional, and social needs.

Spiritual Healing

Nursing care has progressed significantly toward adopting a **holistic care model**, which views humans as biological, social, psychological, and spiritual beings and emphasizes the importance of considering all these dimensions in the care process. It is important to recognize how the spiritual dimension is integral to a patient's overall well-being and health (Forough Rafii, 2020). In times of crisis and illness, one's spirituality often becomes prominent and spiritual needs more evident. Patients frequently turn to spiritual coping strategies during the illness process, with spiritual healing and prayer being among the most widely utilized spiritual sources of comfort.

Spiritual healing is considered a form of alternative and complementary medicine and involves purposeful interventions by individuals to improve the conditions of others. Evidence suggests a rising global trend in the use of **spiritual healing**, with more than 64.1 percent of Americans incorporating prayer and spiritual healing (Forough Rafii, 2020). This process generally entails two components: the recipient, someone with a physical or mental illness, and the **healer**, an individual using faith and prayer to facilitate healing. Healers, performing nonmedical treatment either hands-on or from a distance, are involved in spiritual healing through prayer. For some patients with refractory diseases who have not found relief from conventional medical interventions, healing prayer has been explored as a possible therapeutic tool (Forough Rafii et al., 2020).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Balancing Spiritual Needs and Safety

The nurse is an advocate for patient safety, and there may be times when a patient's spiritual beliefs could bring them harm. In these complex situations, the nurse will need the skills to navigate a compassionate conversation with the patient and their family and address the challenge that the balance of spiritual needs and safety presents.

Although some patients with refractory diseases (diseases or conditions that do not respond to standard treatments or therapies) may explore spiritual healing as an option when conventional medical interventions have failed to provide relief (Forough Rafii, 2020), it is important to be aware of risks and limitations—including for exploitation.

Patients who are afraid, ill, and in pain are often targeted by people who are touting "spiritual healing," "miracles," and "cures" only with the intention of monetary gain. Such scams are exploitative and harmful to patients and their families. Although the presentations of these scams may have similarities to the legitimate spiritual practices previously described, they are usually designed to appeal to patients with the ultimate goal of exploiting their need, desperation, fear, or hopelessness.

Healthcare providers, including nurses, must be aware of the potential risk and help patients access reputable resources and encourage them to be wary of any person, product, or service that makes promises or claims related to health and wellness—particularly when money is involved (National Consumers League, 2017).

There may also be less overt situations where spiritual healing offers a patient some relief or comfort, even if it's more of a "placebo effect" than clinically measurable improvement. Although these situations may not harm a patient directly, they may become risky if patients are drawn away from the traditional medical care prescribed or recommended for them or if the practices interfere with evidence-based treatments (Cundiff-O'Sullivan et al., 2023).

Nurses should be prepared to discuss a patient's spiritual healing preferences, and determine whether a patient is being placed at risk, and intervene, if necessary, to prevent harm.

Developing knowledge and skills related to patients' spiritual care is essential for effective communication, trust, and empathy in nursing practice. Nurses not only address the varied spiritual needs of their patients but also meet those needs while also balancing their own beliefs—which may, at times, be at odds with those held by the patients they treat.

Spiritual Practices

Just as the beliefs and values that define an individual's spirituality vary, so will the activities that help them feel connected to their spiritual life. Spiritual practices that are commonly acknowledged and respected in the nursing profession include the following:

- Prayer and meditation: Many individuals find solace and connection through prayer or meditation. Nurses can support patients in their spiritual practice by providing a quiet and peaceful environment, respecting designated prayer times, and allowing patients the privacy to engage in their spiritual rituals.
- Mindfulness and presence: It can be spiritually enriching to practice mindfulness by being present in the moment and aware of one's thoughts, feelings, and environment. Nurses can guide patients in simple mindfulness exercises, such as focused breathing or mindful walking, to promote a sense of calm and centeredness.

- Sacred rituals and ceremonies: A ritual is a defined practice that individuals or groups use to commemorate or cope with something, such as birth, death, healing, or another life transition. A ceremony is a public and formal celebration or gathering that honors or commemorates something. Nurses can support patients by respecting and facilitating their rituals and ceremonies, when possible, to ensure cultural sensitivity and inclusivity.
- Connection with nature: For some individuals, connecting with nature is a profound spiritual practice. Nurses can facilitate this by arranging access to natural settings, such as gardens or outdoor spaces for patients.
- Pastoral care and spiritual counseling: Many healthcare settings have **pastoral care services**, or spiritual counselors, (individuals who support patients in exploring and expressing their spiritual needs). Nurses can collaborate with these professionals to ensure patients receive spiritual guidance and counseling tailored to their beliefs.

Incorporating these practices into patient care demonstrates a commitment to addressing the spiritual dimension of health and well-being, and nurses should approach these discussions with sensitivity, respect, and a nonjudgmental attitude.

Self Care Behaviors

Nurses are regularly exposed to human pain and suffering, which has physiological, psychological, and spiritual dimensions. Despite dedication to patient care, nurses often neglect their own physical, spiritual, and social needs, subconsciously overlooking their own needs as being a necessary aspect of professionalism. As nurses provide care involving death and dying, maintaining spiritual health is crucial for emotional and physical well-being. Studies indicate that some nurses may use religious beliefs to cope with patient deaths, emphasizing the importance of spirituality in healthcare settings (Greene, 2020). Nurses can also face moral distress and secondary traumatic stress, putting them at risk of burnout. Awareness of spiritual health is necessary for processing moral distress and preventing burnout (Table 35.1).

Pillar of Self-Care	What It Means	Examples
Physical	Take care of your body.	Moving your body (walk, dance, stretch), eating nutritious foods, getting enough quality sleep
Emotional	Manage your feelings.	Journaling, deep breathing, meditation, therapy
Mental	Keep your mind active.	Reading, learning, doing puzzles
Spiritual	Find meaning and connection.	Praying, meditating, spending time in nature
Environmental	Take care of your space.	Going outside, keeping your home clean
Social	Stay connected with others.	Spending time with loved ones, joining a club, volunteering
Recreational	Do things you enjoy.	Listening to music, playing a sport, doing something creative

TABLE 35.1 Pillars of Self-Care

Spiritual health enhances self-awareness and self-care, acting as a shield against compassion fatigue, secondary trauma, and burnout (Ibrahim et al., 2020). Nurses can tend to spiritual health needs through conscious self-care planning, incorporating practices such as **remembrance and renewal (R & R)**—a practice that involves reflecting on the past while simultaneously revitalizing or rejuvenating oneself for the future—to process loss and grief through

reflection and strategies that promote growth.

CULTURAL CONTEXT

Cultural Perspectives on Self-Care

Cultural factors significantly influence self-care behaviors, shaping individuals' approaches to health and well-being. Cultural norms, beliefs, and practices play a pivotal role in determining the choices people make in caring for themselves. For instance, dietary habits can be deeply rooted in cultural traditions, influencing what individuals eat and how they view nutrition. Similarly, attitudes toward mental health, physical activity, and preventive healthcare measures are often shaped by cultural perspectives. The importance placed on communal and family support also varies across cultures, impacting the reliance on social networks for well-being. Additionally, cultural perceptions of health encompass physical and mental, emotional, and spiritual dimensions. Rituals and traditions further contribute to self-care, as practices related to food, exercise, spirituality, and holistic health are often intertwined with cultural identity. Recognizing and respecting these cultural nuances is essential for designing effective and inclusive self-care strategies that resonate with diverse populations.

Source of Comfort

Meeting the spiritual needs of individuals involves recognizing the diverse ways they seek fulfillment, a dynamic process influenced by personal values and changing priorities. These methods often include spending meaningful time with loved ones, immersing oneself in nature, pursuing enjoyable hobbies, and engaging in religious practices such as prayer or attending services.

For patients with terminal illness, palliative care extends beyond the physical realm to encompass spiritual well-being. A diagnosis of a terminal illness often triggers shifts in spiritual needs, prompting individuals to address broken relationships, grapple with unresolved issues, and contemplate the deeper meanings of life and death. The holistic approach of palliative care acknowledges the interconnectedness of spiritual, physical, social, and emotional needs, ensuring comprehensive support for individuals and their families. Understanding the evolving nature of spiritual needs is crucial in promoting overall well-being for those navigating the complexities of terminal illnesses.

Source of Conflict

When assessing sources of spiritual conflict or distress, nurses often are entrusted with information that may otherwise go undetected or recognized. Whether patients have acute, chronic, or terminal illnesses, they are often in situations that can cause spiritual distress. Asking questions about relationships, loss, fears, and conflict is important. Such information can reveal information including the following:

- Relationships: Feeling like they no longer have a role in their family, losing the ability to be a supportive person in the lives of loved ones, and experiencing loneliness.
- Loss of independence: Losing sense of personal identity, concerns about becoming a "burden" on loved ones.
- Fear of dying: Worry about what dying will be like, questioning what will happen after death.
- Loss of control: Struggling with a lack of control over physical and mental health, feeling like they no longer have agency in life, feeling like the future is out of their hands.
- Loss of purpose: Struggling to see the point of life, unable to find meaning in life.

It is important for nurses to include the patient's family and caregivers in the assessment, as they may also be experiencing spiritual distress as well. A patient's family needs to be included in the care plan to ensure a holistic approach to spiritual health and overall healing.

PATIENT CONVERSATIONS

Searching for Meaning

Nurse: Good morning, Mrs. Spiegel. How are you feeling today?

Patient: Oh, I'm still alive.

Nurse: You sure are! How is your pain?

Patient: Well, not much better than last night but . . . [tearfully] I feel such an ache in my chest and my throat. And I don't think it's from the treatment. Or the cancer. At least, not physically.

Nurse: It sounds like you're feeling a different kind of hurt—the emotional kind?

Patient: [nods, then starts to cry] Why did this happen to me?

Nurse: You aren't alone in asking that question. Is there any particular reason you're thinking about it this morning?

Patient: Oh, I don't know. I just lay awake all last night listening to these beeping machines and wishing I was home in my own bed, with my husband and my dog. I was trying to figure out where I went wrong—or what I did wrong.

Nurse: About the cancer, you mean?

Patient: Maybe it's silly but . . . [trails off and reaches for a tissue]

Nurse: It's not silly, it's how you feel. And it matters.

Patient: I never smoked or drank; I never did drugs. I ate right and exercised . . . sometimes. I always tried to be a good neighbor, a good wife, and a good mother. I volunteer, I donate money, I try to never say a bad word about anyone . . . now I wasn't perfect or a saint, not by a long shot. But I did all the things I thought I was supposed to do and I just don't understand why I'm getting punished.

Nurse: You feel like the cancer is a punishment?

Patient: Well, it sure feels like it.

Nurse: What you're feeling and thinking right now is very painful, but I want you to know that you're not alone. I have talked with patients, even in the same bed you're in, who have asked themselves the same question. And I don't have any answers, but I can listen and help you figure out what kind of support you'd like to have as you process this experience. It's a very personal journey, so what's helped someone else might not be what you need. But I'm here, and I'm ready and willing to help you figure it out.

Patient: Do people usually blame God?

Nurse: Not always. Do you blame God?

Patient: No, no. I guess I blame myself. I don't want to believe that God is anything but merciful.

Nurse: Is your spirituality an important part of your life?

Patient: I believe in God, yes. I haven't been to church since I got diagnosed though . . . just have felt so tired. I stopped praying because . . . well, I guess I don't know what to say.

Nurse: Well, let's talk more about what we can do to make sure you're feeling that connection and comfort.

Scenario follow-up: The nurse has opened the door for a compassionate, supportive conversation with the patient about their spiritual needs. The nurse actively listens and uses thoughtful, open-ended questions to guide the patient through their thoughts and help them better understand their needs. From this conversation, the nurse gathered the information needed to make a plan for incorporating spiritual needs into the patient's care.

35.2 Applications of Spirituality to Health Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify factors that affect a patient's spirituality
- Identify considerations for providing patient-centered care
- Recognize guidelines for providing competent nursing care

In exploring the intricacies of spirituality in health care, nursing professionals must understand the factors that

influence a patient's spiritual well-being. These factors extend beyond religious affiliations and include cultural background, personal experiences, and belief systems. By understanding these influences, nurses can better tailor their approach to spiritual care by laying the foundation for a holistic and patient-centered approach and fostering an environment that respects and acknowledges the unique aspects of each patient's spiritual journey. The purpose of spiritual care in nursing is to assess, diagnose, and respond to the spiritual needs of each individual patient. Nurses should be adept at conducting spiritual assessments, distinguishing between religious and spiritual needs, and identifying appropriate interventions.

Factors Affecting Spirituality

Nurses must approach each patient with a sense of openness and respectful curiosity to understand how spiritual factors will affect overall health. Recognizing and understanding the role these factors play in a patient's daily life when they are well is necessary to develop care plans that treat the patient holistically (O'Brien, 2022).

- Cultural background: Cultural diversity plays an important role in shaping an individual's spiritual beliefs and practices. Patients from different cultural backgrounds may adhere to distinct religious traditions, rituals, and spiritual perspectives. Understanding and respecting cultural nuances is essential for delivering culturally competent care.
- Religious affiliation: An individual's religious beliefs—or lack thereof—influence their broader sense of spirituality. Patients may identify with specific religions, carrying their own practices, doctrines, and values. Conversely, some individuals may be nonreligious or identify as atheist, shaping their spiritual outlook in a secular context. Patients who identify as agnostic may have less well-defined spiritual beliefs than patients who follow a specific religion, but that does not necessarily mean spirituality can be left out of their care planning.
- Personal experiences: Life events, such as trauma, loss, or significant milestones, can influence spirituality. Positive or negative experiences may lead individuals to question or strengthen their spiritual beliefs. Nurses need to be sensitive to these life events and their potential impact on a patient's spiritual well-being.
- Belief systems: Beyond organized religion, individuals often have personal belief systems that shape their spirituality. This may include philosophical views, ethical and moral principles, or a sense of connection to nature. Understanding these belief systems helps nurses tailor spiritual care to better align with a patient's unique perspectives.
- Health status and illness: Health challenges and illness can evoke profound spiritual reflections. Patients facing serious health issues may seek solace, meaning, or hope through their spiritual beliefs. Conversely, illness may lead to questioning or reevaluation of one's spiritual framework.
- Family and community influence: Family upbringing and community environments contribute to an individual's spiritual foundation. Family traditions, religious practices, and community support systems all help shape spiritual perspectives. Considering these influences is essential for providing holistic care.
- Interpersonal relationships: The quality and nature of relationships, both within the family and broader social circles, can impact spirituality. Supportive relationships may strengthen one's faith or spiritual connection, whereas strained relationships could lead to spiritual distress.
- End-of-life concerns: Spirituality often becomes more pronounced during end-of-life decisions. Patients facing terminal illnesses may engage in spiritual reflections, seeking comfort, meaning, or reconciliation. Addressing these concerns with sensitivity is crucial in end-of-life care.

Developmental Considerations

Patients of different ages and stages of life approach spirituality uniquely, influenced by various developmental considerations. Individuals may have distinct spiritual needs and expressions based on their life stage and personal development. For example, children and adolescents often form beliefs by absorbing those from family members and their communities. As they grow, their spirituality evolves as they question these beliefs more independently. Nurses can support their young patients' explorations by providing an open environment for them to express their own thoughts and feelings.

As patients age, more exploration solidifies their spiritual identity. Although some may distance themselves from their childhood beliefs and choose to forge a more personal connection to spirituality, others will build on the foundation laid in childhood. Most young adults, however, will experience some form of spiritual distress or confusion due to major life transitions such as entering the workforce or traumatic events. By mid-adulthood,

spiritual beliefs are typically integrated into overall worldviews. Patients may seek spiritual meaning in their relationships, work, and contributions to society. Spiritual beliefs may serve as coping mechanisms during midlife challenges, such as career changes, empty nesting, or emerging or worsening health concerns.

Older adults may engage in spiritual reflection, contemplating the meaning of life and legacy. Existential concerns and thoughts about mortality may become more prominent. During this stage in life, patients may find solace in cultural or religious traditions. Respecting and incorporating these traditions into care is essential for spiritual well-being at all stages of life.

Life Events

Encountering stressful life events can challenge the spiritual and religious aspects of a patient's being, leading to spiritual distress. Distress can contribute to struggles such as spiritual disorientation, tension, and strain. Without proper guidance, the response to stressful events may contribute to negative outcomes such as increased distress and feelings of depression.

Traumatic life events can be devastating to an individual or the familial and community system as a whole. Interpersonal and intrapersonal struggles can cause separation within a family in addition to individual spiritual distress. Divine struggles, including spiritual discontent (feelings of discomfort or dissatisfaction with one's faith), reappraisal of God's powers (questioning a divine entity's power), and God's punishing reappraisal (believing that a negative circumstance in one's life is a punishment from a divine source) signify a disruption in beliefs about the order, predictability, and benevolence in the universe. Likewise, challenges to goals such as connection with a higher power and the associated experiences of intimacy and security are often tested and disrupted when the patient experiences adverse events in life.

Family

Family and community dynamics profoundly affect an individual's spiritual foundation, influencing their beliefs, values, and practices. Familial upbringing, in particular, serves as a primary source for developing one's spiritual identity. Family traditions, religious practices, and the overall atmosphere within the household significantly contribute to shaping an individual's spiritual perspectives from an early age. Regular attendance at religious services, participation in family rituals, and exposure to specific cultural or religious practices create a framework for understanding the sacred and the transcendent.

Likewise, the community in which an individual is immersed also plays a crucial role in shaping spiritual beliefs. Communities often provide a broader context for shared practices, beliefs, and support systems. Local religious institutions, community gatherings, and cultural events further contribute to the multifaceted nature of spiritual development. The diverse array of experiences within a community can expose individuals to different spiritual traditions and perspectives, fostering an understanding and appreciation for a diverse range of belief systems.

Recognizing the profound influence of family and community on spiritual perspectives is vital for healthcare providers. To deliver holistic care, the nurse must understand the patient's background and the influences that have shaped their spirituality. Sensitivity to diverse cultural and religious practices within families and communities is crucial for providing culturally aware and patient-centered care (PCC). Nurses must also be attuned to the potential conflicts between individual and familial beliefs. Open communication with patients and their families can help uncover specific spiritual needs, preferences, or concerns that may impact the patient's well-being and recovery. By considering family and community influences on spirituality, nurses can foster a more inclusive and culturally competent approach to patient care, promoting physical health and addressing the emotional and spiritual dimensions of the individual, all within the context of their broader support networks.

Ethnic Background

A foundational element for identity, meaning, and community among individuals is **ethnicity**. Ethnicity refers to the cultural, social, and ancestral characteristics that define a group of people sharing common historical roots, language, traditions, and often geographical origins. Understanding the intricate connections between ethnicity and these fundamental aspects is crucial for nurses. Although the foundational theory of ethnicity suggests that racial and ethnic differences are deeply ingrained in society and have historically delineated lines of intergroup conflict, the consensus recognizes that ethnicity undeniably provides people with essential elements of meaning, identity, and community (Pew Research, 2008). It is important for nurses to keep in mind that patients will often have complex feelings about their identities, and it is rarely binary (that is, where it's all positive or all negative).

For nurses, recognizing that ethnicity is more than just a demographic descriptor is key to understanding their patients from a whole-person perspective. Ethnicity encompasses shared cultural identity, language, and origin, forming the basis of a group with a collective heritage and sense of community. Like religion, ethnicity fulfills a crucial role in cohesion, acting as a powerful social glue.

Ethnicity and religion are deeply interconnected aspects of human identity, influencing individuals' beliefs, behaviors, and social interactions. At the core of this connection lies cultural heritage, as religious traditions are often passed down through generations within ethnic communities. For many individuals, ethnicity and religion are intertwined components of their cultural identity, shaping their sense of self and worldview. This connection is further reinforced by the role of religion as a unifying force within ethnic communities, providing a sense of belonging, shared values, and social cohesion. Moreover, ethnicity and religion influence individuals' social norms, practices, and behaviors in various aspects of life, including family dynamics, education, dietary habits, and healthcare decisions. Understanding the intertwined nature of ethnicity and religion is crucial for promoting cultural competence, fostering inclusive practices, and building bridges of understanding within diverse communities.

Culture

The intersection of culture and spirituality is a complex aspect of human identity that significantly influences an individual's beliefs, rituals, and expressions of spirituality. Cultural background helps shape the lens through which individuals perceive and engage with the spiritual dimension of life. Patients from diverse cultural backgrounds bring religious traditions, customs, and spiritual perspectives that are deeply embedded in their heritage.

Religious traditions are often intertwined with cultural practices, creating a unique fusion that shapes an individual's spiritual identity. For example, certain cultural ceremonies, festivals, or rites of passage may have inherent spiritual or religious significance, providing a framework for understanding the sacred aspects of one's cultural environment. The dynamics of family structures, societal norms, and community expectations within a specific culture further influence how individuals conceptualize and express their spirituality.

Nurses must recognize and respect cultural nuances to deliver effective and patient-centered care. Understanding the diverse religious traditions and spiritual practices that patients may follow is necessary for promoting inclusivity and cultural competence. Sensitivity to cultural diversity ensures nurses can navigate conversations about spirituality with cultural humility, avoiding assumptions or stereotypes. Moreover, recognizing the influence of culture on spirituality contributes to a more holistic approach to health care. Culturally competent care extends beyond tolerance of cultural differences; it involves active efforts to incorporate cultural considerations into care plans, creating a space where diverse spiritual beliefs are valued and integrated into the overall healthcare experience.

Formal Religion

Religious affiliation is often a cornerstone of spirituality in patient care. Patients may draw profound spiritual strength and meaning from their religious beliefs. Many religions provide comprehensive frameworks that include moral guidelines, rituals, and a sense of community. Nurses need to be attuned to and respectful of patients' diverse religious affiliations and be willing to learn about the unique practices, doctrines, and values associated with each faith tradition. A **congregation** (group of people who worship together) plays a vital role in providing spiritual support and essential social services. In nursing practice, being aware of the various services offered by congregations, such as counseling and assistance finding child care, schooling, and employment, is essential for planning care.

For patients who identify with a specific religion, nurses should strive to meaningfully integrate these beliefs into the care plan. This may involve facilitating access to religious leaders for spiritual guidance, arranging for religious rituals or sacraments, and respecting dietary restrictions or observances associated with their faith. The alignment of healthcare practices with religious beliefs contributes to a more patient-centered and culturally competent approach because it recognizes the integral role that religion plays in shaping an individual's spiritual identity.

Considerations for Patient-Centered Spiritual Care

When providing spiritual care, the nurse must not impose their religious or spiritual beliefs on patients. There are several guidelines for therapeutically implementing nursing interventions to support patients' spirituality:

- Take cues from the patient: When bringing up spiritual health with patients, understand it may be a difficult

topic for them to discuss. Let them lead the conversation. Do not press further than they want to share.

- Be aware of nonverbal cues: Patients may be saying one thing, but their body language is saying something different. Gently point out the contradiction and seek clarification. For example, a patient may state that they do not blame God for their illness but begin to tear up as they say it. By responding, "I noticed you became tearful when you said that . . . what is causing these feelings to come up for you?" a door is opened for them to share more of their thoughts and feelings.
- Ask the patient how you can support them spiritually: Ask patients what they need to feel supported in their faith and try to accommodate their requests, if possible. For example, perhaps they would like to speak to their clergy, spend some quiet time in meditation or prayer without interruption, or go to the onsite chapel. Explain that spiritual health helps the healing process. Many agencies have chaplains onsite that offer patients a spiritual resource.
- Support patients within their faith tradition: Patients may feel they must "do as the nurse says" when under their care. With this power dynamic in mind, it is not appropriate for the nurse to persuade a patient toward a preferred religion or belief system. The role of the nurse is to respect and support the patient's values and beliefs, not promote their own values and beliefs.
- Listen to a patient's fears and concerns without adding your own stories: It is easy for the nurse to start adding personal examples from their own life. Although this may seem helpful or even empathetic, it is more often only distracting and shifts the focus away from the patient. The main event is the patient's fears and concerns, not the nurse's. Name and validate the emotions that are heard from the patient. Sometimes, patients don't realize what they are feeling until it is kindly and tactfully pointed out to them.
- Pray with a patient if requested (or provide someone who will): Some nurses may feel reluctant to pray with patients when they are asked. They may feel underprepared, uncomfortable, or unsure if they are "allowed to." Nurses are encouraged to pray with their patients to support their spiritual health, as long as the focus is on the patient's preferences and beliefs, not the nurse's. Having a short, simple prayer ready that is appropriate for any faith may help in this situation. If a nurse does not feel comfortable praying, the chaplain should be requested to participate in prayer with the patient.
- Share an encouraging thought or word: A scripture verse (based on patient preferences) or an inspirational poem may be helpful to share during difficult times. Having a few verses or thoughts readily available can be helpful during critical moments (Nourian, 2018).
- Use presence and touch: Sometimes, just the presence of a nurse is spiritually comforting for patients. Words are not always needed. It can be very comforting to know that someone will be sitting quietly next to them as they fall asleep or are in pain. Touch can also be a very powerful therapeutic tool to provide comfort (after asking permission of the patient) (Nourian, 2018).

REAL RN STORIES

Focusing on the Moment

Nurse: Maria, BSN
Clinical setting: Emergency department
Years in practice: 25
Facility location: A prestigious teaching hospital in a major city

Over the years, I've gotten a lot better at compartmentalizing my own spiritual beliefs so that I can focus on my patients, even when what they believe is completely at odds with what I do. But I still remember the first patient I had where I really struggled with respecting their beliefs in a crisis.

The patient was a young man, early 20s, who had been in a car accident. He was brought in by ambulance, and his wife, who was pregnant and about to deliver any day, had followed in her car. She was inconsolable, and we were having a hard time keeping her out of the trauma bay. The patient was actively seizing when EMS arrived, and his injuries were clearly severe. You couldn't really make out what his face looked like between all the swelling and blood. His left arm was deformed from a fracture. The ER doctor was calling out orders as we tried to stabilize him, and from out in the hallway we heard his wife screaming, "Don't give him any blood, don't give him blood, please!"

Another nurse, who was my mentor at the time, came rushing in and just said, very calmly, "Patient is a Jehovah's Witness." The air in the room changed at that point. The frenzy sort of paused, and it was like everyone was trying to shift gears. I looked at her and she must have seen the confusion in my blank stare. She took me aside and quietly explained that due to his religious beliefs, the patient would not accept blood products. I remember just sort of blurting out, probably too loudly, loud enough that his wife in the hall probably heard me, "But he's going to bleed out, he's going to die." And the nurse didn't miss a beat, she just said, "We have to respect his beliefs. Accepting a blood transfusion can get someone excommunicated from the church. It's a very big deal."

I tried to wrap my head around what she was saying, but I just kept thinking about how young he was and his wife was about to have a baby. I felt angry, to be honest—confused and angry. The nurse picked up on this and told me to "go take a minute," which I knew meant "get it together" but I wasn't even sure where to start. I had a lot of questions but didn't know how to ask them.

After that, I read as much as I could about Jehovah's Witnesses, and then other religions and belief systems that were different from mine. I tried to make sure that I understood where people were coming from with their beliefs, and when I had patients who believed something different from me, I tried to think back to what I'd read. It's hard to think about in the moment, but it's gotten easier with time and experience. I find I can more easily put different beliefs in perspective and keep the patient at the center.

Beliefs Regarding Healthcare Practices

The individualized nature of spiritual needs, combined with the complex dynamics between patients and healthcare professionals, places the responsibility on nurses and providers to seamlessly incorporate spiritual care into health care. Nurses should feel empowered to seek more information about spiritual practices, particularly those of the communities they serve. If a patient has a spiritual belief, value, or practice that conflicts with a treatment plan, the nurse should explain the rationale for the intervention or treatment. If the patient is not willing to complete the treatment as planned due to their spiritual or religious beliefs, the nurse should attempt to negotiate the treatment plan with the patient and/or healthcare provider. For example, a nurse can advocate for rescheduling a procedure after the Sabbath or modifying the dietary plan and medication administration times during Ramadan. Nurses should support patients' preferences when implementing interventions to support their spiritual well-being. The nurse should respect and listen to the patient's expression of beliefs. Spiritual or religious practices should be accommodated if they are safe and feasible. The following list of healthcare considerations is not intended to be exhaustive—rather, it can offer some insights into situations a nurse may encounter. The nurse should identify resources in their community that may help them provide spiritually-aware and patient-centered care (PCC).

- Judaism
  - Jewish religious laws involve a complex set of restrictions that can affect medical decisions. Patients or family members may request to speak with a rabbi to determine the moral propriety of a particular decision. Exceptions are often made when an action is understood in terms of saving a life, such as emergency surgery or organ donation during the Sabbath. The value of saving a life is held in extremely high regard in Jewish tradition.
- Catholicism
  - Patients may have moral questions about treatment decisions, such as the withholding/withdrawing of life-sustaining treatment. A priest can offer guidance for patients in these situations.
- Jehovah's Witness
  - A defining tenant is a strict prohibition against receiving blood (i.e., red blood cells, white blood cells, platelets, or plasma) by transfusion (even the transfusion of a patient's own stored blood), in medication using blood products, or in food—even in life-threatening situations. It is very common for adults to carry a card at all times stating religiously based directives for treatment without blood. Some blood fractions (such as albumin, immunoglobulin, and hemophiliac preparations) are allowed, but patients are guided by their own conscience when making these healthcare decisions.
  - Organ donation and transplantation are allowed, but patients are guided by their own conscience.
- Amish
  - Although the Amish do not reject modern medicine outright, they often prefer natural and home remedies, turning to professional medical care when necessary.
  - Medical expenses are typically covered by the community, not insurance. The Amish practice mutual aid,

where the community helps with healthcare costs.

- Islam
  - Muslim patients may express strong concerns about modesty and may avoid eye contact as a function of modesty and oppose being treated by a provider of a different gender.
  - A Muslim female may need to completely cover her body and should always be given time and opportunity to do so before any person enters her room. Women may also request that a family member be present during an exam and may desire to remain clothed during an exam, if possible.
  - There should be no casual physical contact by nonfamily members of the opposite sex (such as shaking hands).
  - The act of washing may require running water, either from a tap or poured from a pitcher. As a result, Muslim patients typically do not feel truly cleaned by a sponge bath. Many Muslims wash with running water before and after meals, as well as before prayers.
  - Muslim patients may react to suffering with emotional reserve and hesitate to express the need for pain management. Some patients may refuse pain medication if they understand the experience of their pain to be spiritually enriching.
- Hinduism
  - Hindu patients may express strong, culturally based concerns about modesty, especially regarding treatment by someone of the opposite sex. Genital and urinary symptoms or conditions are often not discussed with someone of a different gender present.
  - The act of washing is generally conceived as requiring running water, either from a tap or poured from a pitcher. A patient may desire to wash their hands after meals.
  - For many Hindu patients, there is a cultural norm to use the right hand for “clean” tasks such as eating (often without utensils) and their left hand for “unclean” tasks such as toileting. Medical and nursing staff should consider this right-left significance before hindering a patient’s hand or arm movement. Discuss handed preferences with the patient.
  - Patients may wear jewelry or adornments that have strong cultural and religious meaning, and staff should not remove these items without discussing it with the patient or family.
- Buddhism
  - The importance of mindful awareness may affect patients’ or family members’ decisions about using pain medications, often out of worry that analgesics may cloud one’s awareness. Nonpharmacological pain management options are often more accepted.
  - Some Buddhists may express strong, culturally based concerns about modesty (e.g., regarding treatment by someone of the opposite sex).
- East Asian and Chinese religions
  - Many East Asians, particularly in Chinese cultures, use traditional Chinese medicine (TCM), which includes acupuncture, herbal medicine, tai chi, and qigong. TCM focuses on balancing the body's energy (qi) and maintaining harmony between yin and yang.
  - Health practices often incorporate a holistic approach that includes modern medical treatments and traditional methods, emphasizing prevention and overall well-being.

Vaccines

Some patients may refuse vaccines, either for themselves or their children, due to their religious beliefs. Religious exemption may be cited by individuals of many denominations, though very few organized religions have specific prohibitions against vaccines. In some cases, people of a certain faith may believe their religion prohibits vaccines, when even their leaders indicate that no such prohibition exists; individual beliefs need to be respected, but this situation creates the need for strong community-based programs. Some smaller groups, such as Dutch Reformed Church and faith-healing denominations, do specifically object to immunizations. However, individuals within the faith may still accept vaccination.

It's also important for the nurse to be aware that patients of certain faiths may have concerns about vaccines due to the ingredients, as they would with medications that may contain ingredients that would be at odds with their dietary practices. However, many religious organizations—such as the Islamic Organization for Medical Sciences—have made statements to those of the faith about the use of certain ingredients in vaccines and take the stance that they are acceptable.

Beliefs Regarding Death and Dying

Although the nurse will want to understand specific religious and spiritual beliefs about death, it's also important to remember that each patient will have their own ideas and feelings about what happens when they die, as well as what may come after. The nurse should also be aware that a patient's beliefs may change. A life-changing or life-threatening illness or injury can make people feel more drawn to believing in a higher power when they haven't before, particularly if they seek the comfort that worship seems to bring to others. But it may also "shake the faith" or instill doubt in a person who has been devout and may even lead to a spiritual crisis. The changes are not always profound; they may be subtle and gradual. Therefore, it's important for the nurse to monitor a patient's spiritual well-being as much as their physical and mental well-being. Nurses can and should tailor their approach to each patient, but the following are a few examples of situations they may encounter:

- Judaism
  - Questions about the withholding or withdrawing of life-sustaining therapy are deeply debated within Judaism. Some may be strongly opposed, whereas others may be more open to it. Family members often wish to consult with a rabbi about the specific circumstances and decisions regarding end-of-life care.
  - After a patient has died, Jewish tradition directs that burial happen quickly and that there be no autopsy (unless the autopsy is deemed necessary by a mandate from a medical examiner). The family may request that a member or representative constantly accompany the body in the hospital and even to the morgue (where the person may sit outside any restricted area yet remain relatively close to the body) to say prayers and read psalms.
  - Amputated limbs may be requested for burial. Details should be arranged through the patient's/family's funeral home.
- Catholicism, Eastern Orthodox, Lutheran, and some other Christian denominations
  - If a patient is near death, there may be an urgent request for a priest or minister to offer anointing of the sick (or last rites). Last rites are often associated with the Catholic denomination, but others perform similar rituals to support people who are sick or at the end of life. Even if the ritual has already been performed, there may still be a request for a priest to offer prayers and bless the patient.
- Jehovah's Witness
  - Tradition of Jehovah's Witness does not teach that people experience an immediate **afterlife** (what a person believes will happen after death; a place where the spirit goes after the death of the physical body) when they die. For example, the nurse would not hear a patient's family remark, "He's in a better place now."
- Amish
  - Amish funerals are typically modest and held in the home. They may not use elaborate caskets or grave markers. The community comes together to support the grieving family, providing meals and assistance.
- Islam
  - Muslim tradition generally discourages the withholding or withdrawing of life-sustaining therapy. However, because decisions involve the circumstances of the patient and the complexities of medical treatments, family members who are morally conflicted may wish to bring an experienced imam to their discussion with the healthcare team.
  - A family member may request to be present with a dying person so they can whisper a proclamation of faith in the patient's ear right before death.
  - After a death, the family may request to wash the patient and position the bed to face Mecca. The patient's head should rest on a pillow.
  - Burial is usually accomplished as soon as possible. Muslim families rarely allow for an autopsy unless there is an order by a medical examiner. Some Muslims may consider organ donation, but the subject is debated within Islamic circles.
  - There may be a request that amputated limbs be made available for burial. Details should be arranged through the patient's/family's funeral home.
- Hinduism
  - Hinduism teaches that death is a crucial "transition" with karmic implications.
  - There may be a strong desire for death to occur at home rather than in the hospital.
  - Family may wish to perform predeath rituals (e.g., tying a thread around the person's neck or wrist).
  - After death, family members may request to wash the patient's body (by family members of the same sex

as the patient).
    - The family may request constant attendance of the deceased's body. A family member or representative may wish to accompany the body to the morgue or at least remain as close to the body as possible (e.g., sitting outside a restricted area). (Ehman, 2012).
- Buddhism
    - In end-of-life care, Buddhists may be concerned about safeguarding awareness/consciousness. Clarification of the patient's wishes about the use of analgesics in the days and hours before death is strategically important for developing an ethical pain management plan.
    - As a patient approaches death, medical and nursing staff should minimize actions that might disturb concentration or meditation in preparation for dying. Near the time of death, a Buddhist patient's family may appear emotionally reserved and even keep their physical distance from the patient's bed. This can be a custom for the purpose of supporting the patient's desire to concentrate on the experience of dying without distraction.
    - After the patient has died, staff should try to keep the body as still as possible and avoid jostling during transport. Buddhism teaches that the body is not immediately devoid of the person's spirit after death, so there is continued concern about disturbing the body. The nurse should also be aware of how these beliefs may factor into discussion of organ donation.
    - Families may request that after a patient has died, the body be kept available to them for several hours for the purpose of religious rites. All requests should be negotiated carefully, maximizing the opportunity for accommodation in recognition of the religious significance (Ehman, 2012).

Beliefs Regarding Pregnancy and Birth

Along with having unique perspectives on the end of life, patients also have their own beliefs about the beginning. Religious and spiritual beliefs and practices about pregnancy and childbirth vary, and the nurse should be knowledgeable about how different patients will view this time of life, as well as what concerns they may have about receiving care.

- Christianity
    - All requests for the sacrament of baptism should be relayed to a minister or priest. However, if an infant is likely to die before a priest can arrive, the infant may be baptized by any person with proper intent. The person would say, "[name of infant], I **baptize** you in the name of the Father, and of the Son, and of the Holy Spirit," then pour a small amount of water over the infant's head three times. Emergency baptisms must be reported to the local parish priest.
- Amish
    - Many Amish females prefer to give birth at home with the assistance of midwives. Hospital births are less common but accepted when necessary. Pregnancy and childbirth are community-centered, with significant support from family and neighbors.
- Islam
    - Immediately after the baby is born, the call to prayer (Adhan) is whispered into the baby's right ear, and the call to begin prayer (Iqamah) is whispered into the left (Al-Islam, 2013).
- Hinduism
    - Jatakarma is when the father chants mantras in the baby's ear to welcome them into the world (ISKCON Educational Services, 2018).
- East Asian and Chinese religions
    - In some East Asian and Chinese religions, there are various taboos during pregnancy, such as attending funerals, having negative thoughts, and moving heavy objects. It is believed that avoiding these practices protects the mother and baby from harm.
    - After giving birth, the new mother practices "zuo yuezi," or "sitting the month," a period of rest and recovery typically lasting about thirty to forty days. During this time, the mother is expected to stay indoors, avoid cold foods, and eat nutrient-rich, warm foods to replenish her energy.
    - The postpartum diet often includes foods believed to promote healing and recovery, such as chicken soup with ginger, eggs, and specially prepared herbal drinks.

CULTURAL CONTEXT

Cultural Diversity in Maternity Care: Navigating Unique Beliefs and Traditions

The practice of consuming placenta, known as placentophagy, has cultural roots in various societies. Although not a universal cultural norm, some communities have traditions or beliefs associated with the consumption of placenta. In some cultures, the placenta is considered a sacred or spiritually significant organ, and consuming it is believed to convey health benefits or symbolize a connection between the mother and child.

It's important to note that placentophagy is not a widespread or mainstream cultural practice, and opinions on its benefits vary. Some proponents argue that it provides nutritional benefits, helps with postpartum recovery, or has symbolic significance. Others may engage in placentophagy for religious or spiritual reasons (Farr et al., 2017; Stanley et al., 2019; Goeden, 2018).

It's crucial for healthcare providers to approach cultural practices, including those related to childbirth and postpartum traditions, with respect and understanding. Patient preferences and cultural beliefs should be taken into account when providing care, and healthcare professionals should be open to discussions about these practices to ensure holistic and culturally sensitive maternity care.

Beliefs Regarding Diet

Dietary practices are central to many religious and spiritual groups. Although the nurse should know of and understand the dietary needs of all patients, they should also note those rooted in religious or cultural practices. The nurse must understand that just because a patient follows a particular religion does not mean they strictly follow all its practices, including those about diet. The nurse should not make assumptions but ask patients about their dietary needs and preferences to obtain information and demonstrate cultural sensitivity and respect.

- Judaism
  - Jewish patients often request a special **kosher diet** in accordance with religious laws that govern the preparation of certain foods (e.g., beef), the prohibition of certain foods (e.g., pork and gelatin), or the combination of some food (e.g., beef served with dairy products). However, not all Jewish patients keep kosher, so it is important for the nurse to be aware of their dietary practices. Prescribed nutrition therapy for patients must align with their cultural and spiritual traditions.
  - Hand washing before eating may also have a religious significance.
- Catholicism
  - Patients may request nonmeat meals, especially during the time of Lent (the forty days before Easter) (United States Conference of Catholic Bishops, 2024).
- Amish
  - Amish patients typically avoid processed foods and prefer homegrown and home-cooked foods, including meats, vegetables, grains, and dairy.
- Islam
  - Muslims may specifically request a diet in accordance with religious laws for halal food, though many Muslims choose a vegetarian diet as a simple way to avoid religious prohibitions against pork products or gelatin. Forbidden foods are referred to as haram.
  - Muslim dietary regulation can affect patients' use of medications, especially drugs that have pork origins or contain gelatin or alcohol. The dietary prohibition against alcohol has occasionally raised questions about Muslims' use of alcohol-based sanitizers in the hospital. Concerns should be addressed thoroughly and sensitively, and perhaps with the input of an imam (a person who leads prayers in a mosque).
  - During the thirty-day month of Ramadan, Muslims refrain from food and drink from dawn until sundown. Providers should consider whether it is medically appropriate for patients to fast while in the hospital. If so, they will need to look at the options for predawn meals, provide patients with dates and spring water in the late afternoon (a traditional way to break the daily fast), and delay dinner until after sunset (Ehman, 2012).
- Hinduism
  - Hindus are often strictly vegetarian and do not consume meat or animal by-products. For such patients,

even medications produced using animals would not be allowed. Some Hindus refrain from eating certain vegetables, such as onions or garlic.
    - Fasting is a common practice in Hinduism, and patients may wish to discuss the possibility within the context of their medical/dietary care plan.
- Buddhism
    - Some Buddhists are strictly vegetarian and refuse to consume any meat or animal by-products. For such patients, even medications produced using animals would not be allowed.
- African religions
    - Some African religions have taboos against consuming certain types of meat, such as pork or shellfish, which may be seen as unclean or spiritually impure.
- Indigenous Americans
    - Preferred diets come from locally sourced and seasonal foods (rather than processed food) such as wild game, fish, fruits, vegetables, and grains that are harvested or gathered from the surrounding environments.
- East Asian and Chinese religions
    - Food is often seen in terms of its energetic properties (hot, cold, neutral) and its effects on the body. Balancing these properties is believed to promote health.
    - Some East Asian religions, such as Buddhism, promote vegetarianism to adhere to the principle of ahimsa (nonviolence). Taoism may advocate for specific dietary practices that align with natural and seasonal cycles.

Beliefs Regarding Rituals or Holy Tenets

The unique and specific beliefs of each religion and spiritual culture come with their own set of practices or traditions that help people feel connected to them, as well as contribute to the broader sense of connectedness to the world. Patients may partake in some, but not all, of these practices and rituals, whereas others may strictly follow them. Meeting a patient's spiritual needs means understanding the practices that are important to them and finding ways to integrate them into care.

- Judaism
    - Some Jewish patients strictly observe the rule of not working on the Sabbath (from sundown on Friday until sundown on Saturday) or on religious holidays. If so, this religious injunction against work, including prohibitions against using certain tools or engaging in tasks that initiate electricity use, can prevent tasks such as writing, using a cell phone, flipping a light switch, pushing buttons to call a nurse, adjusting a motorized bed, or operating a patient-controlled analgesia (PCA) pump. The tearing of paper can be considered work, so roll toilet paper may need to be replaced with an opened box of individual sheets.
    - Medical procedures should not be scheduled during the Sabbath or religious holidays (unless they are lifesaving), nor should hospital discharges be planned during such times without the patient's consent. Although these restrictions on work are generally associated with Orthodox Judaism, they may be important for any Jewish patient.
    - Jewish holidays are usually highly significant for patients, especially Passover in the spring and Rosh Hashanah and Yom Kippur in the fall. These holidays may affect the scheduling of medical procedures and may involve dietary changes (related to a need for special food or a desire to fast). All Jewish holidays run from sundown to sundown.
    - It is common for male Jewish patients to wear a yarmulke or kippah (skull cap) during prayer, and some Jews may wish to keep them on at all times (Figure 35.10). Patients or family members may wear prayer shawls and use phylacteries (two small boxes containing scriptural verses and having leather straps worn on the forehead and forearm during prayer). There may be a request that at least 10 people (called a minyan) be allowed in the patient's room for prayer.
- Catholicism
    - Some patients may keep religious objects with them, such as a rosary (a loop of beads with a crucifix used for prayer), a scapula (a small cloth devotional pendant), or a religious medal. If patients request that an object remain with them during medical procedures, one option may be placing it in a sealed bag that can be kept on or near the patient. If an object is metal and the patient is having a radiological procedure or test (such as an MRI scan), explain why metal cannot be brought into the room for the exam and ask the

patient or family if they can bring in a nonmetal substitute.
- Interruption of religious practices, such as regular attendance at Mass or special observance of special holy days, may be highly stressful to Catholic patients. It can be helpful to connect them with local clergy and/or a hospital chaplain.
- Sacraments, the consecrated elements of the Eucharist (e.g., the bread or Host), and blessings by a Catholic priest can be viewed as highly important, especially before surgery or when there is a perceived risk of death.
- Patients may request Holy Communion (Eucharist) prior to surgery. Although a Catholic priest or Eucharistic minister would typically offer only a tiny portion of a wafer, patients who are NPO (to have nothing by mouth) should have this request approved by the healthcare team as medically safe before proceeding.

FIGURE 35.10 Yarmulkes or kippahs are often worn by Jewish men during worship. Some men keep them on at all times. (credit: "Casamento judeu1" by David Berkowitz/Wikipedia, CC BY 2.0)

PATIENT CONVERSATIONS

Reducing Anxiety with the Rosary

Nurse: Hello, Catherine. How are you feeling today?

Patient: Nervous. Well, terrified more like it. I didn't sleep at all last night. I just kept thinking . . . what if I don't wake up? Kind of ironic, wasn't it? I was wide awake all night worrying that I wouldn't wake up after they put me to sleep today.

Nurse: Being anxious is very normal, but we do want to help you feel more relaxed. Not just because feeling anxious is no fun, but because we want you to go into your surgery today feeling strong. So, what do you do when you feel worried? What makes you feel better?

Patient: Well, I used to call my mom but . . . well, she died right before I was diagnosed with cancer. In a way I'm glad she wasn't here for it because I think it would have killed her to see me get so sick.

Nurse: I'm so sorry you haven't had her by your side through all this. Do you have any way to feel connected to her? Maybe some photos or an old sweater of hers?

Patient: That's great thinking. Can you get me that bag over there on the chair? I'm sure I packed it. . . .

Nurse: Sure, here you go.

Patient: Thanks. Yes, here it is—her rosary. I don't even remember the prayers she used to say but . . . wow, I just

feel a little better even touching it. Just thinking about her.

Nurse: Sometimes, it's nice to have something physical to hold when we're feeling lost and adrift in all the anxiety and uncertainty.

Patient: Yeah, like an anchor.

Nurse: Exactly.

Patient: Can I hold on to it until they take me in?

Nurse: Of course.

Patient: Can I hand it to you to make sure it doesn't get lost? Can you make sure it gets put somewhere safe?

Nurse: Yes. And I'll put a note in your chart to make sure the nurse who is there when you wake up knows where to find it.

Patient: Thanks. That's right . . . when I wake up.

- Jehovah's Witness
  - Jehovah's Witnesses do not celebrate birthdays or Christian holidays (Ehman, 2012).
  - Contrary to popular misconceptions, faith healing is not a part of Jehovah's Witness tradition. Prayers are often said for comfort and endurance.
- Islam
  - Muslim prayers are conducted five times a day. Patients may desire to pray by kneeling and bending to the floor, but Islamic tradition recognizes circumstances when this is not medically advisable (Figure 35.11). If patients are disturbed by their inability to pray on the floor, advice should be encouraged from an imam.
- Buddhism
  - Buddhism places a strong emphasis on mindfulness, so patients may request peace and quiet for the purpose of meditation, especially during crises.
  - Patients or families may pray or chant out loud repetitiously. This is often performed quietly, and any noise concerns in a hospital can usually be negotiated easily. Families may sometimes wish to place a picture of the Buddha in the patient's room.

FIGURE 35.11 Muslim prayers are done five times daily. When possible, patients may prefer to kneel on the floor for prayer. (credit: "Damascus, Umayyad Mosque, prayers" by Arian Zwegers/Flickr, CC BY 2.0)

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN: Patient-Centered Care

The nurse can demonstrate the competency of patient-centered care by ensuring that a patient's spiritual needs are part of their care plan. Reminders for the nurse include the following:

- Be open, receptive, and respectful as you listen to a patient describe their spiritual needs.
- Understand that a patient's beliefs may differ from, or even contradict, your own. Be aware of your own biases and questions. Avoid making assumptions or judgments.
- Through active listening, advocating for needs, and being respectful of a patient's belief, build and maintain a supportive rapport.
- As you plan for and accommodate a patient's spiritual needs through collaboration and resource gathering, be aware of how these needs may evolve over the course of a patient's illness or treatment. Be flexible and aware of how a patient's spiritual needs may change or intensify.
- Communicate effectively with other members of the patient's care team to ensure that the patient's needs are known, respected, and met.

Guidelines for Providing Competent Nursing Care

Defining safe and competent nursing care is crucial to ensuring individual patients receive the needed care. Understanding the spiritual assessments and nursing diagnoses can help the nurse assist patients in maintaining their spirituality during their healthcare journey.

Spiritual Assessment

The nurse will often have a standardized spiritual assessment tool to complete when a patient is admitted. However, if a standardized assessment tool is not available, the FICA spiritual history tool can be used (Puchalski, 2021). The

FICA (which stands for faith/beliefs, importance/influence, community, and address in care) contains open-ended questions to ask patients about their personal spiritual beliefs and preferences in a way that is open and nonjudgmental (Table 35.2).

Components of FICA Model	Description	Application in Health Care	Sample Assessment Questions
Faith/beliefs	Explore the patient's faith or belief system. Ask about their spiritual practices and how they draw comfort from their faith.	Understanding the patient's core beliefs gives healthcare providers insights into coping mechanisms and sources of strength during illness.	Can you share with me your religious or spiritual background? How do your beliefs influence the way you cope with challenges, including health issues?
Importance/ influence	Inquire about the importance of the patient's faith in their life and how it influences their healthcare decisions.	Recognizing the impact of spirituality on healthcare decisions enables tailored treatment plans that align with the patient's values and preferences.	How important is your faith or spirituality in your life? Can you share instances where your beliefs have influenced your healthcare decisions?
Community	Assess the patient's connection to a spiritual community or support system. Understand if they engage in communal worship or spiritual gatherings.	Recognizing the role of a community in a patient's life can guide healthcare providers in facilitating connections with spiritual leaders, support groups, or chaplaincy services.	Are you part of a religious or spiritual community? How does your community provide support during times of illness or stress?
Address in care	Discuss how the patient wishes to have their faith addressed in their health care. Inquire about specific spiritual practices or rituals they may want to incorporate into their care plan.	This provides a framework for integrating spiritual care into the overall treatment plan, respecting the patient's preferences and ensuring holistic well-being.	How would you like your faith to be included in your health care? Are there specific spiritual practices or rituals you would like us to consider in your care plan?

TABLE 35.2 FICA Model (Source: Dameron, 2005.)

The HOPE model is a framework also used in health care to assess and address patients' spiritual and existential needs (Table 35.3). The acronym HOPE represents key domains that healthcare providers can explore with patients. Compared to the FICA model, the HOPE model strives to encompass the entirety of patients' spiritual experiences, recognizing the interplay between individual beliefs, organized religious practices, and their impact on healthcare decisions.

Components of HOPE Model	Description	Application in Health Care	Sample Assessment Questions
H: Sources of hope, meaning, comfort, strength, peace, love, and connection	Explore the patient's sources of hope, meaning, and comfort. Inquire about what brings them strength, peace, and connection in their life.	Understanding the patient's sources of hope and meaning can guide healthcare providers in providing support and incorporating these aspects into the care plan.	What gives you hope and meaning in your life, especially during difficult times? How do you find comfort and strength in challenging situations?
O: Organized religion	Assess the patient's involvement in organized religion or religious practices. Inquire about their religious community and the role it plays in their life.	Recognizing the significance of organized religion in a patient's life can inform healthcare providers about potential sources of support and guidance.	Are you affiliated with a specific religious organization or community? How does your involvement in organized religion influence your approach to health and well-being?
P: Personal spirituality and practices	Explore the patient's personal spiritual beliefs and practices. Inquire about their spiritual rituals, meditation, prayer, or other practices.	Understanding the patient's personal spirituality provides insights into their coping mechanisms and strategies for maintaining well-being.	Can you describe your personal spiritual beliefs or philosophy of life? Do you engage in any spiritual practices or rituals that are meaningful to you?
E: Effects on medical care and end-of-life issues	Discuss how the patient's spirituality affects their approach to medical care and end-of-life issues. Inquire about their preferences for spiritual support during times of illness or nearing the end of life.	Understanding the impact of spirituality on medical care enables healthcare providers to tailor treatment plans and support patients' preferences for spiritual care.	How does your spirituality influence your decisions about medical care? Are there specific ways you would like your spiritual needs addressed as you navigate medical treatment or end-of-life issues?

TABLE 35.3 HOPE Model (Source: Anandarajah & Hight, 2001.)

LINK TO LEARNING

You can read more information about the HOPE tool (https://openstax.org/r/77HOPEtool) and how to use it.

Objective Assessment

In addition to asking open-ended questions, nurses must observe patients for cues indicating difficulties in finding meaning, purpose, or hope in life. It is also important to determine if a patient has supportive relationships (Ackley et al., 2020).

Patients experiencing chronic or serious illness may make statements that suggest spiritual distress, and their words should cue the nurse that spiritual care is needed. Examples of these statements/concepts are (Puchalski et al., 2014):

- Lack of meaning: “I am not the person I used to be.”
- Loss of hope: “I have nothing left to hope for.”
- Mystery: “Why did this happen to me?”
- Isolation: “All my family and friends are gone.”
- Helplessness: “I have no control over my life anymore.”

Nursing Diagnoses

To integrate spiritual care effectively, nurses must engage in self-reflection to better understand their own belief systems and spiritual perspectives. This awareness is fundamental for nurses to provide compassionate and patient-centered care (PCC). By utilizing assessment tools such as the FICA Spiritual History Tool and the HOPE Approach to Spiritual Assessment, nurses can gain insights into their patients' spiritual needs and tailor their care accordingly. Overcoming barriers to spiritual care requires commitment to the therapeutic relationship, effective communication skills, trust, empathy, self-awareness, and acknowledgment of diverse beliefs.

To surmount these challenges, nurses should view spiritual care as a structured process consisting of the following interconnected phases (Nissen et al., 2022):

1. identifying spiritual needs and resources (Table 35.4)
2. understanding the patient's specific needs
3. developing an individualized spiritual care treatment plan in collaboration with relevant healthcare/spiritual care professionals
4. delivering spiritual care
5. evaluating the provided spiritual care

This process-oriented perspective emphasizes the dynamic and evolving nature of spiritual care, offering a framework that acknowledges the unique aspects of each local context, patient, and care provision.

NANDA I Diagnosis	Definition	Defining Characteristics
Readiness for enhanced spiritual well-being	A pattern of experiencing and integrating meaning and purpose in life through connectedness with self, others, art, music, literature, nature, and/or a power greater than oneself, which can be strengthened	Connections to self • Expresses desire to enhance coping • Expresses desire to enhance meaning in life Connections with others • Expresses desire to enhance forgiveness from others • Expresses desire to enhance interaction with significant other • Expresses desire to enhance interaction with spiritual leaders • Expresses desire to enhance service to others Connections with art, music, literature, and nature • Expresses desire to enhance creative energy • Expresses desire to enhance spiritual reading • Expresses desire to enhance time outdoors Connections with power greater than self • Expresses desire to enhance participation in religious activity • Expresses desire to enhance prayerfulness
Impaired religiosity	Impaired ability to exercise reliance on beliefs and/or participate in rituals of a particular faith tradition	• Desires to reconnect with previous belief pattern • Has difficulty adhering to prescribed religious beliefs and/or rituals • Distresses about separation from the faith community
Spiritual distress	A state of suffering related to the impaired ability to experience meaning in life through connections with self, others, the world, or a superior being	• Anxiety • Crying • Fatigue • Fear • Insomnia • Questioning identity • Questioning meaning of life • Questioning meaning of suffering

TABLE 35.4 **Common NANDA I Nursing Diagnoses Related to Spiritual Health** (Source: Herdman & Kamitsuru, 2018.)

Readiness for Enhanced Spiritual Well-Being

A readiness for enhanced spiritual well-being can be defined as a pattern of experiencing and integrating meaning and purpose in life through connectedness with self, others, art, music, literature, nature, and/or a power greater

than oneself, which can be strengthened. For example, many people experienced feelings of isolation as they sheltered at home during the COVID-19 pandemic; someone with a readiness for enhanced spiritual well-being would be encouraged to spend more time outdoors. In this situation, the nurse could encourage patients to visit local parks and walk outdoors while wearing a mask and maintaining social distancing.

Impaired Religiosity

Impaired religiosity is when a patient has difficulty exercising their beliefs and/or participating in rituals of their particular faith tradition. Hospitalized patients may be unable to attend religious services as usual. In this situation, the nurse could help the patient overcome environmental barriers to practicing their religion by contacting the patient's pastor to arrange a visit or determine if services can be viewed online.

Spiritual Distress

Spiritual distress is defined as a state of suffering related to the impaired ability to experience meaning in life through connections with self, others, the world, or a superior being. Events that place patient populations at risk for developing spiritual distress include the birth of a child, the death of a significant other, exposure to death, a significant life transition, severe illness or injury, exposure to natural disaster, racial conflict, or an unexpected life event (Herdman & Kamitsuru, 2018). Conditions that place a person at risk for developing spiritual distress include actively dying, chronic illness, illness, loss of a body part, loss of function of a body part, or a treatment regimen (Herdman & Kamitsuru, 2018). For example, a patient diagnosed with life-threatening medical diagnoses such as cancer may experience spiritual distress as they move through the typical stages of loss. In this case, the nurse would implement interventions to enhance coping.

Outcome Identification

Goals and outcomes should be customized for each patient. When a patient has the nursing diagnosis of readiness for enhanced spiritual well-being, a sample goal statement might be, "The patient will demonstrate hope as evidenced by the following indicators: expressed expectation of a positive future, faith, optimism, belief in self, sense of meaning in life, belief in others, and inner peace" (Ackley et al., 2020). An example of a related outcome is, "The patient will express a sense of meaning and purpose in life by discharge" (Ackley et al., 2020).

When a patient has the nursing diagnosis of spiritual distress, a sample goal statement might be, "The patient will demonstrate improved spiritual health as evidenced by one of the following indicators: feelings of faith, hope, meaning, and purpose in life with connectedness with self and others to share thoughts, feelings, and beliefs" (Ackley et al., 2020). A sample outcome is, "The patient will express a purpose in life by discharge" (Ackley et al., 2020).

Summary

35.1 Dimensions of Spirituality

Spirituality assumes a crucial role in the healthcare setting, with its profound influence on patients' well-being. Spirituality encompasses a connection beyond oneself and a pursuit of meaning, distinct from religion yet often intersecting with faith based on shared aspects such as hope, love, conflict, and healing. Faith is examined as an acceptance of religious doctrines or an attitude facilitating a gateway to spiritual practice. Religion, as a unified system of beliefs and practices, provides a contextual backdrop for patient care and recognizes the effect it has on physical illness and mental health. Hope emerges as a guiding force, assisting patients in navigating challenges, whereas love is depicted as a profound connection rooted in spirituality, influencing the meaning individuals find in life.

In the realm of health and well-being, spirituality extends beyond religious affiliations, involving an individual's pursuit of ultimate meaning, purpose, and connection in life. It profoundly influences a person's overall sense of wellness, quality of life, and coping mechanisms during challenging times. Patients explore dimensions of spirituality, seeking meaning, fostering connections with others or a higher power, and finding inner peace by way of individual spiritual practices or group practices. Nurses, as key facilitators of patient-centered care, play a pivotal role in recognizing and incorporating diverse spiritual beliefs into health care. This inclusive approach enhances patient engagement with the healthcare system and positively impacts overall well-being while providing patients with autonomy in their healthcare journey.

Encouraging spiritual practices such as prayer, meditation, mindfulness, sacred rituals, connection with nature, and pastoral care reflects a commitment to addressing the spiritual dimension of health. Nurses create a supportive environment for patients to engage in these practices, fostering a holistic approach that recognizes the interconnectedness of physiological, psychological, and spiritual well-being. Research underscores the prevalence of spiritual distress among patients facing serious illnesses, emphasizing the vital role of spiritual care in nursing.

35.2 Applications of Spirituality to Health Care

Beyond the dimensions of physical and mental health, each patient's spiritual well-being must also be considered by the nurse. Developing an understanding of what spirituality is in the broader sense, then looking at how it affects an individual's health, is key to providing competent, compassionate, and culturally aware nursing care. Although nurses do not need to be an expert on all religious and spiritual beliefs, they should strive to have an awareness of the differences between them so they can better address their patients' spiritual needs.

From a practical perspective, the nurse also needs to be aware of what spiritual, religious, and cultural beliefs and practices may be central to how their patients view the experience of receiving medical care, as well as affect their treatment decisions. The nurse must be aware of and care for their own spiritual well-being and know how to find support for themselves and their patients.

Key Terms

afterlife what a person believes will happen after death; a place where the spirit goes after the death of the physical body
agnostic someone who believes that ultimate reality is unknowable
atheist someone who does not believe in any divine being or entity
baptize to initiate or adopt into the faith (particularly Christianity)
breathwork a technique involving intentional, controlled breathing to interrupt the stress cycle and promote relaxation
congregation a group of people who worship together
ethnicity the cultural, social, and ancestral characteristics that define a group of people sharing common historical roots, language, traditions, and often geographical origins
faith a belief in something without proof
healer an individual using faith and prayer to facilitate healing
holistic care model a framework that recognizes the interconnectedness of physiological, psychosocial, and spiritual well-being in patient care

hope the desire for a certain outcome and the belief that it will happen
journaling the act of writing one's thoughts and documenting one's feelings in a journal or diary
karma the notion that one's future happiness is caused by present actions; actions performed with good intent lead to future happiness, whereas actions performed with bad intent lead to future unhappiness
kosher diet a diet that adheres to Jewish dietary laws (kashrut), governing which foods are permissible based on specific religious guidelines such as the separation of meat and dairy products and prohibitions on certain animals and their products
love a strong feeling of affection
meditation a focused way of deeply thinking and reflecting that promotes awareness and acceptance
mindfulness the practice of being present in the moment and aware of one's thoughts, feelings, and environment
pastoral care services (also, spiritual counselors) individuals who offer support to patients in exploring and expressing their spiritual needs
prayer the practice of communicating with a higher power or divine entity
qigong a traditional Chinese practice that integrates physical postures, breathing techniques, and focused intention
reincarnation the idea that a person's soul or spirit is reborn into a new body
religion a unified system of beliefs, values, and practices that a person holds sacred or considers to be spiritually significant
remembrance and renewal (R & R) a practice that involves reflecting on the past while simultaneously revitalizing or rejuvenating oneself for the future
ritual a defined practice that individuals or groups use to commemorate or cope with something
spiritual distress a disruption to a person's belief or value system
spiritual healing a complementary form of medicine that embraces practices such as prayer to help a person focus on healing
spiritual well-being a person's sense of purpose or meaning in life
spirituality a profound feeling of connection to a greater power than oneself, as well as the practices used to explore this feeling
transcendence the experience of a reality beyond the physical or literal world
yoga a practice that combines physical postures, controlled breathing, and mindfulness techniques to harmonize the mind, body, and spirit

Assessments

Review Questions

1. What role do nurses play in spiritual care?
   a. Nurses are involved in spiritual care at the patient's request.
   b. Nurses facilitate spiritual healing primarily through prayer.
   c. Nurses contribute to spiritual care through therapeutic techniques.
   d. Nurses focus on physiological care and refer patients for spiritual care.

2. Which statement describes the relationship between religion and spirituality in nursing?
   a. Religion and spirituality are not always mutually inclusive.
   b. Religion and spirituality are mutually exclusive in nursing.
   c. True spirituality encompasses both religious and spiritual dimensions.
   d. Religion is not as important in nursing care as is spirituality.

3. What is the primary focus of spirituality in the context of health and well-being?
   a. religious affiliations
   b. ultimate meaning and purpose in life
   c. physical well-being
   d. community engagement

4. What practices are acknowledged and respected in the nursing profession to enhance patient outcomes in spiritual practices?

a. adhering to recommended medical interventions as a primary source of healing
b. relying heavily on religious ceremonies for support in the healing process
c. respecting designated prayer times and facilitating spiritual rituals
d. promoting technological advancements for patient care that focus on holistic care

5. How might breathwork contribute to healthcare providers' well-being?
a. recognizing stressors that led to anxiety and emotional difficulties
b. promoting ideas to address burnout and cognitive problems
c. serving as a technique to interrupt the stress cycle and promote relaxation
d. inducing holistic thought practices in patient-centered care

6. What is the significance of understanding cultural diversity in the context of spirituality and health?
a. Resources can be identified to assist family members in care.
b. Individual spirituality can impact patient care plans.
c. Therapeutic modalities are impacted by spiritual practices.
d. Religious practices are a legal right of the patient.

7. How does age affect the spiritual development of patients?
a. Spirituality remains constant throughout life.
b. Spiritual beliefs become more rigid in old age.
c. Spirituality evolves with age and life stages.
d. Spirituality develops primarily during midlife.

8. Why is cultural competence crucial for healthcare providers in relation to spirituality?
a. Patient therapies are determined by spiritual practices.
b. A more inclusive and patient-centered approach can be implemented.
c. Cultural competence is correlated to religion and spirituality, impacting health outcomes.
d. Cultural competence is more aligned with religious practice than spirituality.

9. How can nurses *best* assist patients with their spiritual health?
a. providing spiritual resources if patients do not have a spiritual preference
b. accommodating patient requests to support their faith and religious practices
c. recognizing personal values and beliefs so guidance can be provided for spiritual practices
d. discussing a patient's values and beliefs with family members and caregivers

10. When is it appropriate for a nurse to pray with a patient?
a. during times when members of the clergy are present
b. when the nurse feels the patient needs prayer
c. following delivery of life-altering diagnosis
d. when the patient specifically requests it

Check Your Understanding Questions

1. According to Provision 5 of the ANA Code of Ethics, what are the key responsibilities nurses owe to themselves?

2. How does journaling enhance spiritual well-being and promote healing?

3. How can encouraging a patient to engage in spiritual practices such as meditation or yoga impact overall health and recovery from illness?

4. Why is it important for nurses to take cues from patients when discussing spiritual health?

5. What should a nurse do if a patient has a spiritual belief that conflicts with their treatment plan?

6. What should the nurse do if a Jewish patient who keeps kosher is served a meal that contains pork?

Reflection Questions

1. How can awareness and understanding of spirituality, as outlined in the content, contribute to a more holistic approach in health care, considering the diverse ways individuals express and practice their spiritual beliefs?
2. Reflect on how you would navigate a conversation about blood transfusions with a patient and their family who are Jehovah's Witnesses. How would you ensure that the patient and family are comfortable and feel heard during the conversation? What challenges might you encounter, and how would you overcome them?
3. In what ways can an individual's personal belief systems, beyond organized religion, shape their spirituality?

What Should the Nurse Do?

1. What should the nurse do to create a supportive environment for patients interested in spiritual practices such as yoga?
2. What should the nurse do when they are caring for a patient who holds very different—even contradictory—spiritual beliefs from their own?
3. A patient expresses spiritual distress related to a life-threatening illness. How should the nurse address this distress and incorporate spiritual care into the patient's treatment plan?

Competency-Based Assessments

1. Explain the concepts of spirituality, faith, religion, hope, and love.
2. Provide specific examples demonstrating how you would customize your interactions and offer support to patients with varied beliefs and values by applying the concepts of spirituality, faith, religion, hope, and love.
3. Explain each component of the FICA model used in a spiritual assessment. Provide at least three questions that could be asked for each component.
4. Select a religion and outline how you would tailor spiritual considerations to meet the specific religious needs of a patient from the selected faith, ensuring their cultural and spiritual beliefs are respected and integrated into their care plan.

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CHAPTER 36
Grief, Loss, Death, and Dying

FIGURE 36.1 Grief, loss, death, and dying are natural stages of life. Skills such as compassion, empathy, and advocacy will help the nurse provide competent, patient-centered care. (credit: modification of "sad man" by "@VicTor"/Nappy, CC 1.0 Public Domain)

CHAPTER OUTLINE

36.1 Concepts of Grief and Loss
36.2 Concepts of Death and Dying
36.3 Factors That Affect Grief, Loss, Death, and Dying
36.4 Legal and Ethical Considerations

INTRODUCTION Loss and grief are universal human experiences that can trigger deep emotions and feelings. Yet the experience of loss and the ensuing grief response varies significantly from person to person and is influenced by physical changes, cognitive changes, cultural norms, personal beliefs, and family values. Having a deep understanding of the pathophysiology of death and the related social-emotional effects on patients, families, and healthcare providers allows nurses to support individuals and families through this process effectively. Researchers have developed conceptualizations of grief that help nurses establish care plans for patients during any stage in the grieving process. With these tools, nurses can personalize care for individuals coping with loss and experiencing grief at any level.

Regardless of their specialty or level of experience, nurses inevitably face situations involving death and dying, whether it be from terminal illnesses, expected outcomes, or unforeseen events. Additionally, nurses frequently play a crucial role in supporting individuals dealing with acute or chronic grief. It is essential for nurses to possess emotional awareness and emotional intelligence when tending to patients undergoing the dying process, those expecting impending loss, and those going through the grieving process. Nurses must be equipped to navigate intricate discussions, remain composed, and effectively address emotions such as anger, guilt, sadness, and fear.

36.1 Concepts of Grief and Loss

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify concepts of grief
- Recognize concepts of loss
- Describe reactions to grief and loss

We often think of loss and grief in the context of the end of life. However, loss can be associated with many other life experiences, including divorce, estrangement, financial loss, job loss, medical diagnoses, and traumatic events. While the grief process is highly variable, individuals can experience grief in response to any of these life experiences, events, and losses.

Expressions of grief may present as physical symptoms, emotional responses, or changes in social interactions. While researchers have developed a comprehensive knowledge of grief patterns, everyone is unique and moves through grief stages at different rates and with various challenges. Nurses need to understand these differences to provide individualized care for patients who have experienced loss.

Concepts of Grief

The emotional response to a loss, known as **grief**, is defined as the individualized and personalized feelings and responses that an individual makes to real, perceived, or anticipated loss. These feelings may include anger, frustration, loneliness, sadness, guilt, regret, and peace. Major concepts associated with grieving are loss, mourning, and bereavement. The actual or perceived absence of a possession, circumstance, or individual is called **loss**. The response to loss is grief, and the outward, personal expression of grief is mourning. After a patient dies, the family members and other survivors experience loss. However, the experience of grief may also be associated with the loss of health or with changes in relationships or roles.

Mourning

The outward, social expression of loss is called **mourning**. Individuals outwardly express loss based on cultural norms, customs, and practices, including rituals and traditions. Some cultures may encourage the verbal expression of emotions: for example, by wailing or crying loudly. Other cultures are more stoic and promote a minimal reaction to loss. Culture also dictates how long one mourns a death and sometimes how a person in mourning is expected to behave. The outward expression of loss is also affected by an individual's personality, previous life experiences, and social support system.

After a death, mourning practices include funerals, wakes, and other rituals, often connected to spiritual beliefs. These practices are highly variable among cultures. Because nurses will encounter patients from a wide range of cultures, accepting individual mourning practices is essential. Mourning rituals may include the following:

- prayer
- meditation
- chanting (rhythmic and repetitive vocalization of words or sounds)
- singing
- wailing (prolonged, high-pitched, mournful cries)
- gathering of family
- presence of spiritual leaders
- fasting
- reading from a spiritual book
- applying herbs or oils
- covering or dressing the deceased's body

LINK TO LEARNING

Learn more about unique burial rituals (https://openstax.org/r/77BurialRituals) worldwide, from sky burials to parades.

Bereavement

Both the feelings of grief and the outward expression of mourning after a loved one has died are known as **bereavement**. A bereavement period is the time it takes for the mourner to process the loss, grieve, and mourn. There is no set bereavement period; everyone will adjust differently to the world without the presence of the deceased. Bereavement can take a physical and emotional toll on a person who has experienced loss.

Nurses can encourage a person who is bereaving to talk about the death and understand their feelings are normal. Individuals experiencing the bereavement process should allow for sufficient time for the expression of grief and, if possible, postpone significant decisions such as changing jobs or moving. If individuals connect with a specific religion or spiritual practice, leaning into these beliefs enhances coping during this difficult time. Individuals without a religious connection may still experience grief on a spiritual level; they can be encouraged to incorporate their individual beliefs on death and dying into healthy coping strategies. In all these instances, nurses offer individuals a sense of acceptance by encouraging them to express grief in their own way.

REAL RN STORIES

Too Much Crying

Name: Cadi, RN
Clinical setting: Ophthalmology clinic
Years in practice: 8
Facility location: Minnesota

I've worked in an ophthalmology clinic for five years; before that, I worked in an inpatient hospice unit. In our clinic, we see a lot of eye emergencies, people with vision loss, and retinopathy from diabetes. Even though we are always alert for underlying diseases contributing to eye disorders, sometimes the most straightforward explanations lead to recovery. I remember Mr. Gershen as a good example. He was a quiet, reserved 78-year-old male who visited our clinic for repeated eye irritation and infections. He had used many over-the-counter medications, including allergy drops and vasoconstricting drops. He had been to multiple urgent care clinics and received treatment for bacterial conjunctivitis. He explained that his symptoms would improve for a few days and then return.

Mr. Gershen was accompanied by his daughter, who was worried about these repeated infections. While taking Mr. Gershen's medical history, he did mention that he had lost his wife one year previously to breast cancer. He apologized for getting teary-eyed when he discussed his wife. The daughter stated that "he still cries a lot, and these infections just seem to make it worse." With further questioning, I discovered that Mr. Gershen experienced emotional crying for extended periods several times per week, sometimes daily. His daughter explained that he was not willing to take any medication for depression or see a grief counselor, and that he felt his grief process was "normal."

The ophthalmologist confirmed my suspicions that Mr. Gershen's recurrent eye irritation was related to his ongoing emotional episodes of crying. Tears caused by emotions contain compounds similar to basal tears. Basal tears are essential lubricating tears for your eyes and contain oil, mucous, water, and salt. In addition to lubrication, they help prevent infection. Emotional tears contain these same components but also contain stress hormones and chemicals that act as painkillers (Cleveland Clinic, 2022). Excessive crying may affect the quality of tears, particularly the amount of oil in the tears, which can lead to a sensation of irritation and visible redness. Without a complete medical history, the conjunctival inflammation could appear similar to an eye infection.

The ophthalmologist discussed the eye condition with Mr. Gershen and his daughter. He prescribed lubricating eye drops. He also discussed seeking grief support to help Mr. Gershen move through the grief process.

Expression of Grief

Grief affects survivors physically, psychologically, socially, and spiritually. The grief process is not orderly and predictable. Emotional fluctuation is normal. There are times when the person experiencing the loss may feel in control and accepting, and there may be other times when the loss feels uncontrolled and unbearable. Normal grief reactions to a loss can consist of physical symptoms, intense emotions, cognitive changes, and outward behavioral changes. These reactions affect social interactions in a variety of ways.

Physical

Individuals experience a range of physical symptoms during acute and long-term grief. Common physical symptoms associated with grief include the following:

- hollowness in the stomach
- tightness in the chest
- weakness
- heart palpitations
- dizziness
- sensitivity to noise
- shortness of breath
- muscle tension
- fatigue
- dry mouth
- eye irritation

These physical changes result from physiologic changes that occur within the body in response to stress hormones triggered by the grief response. Some of these physiological responses include the following:

- blood vessel constriction
- elevated blood pressure
- increased heart rate
- release of inflammatory chemicals
- increased platelet and fibrinogen activity

In addition to bodily sensations, individuals experiencing grief also report intermittent and sometimes chronic changes in their cognitive state. Some examples of cognitive symptoms include the following:

- depersonalization (feeling disconnected from one's own feelings and experiences)
- confusion
- forgetfulness
- trouble concentrating
- dreams of the deceased
- idealization of the deceased
- a sense of the presence of the deceased

By simply naming these common symptoms as part of the natural grieving process, nurses can help normalize the symptoms, thereby reducing an individual's sense of aloneness. Nurses caring for grieving individuals can help distinguish between expected symptoms of grieving and more serious underlying health issues. These symptoms may present as acute physical changes or emotional dysregulation, as previously noted. Much is known about managing physical symptoms associated with emotional dysregulation, and it can be applied to individuals experiencing grief. Nurses can encourage such activities as:

- healthy eating
- staying hydrated
- body movement
- massage
- deep breathing exercises
- maintaining healthy sleep patterns

LIFE-STAGE CONTEXT

Broken Heart Syndrome

Stress-induced cardiomyopathy, also known as Takotsubo cardiomyopathy (TC), is a heart condition often associated with increased stress (Ahmad et al., 2023). It is also recognized as "broken-heart syndrome" within the

healthcare community. While this disorder is uncommon, it presents most often in older women after an acute stress event such as:

- death of a spouse
- death of a relative
- traumatic accident
- diagnosis of medical illness
- extreme financial loss

The pathophysiology of TC is not fully understood, but it is thought to be associated with inflammatory chemicals, microvascular dysfunction, decreased estrogen levels, and coronary spasms, among others (Ahmad et al., 2023). Highly stressful events trigger reduced mobility in the left ventricle muscle fibers. This results in decreased ventricular systolic function, decreased overall cardiac output, and auscultatory systolic murmur. Symptoms are similar to acute coronary syndrome (ACS) or myocardial infarction (MI), including the following:

- chest pain
- shortness of breath
- tachycardia
- bradycardia
- arrhythmias
- systolic murmur

However, lab values suggesting cardiac damage may not show elevation consistent with the symptoms experienced. Because TC mimics other acute heart conditions, nurses should care for patients with TC in the same way as patients experiencing an MI (Ahmad et al., 2023). Patients are stabilized in a hospital setting; however, recovery as an outpatient is expected, with chest pain symptoms typically resolving after several weeks.

Emotional

Physical and emotional symptoms associated with the grief response are closely linked. The physical symptoms of fatigue, chest tightness, breathlessness, or heart palpitations are related to common emotional symptoms such as anxiety, anger, and fear. Conversely, a person may develop anxiety related to physical symptoms associated with grief. Other emotional sensations commonly reported during the grief response include the following:

- numbness
- sadness
- shame
- loneliness
- relief
- yearning (a feeling of intense longing)
- guilt
- self-reproach (harsh self-criticism or disapproval)
- helplessness
- abandonment

Many strategies that are effective at reducing physical symptoms of grieving can also help alleviate emotional distress. In addition, speaking with a specially trained grief counselor can positively impact emotional dysregulation. As individuals progress through the grieving process, nurses can encourage them to do the following:

- Express creativity.
- Accept rapidly changing emotions.
- Practice patience with self and others.
- Incorporate frequent self-care activities.
- Express feelings in an emotionally safe environment.
- Maintain a consistent routine.
- Maintain connection with the deceased.
- Maintain connection with family and friends.
- Reach out to community through support groups.

LINK TO LEARNING

Coping with grief is difficult, but nurses can promote simple tasks to help patients maximize their support during the different stages of grief. While formal counseling may benefit some, focusing on simple, day-to-day tasks such as getting proper sleep, hydration, and nutrition can also be highly effective. Check out this article on ways to encourage and support patients through the grief process (https://openstax.org/r/77GriefProcess) to learn more.

Social

Individuals may have difficulty interacting with others during the initial stages of grief. People report having trouble maintaining conversation, making plans, and attending social gatherings, even with close family and friends. This social disruption can last indefinitely and is also associated with increased stress levels and many of the physical and emotional symptoms previously discussed. Individuals may struggle with tasks and interactions such as the following:

- work performance
- uncontrollable crying
- social withdrawal
- over-reactivity
- changed relationships
- avoidance of reminders of the deceased
- rage or anger

Anger is a volatile emotion common for those experiencing a loss, particularly an unexpected one. Anger may be held inward or directed outward toward others. Nurses should encourage individuals to verbalize their anger and offer compassionate listening without judgment as a way for people to work through their feelings of anger.

Concepts of Loss

While loss is often thought of in the context of death and dying, many examples of loss are not associated with death. Some loss is perceived only by the individual experiencing it; other types of loss are readily visible to other individuals. This variation in types of loss may affect the grieving process. Table 36.1 explains the various concepts of loss.

Concept	Explanation	Examples
Actual loss	Actual loss refers to the tangible, measurable loss of something that was once possessed or experienced.	The death of a loved one, loss of a job, loss of a limb in an accident
Perceived loss	Perceived loss is the subjective experience of loss, even if no tangible loss has occurred.	Feeling a sense of loss after a breakup or divorce, loss of a cherished dream or goal
Anticipatory loss	Anticipatory loss involves experiencing grief and mourning in anticipation of an impending loss.	Grieving the impending death of a terminally ill family member or pet

TABLE 36.1 Concepts of Loss

Concept	Explanation	Examples
Maturational loss	Maturational loss refers to the loss experienced as a result of developmental milestones and life transitions.	Leaving home for college, retirement, becoming an empty-nester
Situational loss	Situational loss is the loss experienced due to specific circumstances or events.	Loss of a home due to a natural disaster, loss of financial stability after bankruptcy

TABLE 36.1 Concepts of Loss

Actual Loss

In addition to death, individuals may experience loss as the absence of an individual, a pet, a possession, a relationship, a job, a body part, or overall health. In **actual loss**, the absence is clearly noticed by others. This support reinforces the validity of the grief process and allows individuals the social and cultural space for grieving.

Perceived Loss

A **perceived loss** is more complex in that the loss may not be evident to others. There is no observable loss, but the individual distinctly feels an absence. This may occur in a variety of situations, such as the following:

- disruption in identity
- changes in mental acuity
- change in housing stability
- loss of independence
- decreased mobility
- change in friendship dynamics
- disruption in spiritual beliefs
- loss of trust

PATIENT CONVERSATIONS

Perceived Loss

Scenario: Carlyn is a retired 75 year old who enjoys taking walking tours around the world and hiking with her children and grandchildren in national parks around the country. She also enjoys reading, trying new restaurants, and drawing. Over the last year, she has been struggling with pain in her right knee after a fall during a hike. Carlyn has been unable to complete any hikes over one mile long during the past year. Her daughter is concerned that Carlyn is depressed and convinces Carolyn to make an appointment with her primary care provider today. Jace, an RN, is taking Carlyn's history.

Nurse: What brings you in today, Carlyn?

Patient: My daughter thinks I am depressed. She is concerned because I haven't planned any trips and am just not interested in eating out anymore. She says I stay inside all the time, which is unlike me.

Nurse: Your daughter must be really worried about you. It sounds like you are feeling a lack of interest in your usual activities. Are you feeling down or depressed or having trouble sleeping?

Patient: I'm sleeping fine, but I am feeling down because of my knee.

Nurse: I know your knee has been painful over the last year. Do you think this pain is contributing to your decreased activity level?

Patient: Well, my pain has been better in the last few months, but that's because I have been taking it easy. I can't hike anymore, and all my travels in the past have been walking tours. I really miss that. I know it seems silly, but I really feel like I lost part of myself when I stopped being able to hike.

Nurse: Have you expressed these feelings before or talked about them with your family?

Patient: Not really; I don't think anyone can understand that being unable to walk and hike changes how I see the world. Sometimes, I feel overwhelmingly sad about this.

Nurse: Carlyn, I think you may be dealing with grief related to the loss of hiking. This type of loss is referred to as a perceived loss. It is sometimes complicated for others to understand perceived losses because they can't see or feel the loss themselves; however, grieving the loss of a vital part of your identity, such as hiking, is essential. I encourage you to let yourself feel the sadness as grief and seek a counselor or support group to help you with coping skills.

Patient: Thank you, Jace, for listening. And for helping me understand this is a normal feeling that others might not understand. I will talk with my family so we can come up with ways for me to cope with this grief.

Anticipatory Loss

When an individual expects or foresees a loss or change it is known as **anticipatory loss**. This type of loss creates anxiety about a loss before it happens. Anticipatory loss is common and occurs in situations such as the following:

- chronic illness
- terminal illness
- cognitive changes such as dementia
- divorce
- expected changes in life stage

Anticipatory loss can cause a prolonged grieving process as well as create relationship tension if a person begins to withdraw prematurely from social connections. For example, a grandmother may feel anger, guilt, and sadness, anticipating the loss of being present as her grandchildren grow up. She may feel compelled to overextend herself physically and emotionally to spend time with them. A father may feel anxiety and anger associated with the anticipated loss of time with his children after a divorce. This may lead to conflict in creating a parenting plan with his ex-spouse. Nurses can engage with patients about anticipatory loss similarly to actual loss. Bringing in coping mechanisms will help in the present moment and also help prepare the individual for when the actual loss occurs.

Maturational Loss

A **maturational loss** occurs at predictable intervals during an individual's life span. They are often tied to life stages (Table 36.2) (Child Care Resource Center, n.d.). Every individual will experience them differently. Maturational losses may lead to grief responses for some people; other people may simply experience them as a process of moving forward to a new stage of life.

Life Stage	Triggers for Maturational Loss
Early childhood	• Change in attention or physical affection from caregivers • Separation from family for daycare or preschool
Middle childhood	• Adjustment to teacher-student relationship • Change in expectations associated with school or activities • Loss of time independence

TABLE 36.2 **Maturational Losses**

Life Stage	Triggers for Maturational Loss
Adolescence	• Loss of physical contact with caregivers • Loss of simplicity of childhood • Change in identity from child to teen • Loss of pleasure in imaginative play • Change in the structure of childhood • Loss of protective status for parents • Loss of childhood identity
Early adulthood	• Moving out of childhood home • Adjustment to independent decision-making • Loss of independence if entering long-term relationship
Childbearing	• Loss of time freedom • Reduced energy
Middle adulthood	• Loss of energy level • Pressures of productivity • Changes in physical abilities • Loss of parents due to age/death
Older adulthood	• Loss of physical ability • Changes in health • Retirement • Change in routine • Change in productivity or meaning in life

TABLE 36.2 **Maturational Losses**

LIFE-STAGE CONTEXT

Grief in Children

Children understand and process death differently than adults. The grief process and symptoms in children vary based on the age of the child. Young children may be unable to verbalize their emotions and feelings, but support is crucial at any age.

Symptoms of grief in younger children include nervousness, uncontrollable rages, frequent sickness or accidents, rebellious behavior, hyperactivity, nightmares, depression, compulsive behavior, memories fading in and out, excessive anger, overdependence on the remaining parent, denial, and disguised anger. Children may not understand that death is permanent until they are in preschool or older. To help facilitate this understanding, it is important to use the word “death” and not euphemisms like “gone to sleep” or “gone away.”

Symptoms of grief in older children include difficulty concentrating, forgetfulness, decreased academic performance, insomnia or sleeping too much, compulsiveness, social withdrawal, antisocial behavior, resentment of authority, over-dependence, regression, resistance to discipline, suicidal thoughts or actions, nightmares, symbolic dreams, frequent sickness, accident proneness, overeating or undereating, truancy, experimentation with alcohol or drugs, depression, secretiveness, sexual promiscuity, and running away from home.

Play is the universal language of children, so nurses should use it therapeutically when possible. Reassuring children that their grief is “normal” can give them comfort. If necessary, refer children, parents, and families to grief

specialists.

Situational Loss

A **situational loss** can encompass other types of loss but primarily describes losses associated with expected or unexpected life changes for an individual. These can include the following:

- loss of potential to have children
- loss of hope for achieving a dream
- loss of friends due to moving
- loss of body image
- loss of control
- loss of freedom
- loss of physical or emotional safety
- leaving childhood home
- going away to college
- moving to a new home
- graduating from school
- starting a new school

Situational losses may be sudden or anticipated. Situational grief is highly variable, with some individuals reacting with prolonged symptoms and others not having a grief response at all.

Reactions to Grief and Loss

Reactions to loss and grief are often profoundly personal, but they are also affected by cultural and social expectations. Sometimes the reactions of others, including family, friends, and the wider community, can affect the grief process. Furthermore, a variety of cultural differences are associated with grieving.

Researchers have developed frameworks (e.g., Engel's Six Stages, Kübler-Ross's Five Stages) that are helpful for nurses in visualizing the stages of grief. Having a clear understanding of these stages allows nurses to support patients and families during the grief process. Based on these concepts, nurses will recognize specific emotional reactions as symptoms of grief and can help equip patients with appropriate coping strategies. Though the stages of grief provide a helpful framework, nurses must remember that each individual progresses through the experience of loss at their own pace. Setbacks and fluctuations through the stages are typical and even expected.

Engel's Six Stages

American psychiatrist George Engel proposed his theory of grief in 1961. He wanted to answer the question, "Is grief a disease?" His answer compares the death of a loved one to a physical injury. The loss creates similar responses in the body as a physical wound, and the grief response is essentially a deviation from a normal state of health. The body requires a certain process to return to a state of normalcy or health. According to Engel, this process of grief consists of six stages (Registered Nursing, 2023):

- shock and disbelief
- developing awareness
- restitution
- resolving the loss
- idealization
- outcome

While the timeframe to proceed through these stages is not universal, Engel believed these stages occur sequentially. Initially, the person experiencing loss through death is in a state of disbelief, or shock, and refuses to accept the loss; some individuals report not feeling their loss as real. This is followed by an awareness of the finality of the death, after which they work through their own personal and cultural rituals in response to grief. As a sensation of resolution begins to occur, the individual may attend support meetings and open up with friends and family about the loss. Exhibiting a sense of idealizing the deceased person is also common. During the final stage, or outcome, Engel proposed that healing and maximum coping occurs, allowing the bereaved to adjust to life without the deceased.

Kübler-Ross's Five Stages

A few years after Engel proposed his stages of grief, Swiss psychiatrist Elisabeth Kübler-Ross identified five main stages of grief: denial, anger, depression, bargaining, acceptance (Tyrell et al., 2023). Patients and families may experience these stages along a continuum, move randomly and repeatedly from stage to stage, or skip stages altogether. As Figure 36.2 illustrates, there is no correct way to grieve, and an individual's needs and feelings must remain central to care planning.

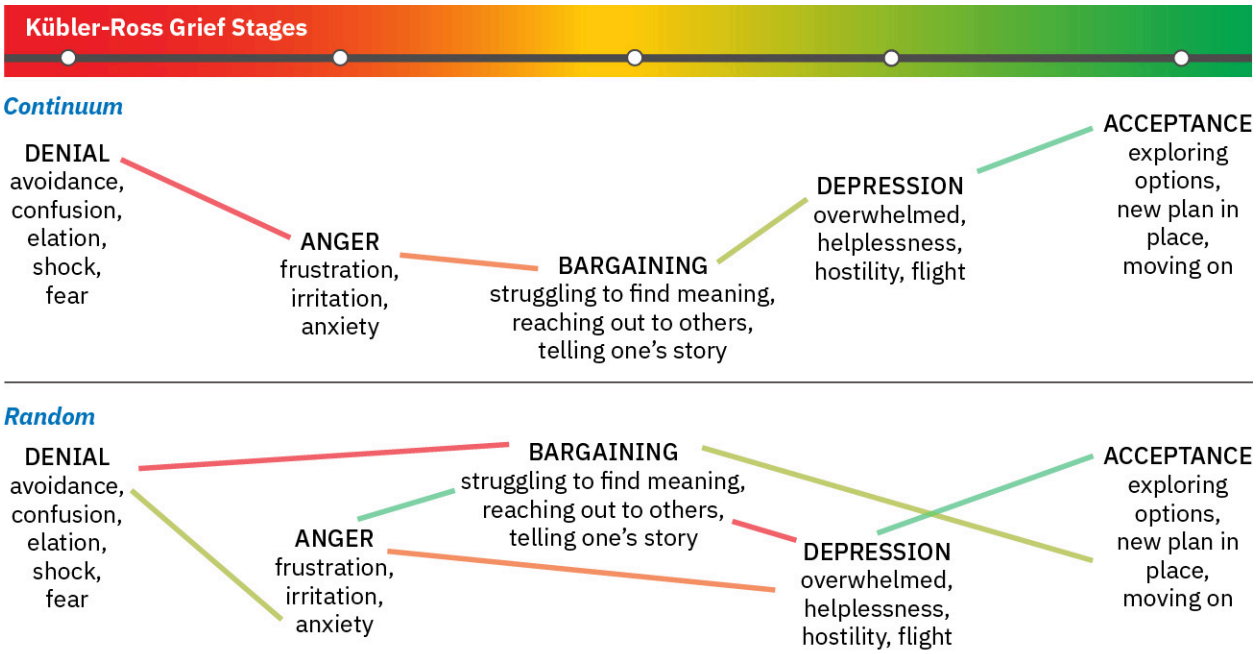

FIGURE 36.2 The Kübler-Ross grief cycle explains the normal grief process; however, it is common to fluctuate and move randomly through the stages, particularly in cases of complicated grief. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Denial

When the grieving individual refuses to acknowledge the loss or pretends it isn't happening, **denial** occurs. The feeling of denial is self-protective, as the individual attempts to numb overwhelming emotions as they process the information. The denial process can help to offset the immediate shock of a loss. Denial is commonly experienced during traumatic or sudden loss or if other unexpected, life-changing events occur. For example, a patient who presents to the provider with a severe headache and receives a diagnosis of terminal brain cancer may experience feelings of denial.

Anger

In the grief process, **anger** often masks pain and sadness. The subject of anger can be quite variable: displeasure or hostility may be directed at the individual who was lost, internalized against the self, or projected toward others. Additionally, an individual may lash out at those uninvolved with the situation or have bursts of anger that seemingly have no apparent cause. Healthcare professionals should know that anger may often be directed at them as they provide information or care. Healthcare team members, family members, and others who become the target of anger must seek to recognize that it is not a personal attack but rather a manifestation of the challenging emotions that are a part of the grief process. The nurse can provide a supportive presence and allow the patient or family member time to vent their anger and frustration while maintaining boundaries. Rather than focusing on what to say or not to say, allowing a safe place for a patient or family member to verbalize their frustration, sorrow, and anger can offer great support.

Bargaining

During the grief process **bargaining** can occur as the bereaved attempts to regain control over the loss. When individuals enter the bargaining phase, they seek ways to change or negotiate the outcome, regardless of whether this is realistic or even possible. Some may try to "make a deal" with God or their higher power to take away their pain or change their reality; they may promise to live a better life or give more of themselves to religious practices if

only the circumstances were different. For example, a patient might say, "I promised God I would stop smoking if He would heal my wife's lung cancer."

Depression

Prolonged sadness that affects an individual's ability to perform everyday tasks is called **depression**. As part of the grief process, depression can manifest as intense sadness over the loss of a loved one or a similarly life-changing situation. It can cause a loss of interest in activities, people, or relationships that previously brought one satisfaction. It is not uncommon for individuals in the depression stage of grief to experience irritability, sleeplessness, significant fatigue, and loss of focus or energy. Simple tasks such as getting out of bed, showering, or preparing a meal can feel so overwhelming that individuals withdraw from activity. They may struggle to find meaning in their life or to identify their sense of personal worth or the value of their contributions. Depression can be associated with ineffective coping behaviors, and nurses should watch for signs of self-medicating with alcohol or drugs to mask or numb depressive feelings.

Acceptance

The final stage of grief, **acceptance**, happens when the individual understands their loss and acknowledges their new reality. They begin to re-engage with others, find comfort in new routines, and even experience happiness with life activities again. The acceptance phase does not mean the absence of sadness or struggle; rather, it signifies the individual's ability to cope with the grief experience.

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 6

Mr. Morales is at the oncology clinic, accompanying his wife who is undergoing treatment for aggressive breast cancer. The oncologist has just explained that Mrs. Morales has a type of cancer that is not responding effectively to treatment and hospice care is recommended at this time. Mr. Morales is visibly upset and states, "No. No. This can't be happening. She's young and healthy! This isn't fair! You're wrong! I want a second opinion right now. Get out and get someone in here that can give us a better answer!" Mrs. Morales begins to cry and says, "No. I refuse to believe it. I've been doing my treatments every day like I should. There's no way this is true."

1. Recognize cues: What cues are important for the nurse to recognize in this situation?
2. Analyze cues: Based on the Kübler-Ross grief cycle, which stage do Mr. and Mrs. Morales appear to be in?

Tasks of Grieving

Other experts also describe the normal grieving process in terms of tasks that one must accomplish. These tasks include notification and shock, experiencing the loss, and reintegration.

- Notification and shock: This phase occurs when a person first learns of the loss and experiences feelings of numbness or shock. The person may isolate themselves from others while processing this information. The initial step for the individual is to accept the reality of the loss by evaluating and acknowledging it.
- Experiencing the loss: The second task involves experiencing the loss emotionally and cognitively. The person must work through the pain of separation and grief by reacting to and expressing it.
- Reintegration: The third task involves reorganizing and restructuring family systems and relationships by adjusting to the environment without the deceased. The person must form a new reality without the deceased and adapt to a new role, while also retaining memories of the deceased.

As a nurse, you can greatly assist patients and family members as they move through the grieving process by being willing and committed to spending time with them. Listen to their stories, be present, and witness their pain. Remember that you cannot fix everything, but taking time to assess their symptoms of grief helps you identify other resources for support.

Complicated and Dysfunctional Grief

A disorder called **complicated grief** can occur after the death of a significant other. With this, the experience of distress accompanying bereavement fails to follow normative expectations and manifests in functional impairment.

A specialized grief therapist may be necessary to address complicated grief.

CLINICAL JUDGMENT MEASUREMENT MODEL

Generate Solutions: Grief After Suicide

Nurses generate solutions by identifying actions or interventions to best address patient issues. Recognizing solutions to help patients cope with grief after the suicide (death caused by intentional harm to oneself) of a loved one is crucial. Suicide is often associated with complicated grief patterns that nurses must recognize to provide essential care. Nurses can watch for factors that can signal complicated grief that fails to follow normal expectations and leads to functional impairments. Complicated grief can present with the following:

- prolonged anxiety
- symptoms of post-traumatic stress disorder
- survivor guilt
- substance misuse
- prolonged sleep disorders
- nightmares
- lack of concentration
- inability to pursue everyday tasks

By identifying specific risk factors and common patterns of complicated grief, the nurse can create a safe environment for the patient to express themselves. With a nonjudgmental attitude, the nurse can help the patient seek support services, grief counseling, and mental health services as appropriate.

Complicated grief may become **dysfunctional grief** in which grief does not resolve as expected or an individual resorts to unhealthy coping strategies. This type of complicated grief is more common in response to traumatic deaths, violent deaths, unexpected deaths, death of romantic partners, and in parents experiencing the loss of a child. Dysfunctional grief may or may not follow the typical pattern of processing through the grief stages, but it frequently leads to secondary physical and emotional problems. Table 36.3 displays types of dysfunctional grief, including chronic grief, delayed grief, exaggerated grief, and masked grief.

Type of Dysfunctional Grief	Clinical Example
Chronic grief	A 70-year-old man continues to sob on a regular basis and has difficulty taking care of himself three years after the death of his wife in a car accident.
Delayed grief	A 16-year-old girl insists on continuing all her activities, social engagements, and school projects after the death of her mother. For many months, she tells her friends and family that she is “fine.” During her birthday celebration, she is overwhelmed with sadness and begins to exhibit normal grief reactions.
Exaggerated grief	An 8-year-old boy expresses grief in response to the death of his older brother by experiencing nightmares, extreme fear of illness, and misbehaving at school.
Masked grief	The son of a 70-year-old woman is concerned when his mother begins to experience new symptoms, such as heartburn and headaches, after the death of her husband.

TABLE 36.3 Types of Dysfunctional Grief

To assist in treating complicated and dysfunctional grief, providers typically obtain a comprehensive grief assessment of the bereaved. A variety of standardized clinical tests can be used for this purpose, including the following:

- Pathological Grief Items Checklist
- Hamilton Rating Scale for Depression
- Inventory of Complicated Grief
- Hogan Grief Reaction Checklist
- Beck Depression Inventory
- Texas Inventory of Grief
- Social Adjustment Scale

LINK TO LEARNING

Standardized and validated questionnaires such as the Inventory of Complicated Grief (https://openstax.org/r/77GriefInvntory) can help nurses accurately evaluate grief and provide appropriate interventions based on the results.

36.2 Concepts of Death and Dying

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the concept of death
- Examine the effects of terminal illness
- Recognize the nurse's role in death and dying

Compassionate care during death and dying is a fundamental role of the nurse. Understanding the pathophysiological and outward physical changes that occur during the dying process allows nurses to create individualized care plans. Nursing interventions include care for the dying individual as well as family members coping with death, dying, and grief.

Unless death is immediate, as in violent or traumatic death, nurses can anticipate some of the physical changes that will occur. Nurses can educate patients and families about what to expect, anticipate symptoms, and provide individualized treatments focused on alleviating pain and discomfort. This highly responsive care is the basis for providing dignity and comfort for the dying.

Concept of Death

The concept of **death** is commonly defined as the cessation of biological life functions, though specific conceptions of death may vary based on cultural and spiritual beliefs. How individuals think about death and dying can directly affect the process of death in an emotional as well as a physical sense. Individuals may experience emotions about death on a continuum from fear to peace, and these emotions may fluctuate within one individual over time.

As the body ceases to function, **physiological death** occurs, eventually rendering the individual unable to engage in necessary basic processes such as breathing and eating. When the individual begins to face their impending death and consequently regresses into the self, **psychological death** occurs. A daughter caring for her mother with terminal colon cancer may notice that after a period of expressing fear of dying, her mother becomes quiet and minimally responsive. She keeps her eyes closed and responds only to physical touch. When others, perhaps unable to effectively cope with the imminent loss and its implications, withdraw from the dying individual, this is known as **societal death**. For example, a granddaughter may make a final visit to her grandfather with terminal lung cancer several days before his actual death. She states that she is saying goodbye now because she does not want to see him suffering.

Pathophysiology of Death

The pathophysiology of death explains the outwardly visible physical changes to the individual and the internal organ functions that deteriorate during the dying process. These changes may progress quickly or slowly. Many of these changes can be predicted and expected; however, not every individual experiences every symptom of dying. This is particularly true if the death is sudden rather than prolonged. The active dying process has three stages: early, middle, and late. Each stage has specific changes in behavior and physical changes in the body that influence the individual's appearance (Traditions Health, 2022). See Table 36.4 for an overview of the pathophysiological

changes associated with each stage of death.

System	Stage of Death	Pathophysiology	Physical Changes
Cardiovascular	Early	• Slight decrease in heart rate and blood pressure • Mild peripheral circulation changes	• Slightly cool, clammy skin
	Middle	• More noticeable decrease in heart rate and blood pressure • Reduced cardiac output • Reduced perfusion	• Mottling of the skin • Cyanosis of extremities
	Late	• Significant decrease in heart rate and blood pressure • Peripheral circulation greatly diminished • Possible arrhythmias	• Pronounced cyanosis • Possible edema
Respiratory	Early	• Slight changes in breathing patterns • Occasional shortness of breath	• Mild dyspnea (shortness of breath)
	Middle	• Irregular breathing patterns (e.g., Cheyne-Stokes respiration) • Weakening cough reflex	• Noticeable shortness of breath • Use of accessory muscles for breathing
	Late	• Markedly irregular and labored breathing • Significant decrease in respiratory rate • Accumulation of secretions in the airways (death rattle)	• Audible respiratory secretions • Severe dyspnea
Neurological	Early	• Mild confusion or disorientation • Decreased attention span	• Slightly decreased responsiveness
	Middle	• Increased confusion and disorientation • Reduced response to stimuli	• Pronounced confusion • Agitation

TABLE 36.4 **Changes Associated with Each Stage of Death**

System	Stage of Death	Pathophysiology	Physical Changes
	Late	• Decreased consciousness • Loss of motor and sensory functions • Possible terminal agitation or delirium	• Unresponsiveness • Possible seizures
Gastrointestinal	Early	• Decreased appetite • Reduced bowel movements	• Mild nausea
	Middle	• Significant decrease in appetite and intake • Slowing of digestive processes • Possible constipation or diarrhea	• Noticeable weight loss • Abdominal discomfort
	Late	• Minimal or no intake • Possible bowel incontinence	• Severe weight loss • Distended abdomen
Urinary	Early	• Slight decrease in urine output	• Slightly concentrated urine
	Middle	• More noticeable decrease in urine output • Concentrated urine	• Reduced urine output
	Late	• Significant decrease or cessation of urine output • Possible kidney failure	• Anuria (no urine output) • Edema
Musculoskeletal	Early	• Mild weakness and fatigue	• Slightly reduced muscle strength
	Middle	• Increased weakness and fatigue • Difficulty swallowing (dysphagia)	• Noticeable muscle atrophy
	Late	• Loss of muscle tone • Possible muscle twitching or jerking (myoclonus)	• Severe muscle atrophy • Involuntary muscle movements
Integumentary	Early	• Cool, clammy skin	• Slightly pale skin
	Middle	• Mottling of the skin • Decreased skin elasticity	• Pronounced mottling • Skin breakdown

TABLE 36.4 Changes Associated with Each Stage of Death

System	Stage of Death	Pathophysiology	Physical Changes
	Late	• Pronounced cyanosis • Pressure ulcers due to immobility	• Extensive skin breakdown • Pressure ulcers
Immune	Early	• Mild decrease in immune response	• Slightly increased susceptibility to infections
	Middle	• Increased susceptibility to infections	• Noticeable signs of infection (e.g., fever, inflammation)
	Late	• Compromised immune response • Decreased ability to heal	• Severe infections • Poor wound healing

TABLE 36.4 Changes Associated with Each Stage of Death

Early Stage

During the early stage of dying, there may be few visible changes, depending on the underlying disease process. The human body begins to conserve energy in this early stage, resulting in a reduced appetite and a lack of interest in food. Patients may experience trouble swallowing, feeling full after consuming a small amount of food, and decreased pleasure sensation from food. For some individuals, chewing, swallowing, and digestion may become painful due to dry mouth, oral sores, dry throat, and bloating. This is the body's sign that fewer nutrients are needed. This stage is often difficult for family members and caregivers, since providing nourishment is essential to caregiving.

Middle Stage

The middle stage of the dying process can last anywhere from a few hours to days. Nurses will notice predictable and expected physical changes that suggest a slowing of bodily functions. The physical changes noted during the middle stage of dying result from physiological changes, such as a reduction in peripheral circulation as blood flow is reserved for the functioning of primary internal organs. Changes to internal blood circulation result in findings such as low blood pressure, irregular breathing patterns, and bradycardia (slow heart rate). Visible changes include cool hands and feet, a sensation of being cold, and paling or darkening of the skin. Decreased circulation in the skin may result in **pallor**, an extremely pale hue of the skin, or **mottling**, a bluish-red, lace-like (reticular) coloration of the skin (Figure 36.3). Many of these circulatory effects also result in weakness and fatigue. Less blood to the brain may also affect cognition and verbal response, leaving some individuals unable to speak. The inability to communicate effectively often leads to social withdrawal. However, individuals can still experience touch, hearing, and emotions.

FIGURE 36.3 Mottling appears as a bluish-red, lacelike (reticular) pattern in the skin in response to decreased peripheral circulation. (credit: modification of "Thromboembolic complication in essential thrombocythemia." by National Library of Medicine, CC BY 2.0)

LINK TO LEARNING

Learn techniques for helping family members connect with loved ones at the end of life (https://openstax.org/r/77DeathConnect) even if the patient is unresponsive.

Late Stage

Depending on the cognitive and physical state before the initiation of the dying process, individuals may experience progressive failure of body organ systems. Because circulation is reduced to major organs, breathing muscles may be less effective and unable to clear secretions. This results in sporadic, shallow, or noisy breathing. Individuals may show respiratory changes such as labored breaths and periods of **apnea**, temporary pauses in breathing. Also, bowel or bladder incontinence may result due to a lack of muscle tone in the bowel or bladder. Patients may have little or no urine or stool output due to reduced metabolism and processing of nutrients. Skin changes progress to include widespread mottling. Continued circulatory changes include pronounced bradycardia and hypotension (low blood pressure). During this later stage, patients may become extremely restless, especially if the work of breathing is significantly impaired. Patients lose interest in food and may develop abdominal ascites as the liver is less effective in processing waste products.

REAL RN STORIES

Compassion During Impending Death

Name: Edela, RN
Clinical setting: Outpatient hospice
Years in practice: 20
Facility location: Various client homes in Chicago, Illinois

I've worked as a hospice RN for nearly 20 years. I have witnessed the spectrum of end-of-life situations. I started out working in an emergency department and saw the effects of traumatic deaths on family members. Most of the patients and families I care for now are experiencing death from an illness or disease with a somewhat anticipated death. However, this does not make the stage of impending death any easier. Each patient and family is different, but over the years I have developed some tips for supporting the family during this challenging stage.

One family stands out as an example. This family was moving toward the late stages of dying and into the stage of impending death with their 17-year-old son, who had osteosarcoma. The primary goal of his hospice treatment was pain control and comfort care. As he progressed into the stage of impending death, his mother became increasingly agitated by his unresponsiveness, irregular breathing patterns, and inability to eat or drink. She expressed concern that he was starving or suffocating and wondered if they should have considered other treatments to make him more comfortable.

While the patient was resting quietly during one of my visits, I spoke with his mother privately. I used visual handouts to explain the process of slowed digestion and irregular breathing. I explained to her the data that suggest that individuals can still hear and feel emotion late in the dying process. She cried and explained to me that she was not sure how to talk to her son when he could not respond. I encouraged her to continue to read aloud to him, as this was one of their long-time bonding activities. We agreed that I would request orders for medications to reduce the secretions associated with his breathing. I provided her with soft swabs to keep his lips moist, even though he could not drink. She expressed her gratitude for helping her better understand the process and maximize the quality of her time with her son.

Caring for the family is crucial during the stage of impending death, and individualizing care shows a high level of care and personalization that will set you apart as a caregiver.

Physical Signs of Impending Death

Physical signs that signal impending death typically occur during the last hours before death. Sometimes, these are continuations of previous symptoms and may be more pronounced during this stage. Signs of impending death may

include terminal restlessness or terminal agitation. Individuals often have a fading of consciousness or even periods of unconsciousness. Sensory changes, including illusions, delusions, hallucinations, and death awareness, may occur (Hospice Foundation of America, 2023). Additional changes to breathing patterns are often a sign of impending death. **Cheyne-Stokes breathing** is a pattern of abnormal breathing characterized by progressively deeper and sometimes faster breathing, followed by a gradual decrease that results in a temporary stop in breathing (apnea), while **agonal breathing** refers to gasping or labored breaths that may be followed by periods of apnea lasting many seconds.

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 7

Refer back to Unfolding Case Study #5: Part 6 for a review on the patient data.

After taking some time to think about options, Mr. and Mrs. Morales make the decision to pursue hospice care. They are currently waiting for the palliative care and hospice team to come discuss more specific information about what to expect.

Hospice Nursing Notes	**1400:** Completed intake assessment for Morales family. Agreed to start hospice nursing services in their home beginning tomorrow. DNR order in place. Mr. Morales expresses concern over what to expect in terms of the dying process. Discussed expectations at length with family. All questions and concerns addressed at this time.

3. Prioritize hypotheses: What kind of information should the nurse anticipate Mr. Morales might want to know based on his questions about what to expect during the dying process?
4. Generate solutions: What specific information can the hospice nurse provide to Mr. and Mrs. Morales about what to expect during the dying process?

Terminal Illness

Also referred to as life-limiting disease, **terminal illness** refers to a disease state for which no cure is known. As the name suggests, a terminal illness is expected to end with death; however, the classification of a terminal illness does not delineate any specific time frame for death to occur. In the age of new and rapidly advancing medical treatments, terminal illness may encompass diseases that are not expected to result in death in a short period. Depending on the disease state, life expectancy after diagnosis can vary widely between people diagnosed with the same terminal disease. A diagnosis does not imply terminality; instead, prognosis based on symptoms guides the classification of whether a disease state is terminal. Terminal illness definitions related to hospice care specify that the illness must reduce the life expectancy to less than six months (National Institute on Aging, 2021). Examples of diseases that may lead to terminal illness include the following:

- cancer
- dementia
- stroke
- multiple sclerosis
- Huntington disease
- muscular dystrophy
- HIV
- end-stage heart, lung, kidney, or liver disease

The type of terminal illness and prognosis affect how patients and families respond, how the treatment is provided, and how insurance companies cover costs.

LIFE-STAGE CONTEXT

Terminal Illness in Children

The diagnosis of terminal illness in children poses several challenges as compared with adults. Terminal illnesses in children tend to be:

- caused by rare diseases
- associated with specialized care
- associated with very short or very long duration of illness

While caring for the family is part of the nurse's role regardless of the age of the terminally ill patient, caring for families of children with terminal illnesses poses unique challenges. These challenges include factors associated with the following:

- travel to treatment centers
- costs of family travel
- family dynamics associated with siblings
- sibling visitation
- financial burden to the family depending on insurance status
- emotional burden on siblings
- high levels of fear and anticipatory grief

By anticipating these challenges, nurses can proactively provide families with options, care, and support resources. A team approach is crucial in helping these families. Nurses coordinate care and work directly with social workers, providers, specialists, home care providers, and palliative care providers to create the best care plan for the patient and family.

Effects on Patient

The psychological effects of receiving a diagnosis of a terminal illness can be profound. While we know death is inevitable, being told that a specific disease is likely to deteriorate one's health and ultimately take one's life is life-altering. Individuals may experience psychological symptoms, including anxiety, anger, and fear, many of which are the same emotions experienced during a grief response. And like the grief response, people react in different ways to terminal diagnoses. By employing coping strategies similar to those used during actual loss or grief, nurses can help patients maintain the best quality of life for the duration of their illness.

Effects on Family

Patients and family members often experience similar emotional reactions to terminal illness diagnoses. A significant change in life expectations and timeline is anticipated, and a sense of distress, panic, and grief may ensue. Terminal illness may change family dynamics as family roles change, treatment plans progress and change, and the dying individual experiences increased care needs at the end of life.

The Nurse's Role

The nurse's role in caring for patients with terminal illnesses focuses on facilitating communication between patients, family members, healthcare providers, and ancillary care providers. Effective communication creates an atmosphere centered on maintaining quality of life and following patients' wishes. Nurses may work in palliative care, providing direct treatment to clients, or in hospice care, providing and coordinating comfort care at the end of life. Emotional support for families is crucial to nursing care at this stage. Education may involve teaching family members how to care for or assess patients, as well as what to expect and how to manage the expected physical and cognitive changes at the end of life. This information can be invaluable for easing the fear often experienced as a terminal illness progresses. It can also help to prevent **compassion fatigue**, the emotional toll experienced by individuals caring for others, and to identify caregivers who require a temporary break from their duties.

Communication

Interpersonal communication techniques are crucial in grief, loss, death, and dying. Patients, family members, and other loved ones are in vulnerable emotional states and require patience, consideration, and a calm presence.

Nurses must respect different values and beliefs about death and offer clear and factual information to help family members cope with changes.

Helping caregivers and families understand how to communicate with the dying patient is also the nurse's role. They must explain the importance of continued verbal communication, even if the person is unresponsive. Studies based on brain responses to auditory stimuli show that the sense of hearing persists at the end of life (Blundon et al., 2020). While studies cannot measure how a dying person processes the information, researchers are certain that the sense of hearing is present. Loved ones should be encouraged to speak softly, sing, and continue to express themselves verbally with the dying individual. Other studies have explained the benefits of music for terminally ill patients. Music improves the emotional state and mental health of terminally ill individuals, even if physical symptoms are not changed (Gao et al., 2018).

Emotional Support

Emotional support is necessary for the patient, caregivers, and family members. Each person will react differently to anticipated and actual death. Patients should freely express their wishes, desires, concerns, and fears. Support for caregivers includes **respite care**, which is temporary care for an individual to provide relief to their usual caregiver, and therapy to develop coping mechanisms for processing caregiver burnout. Caregiver burnout and compassion fatigue are similar concepts that explain the emotional toll experienced by individuals caring for others. Both caregiver burnout and compassion fatigue may result in emotional and physical symptoms, signaling a state of stress and extreme exhaustion. Nurses can anticipate possible caregiver fatigue and proactively prepare the caregiver and encourage use of available respite services before burnout occurs.

Emotional support for nurses caring for these patients and families is also crucial. Nurses often face intense emotional strain and can experience compassion fatigue and burnout. Resources available to them include counseling services, peer support groups, and stress management programs. Employers may offer employee assistance programs (EAPs) that provide confidential counseling and mental health resources. Additionally, regular debriefing sessions and access to professional development on self-care techniques can help nurses manage their emotional well-being.

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Clues: Compassion Fatigue

Nurses must diligently recognize clues that can help guide their care actions. In palliative care, nurses may provide as much care for the family as the patient. Compassion fatigue often presents with subtle signs and symptoms that overlap with other reactions to loss and grief. Keeping an open line of communication with family members will alert nurses to symptoms such as the following:

- exhaustion
- irritability
- increased anxiety
- trouble concentrating

These clues alert the nurse that a caregiver requires respite care to continue providing high-quality care for their family member. It may be hard for the family member to acknowledge these feelings without feeling guilty for being unable to take on all the care. Nurses can assure caregivers that physical and emotional rest is critical for their health and the well-being of their loved ones.

Palliative Care

An interdisciplinary approach to specialized medical and nursing care for people with severe and terminal illnesses is called **palliative care**. It focuses on providing relief from pain, physical stress, and mental stress at any stage of disease to improve the quality of life for both the person and their family. Providers who specialize in palliative care have had training tailored to helping patients and their family members cope with the reality of the impending death and make plans for what will happen after. End-of-life care may take on various forms depending on the length of the end-of-life period. However, palliative care actions generally focus on improving or maintaining the quality of life for individuals rather than providing curative medical treatment. Palliative care providers work in a team to provide

comprehensive care for patients with terminal illnesses. While care is individualized, palliative care teams often include the following:

- primary care providers
- nurses
- oncologists
- palliative care providers
- geriatricians
- pain management specialists
- physical therapists
- speech therapists
- occupational therapists
- social workers
- religious leaders
- medical specialists

Palliative care may occur in personal homes, long-term care facilities, or hospitals, and it occurs simultaneously with medical treatments that may improve or prolong prognosis. In the later stages of illness, palliative care may include **comfort care**. These interventions are meant to maintain an individual's physical and emotional comfort during the dying process. Comfort care in palliative care can also occur simultaneously with medical treatments.

Hospice Care

According to the National Hospice and Palliative Care Organization (NHPCO, 2019), the mission of hospice and palliative care is to strive for patients to die pain-free and with dignity. A specific comfort care, **hospice care** is provided at the end of life for patients as well as their families. It involves caring for dying patients by helping them be as free from pain as possible, providing them with assistance to complete wills and other arrangements for their survivors, giving them social support through the psychological stages of loss, and helping family members cope with the dying process, grief, and bereavement. It focuses on five topics: communication, collaboration, compassionate caring, comfort, and cultural (spiritual) care.

Hospice care can be thought of as a type of palliative care, providing many services. However, there are distinct differences between the two (Table 36.5). Hospice care does not involve treatments aimed at curing the disease. The decision is typically made when curative treatments are no longer effective or when the burden of the treatment outweighs the benefits in terms of quality of life compared to the progression of the disease itself. As the dying process progresses, hospice care may involve routine, inpatient, and continuous care. Hospice-trained caregivers also provide respite care to allow family and other full-time caregivers rest time.

Feature	Hospice Care	Palliative Care
Definition	Comprehensive care for terminally ill patients focused on comfort and quality of life	Specialized medical care for people with serious illnesses focused on relieving symptoms and stress
Eligibility	Patients with a prognosis of six months or less to live	Patients at any stage of a serious illness, including those undergoing curative treatment
Goal	To provide comfort and support during the end-of-life process	To improve quality of life by managing symptoms and providing relief from pain and stress
Treatment focus	Symptom management without curative intent	Symptom management with the possibility of curative treatments

TABLE 36.5 Differences Between Hospice and Palliative Care

Feature	Hospice Care	Palliative Care
Duration of care	Limited to the last six months of life	No time limit; provided based on patient need and illness progression
Insurance coverage	Often covered by Medicare, Medicaid, and most private insurance plans	Coverage varies; often included under standard medical benefits

TABLE 36.5 Differences Between Hospice and Palliative Care

Because hospice care is a unique service paid for by insurance, patients must meet specific criteria to qualify for it. Hospice eligibility criteria include a terminal illness diagnosis and an associated life expectancy of six months or less (NHPCO, 2019). Hospice eligibility also requires that patients and healthcare providers limit their treatment goal to achieving, through palliative care and symptom relief, the best quality of life possible during the last days of life. Hospice symptom management is not paired with medical treatments, as in palliative care. Curative treatments are stopped for ineffectiveness as deemed appropriate by the healthcare provider.

Family members who have agreed to put their loved one on hospice may become anxious when the patient begins to experience death. They may believe that feeding or breathing tubes will sustain life and want to change their decision. Hospice workers try to inform the family of what to expect and reassure them that much of what they see is a normal part of the dying process.

Autonomy and Empowerment

Nursing interventions based on self-empowerment enable patients and families to identify and ultimately achieve their own care goals, thus producing a sense of control. Self-empowerment for terminally ill individuals has been associated with a perceived ability to better manage medical actions, changing life roles, and the psychological impacts of the illness (Wakefield et al., 2018).

Treatment plans that can incorporate a sense of control and autonomy into the dying individual's daily life are particularly effective at improving the patient's general attitude and decreasing levels of depression. Active coping (seeking information and working to solve problems) typically produces more positive outcomes than passive coping (characterized by avoidance and distraction). Although each situation is unique and depends partially on the individual's developmental stage, the consensus is that caregivers must foster a supportive environment and partnership with the dying individual, promoting independence, control, and self-respect.

36.3 Factors That Affect Grief, Loss, Death, and Dying

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine influencing factors affecting grief, loss, death, and dying
- Recognize psychological factors affecting grief, loss, death, and dying
- Analyze the types of death and how they affect grief, loss, death, and dying

The processes of death, dying, grief, and loss are highly personal experiences, but they also affect family, friends, and the wider community in a variety of ways. In addition to cultural or religious views on death, many factors affect how individuals, families, and communities respond to a death, care for a dying individual, and process the loss and grief after death. Many factors play a role, including the cause of death, the relationships and family dynamics that existed prior to death, and the ages of the affected individuals.

Influencing Factors

As you have learned, the pathophysiological and physical progressions of death follow a predictable pattern regardless of cause of death or age. However, many other factors contribute to an individual's experience of death or the experience of loss through death. These factors relate to developmental stages, life stages, and family interactions. In addition, nurses may need to focus on cultural, socioeconomic, and psychological factors when providing care for individuals experiencing death or grief.

Developmental Considerations

Developmental considerations for the nurse include the life stage of the dying individual as well as the social stage of the family. The treatment plans, terminal illness progression, family expectations, and grief response to loss will vary, and individuals will experience loss and grief differently, depending on these factors. Age considerations are most pronounced in children; however, the life stage and age of adults also play a role in grief response. Social considerations such as family stage and family cohesiveness affect grief both individually and collectively.

Age Considerations

Individuals' attitudes toward death and dying are linked to their cognitive ability to understand these processes. Infants and toddlers cannot understand death. They function in the present and are aware of loss, separation, and disruptions in their routines. They are also attuned to the emotions and behaviors of significant adults in their lives, so the death of a loved one may cause a young child to become anxious and irritable, cry, or change their sleeping and eating habits in response to the altered behavior of their caregivers.

A preschooler may approach death by asking when a deceased person is coming back; they might even search for the deceased person, thinking that death is temporary and reversible. They may experience brief but intense reactions, such as tantrums or other behaviors like frightening dreams and disrupted sleep, bedwetting, clinging, and thumb-sucking. Similarly, those in early childhood (ages 1–5) may regress to younger behaviors. They might also think that the person's death is their fault, based on their developmental belief in the power of their thoughts and "magical thinking." Their grief might be expressed through play rather than verbally (HealthyChildren.org, 2015).

Those in middle childhood (ages 6–11) begin to see death as final, irreversible, and universal. However, they may not believe that death could happen to them or their family—they may assume it happens only to the very old or sick, or they may view death as a punishment for bad behavior. They may engage in personification, seeing death as a human figure who carried their loved one away (HealthyChildren.org, 2015). Children at this developmental stage may try to keep a bond with the deceased by taking on that person's role or behaviors.

Preadolescents (ages 10–12) are better able to understand both biological and emotional processes of death. However, they may try to hide their feelings, seem indifferent, or have outbursts following the death of a friend or loved one.

Adolescents (ages 12–17) begin to apply logic to abstractions; they spend more time pondering the meaning of life and death and what comes after death (HealthyChildren.org, 2015). Their understanding of death becomes more complex as they move from a binary logical concept (alive or dead) to a more nuanced understanding—including the potential for life after death, for instance. This transition reflects a deeper comprehension of death that acknowledges its complexity and allows for broader interpretations beyond a simple binary classification. Adolescents are also tasked with integrating these beliefs into their identity development.

Young adults (ages 18–35) rely heavily on social support systems for coping strategies. They may have children and, therefore, view mortality and death in relation to the impact on their family. In addition, career plays a large role in the identities of young adults, who may have concerns about the impact of death and grief on their career and financial security.

Middle-aged adults (ages 36–64), when confronted with death and mortality, tend to reflect on life choices and may begin to take personal health considerations more seriously. Adults in this stage more often encounter the loss of parents, and the deaths of other friends and family members become more frequent.

Older adults (ages 65+) may struggle with frequent loss of friends and peers. In addition to grief associated with death, older adults may also struggle with grief related to the loss of function and physical decline. Spiritual reflection is common and may help older adults cope with these losses and the possibility of their own death.

Family Considerations

Family dynamics vary widely, and family members may have differing views on death, dying, grieving, and coping with loss. These views may be affected by the developmental stages of the various family members as well as the age of the dying person. Varying dynamics occur in the context of the loss of a child, parent, grandparent, or sibling. Other factors also play a role, such as whether the death is anticipated or sudden, as well as environmental factors associated with the death. For example, deaths occurring in peaceful and familiar surroundings, with supportive

family members and healthcare professionals present, may facilitate a more peaceful and dignified experience for both the dying individual and their loved ones. Conversely, deaths occurring in chaotic or traumatic environments, such as accidents or disasters, may exacerbate feelings of distress, confusion, and grief.

Coping after a family member's death will depend on family cohesiveness, communication patterns, and expression of emotions. Family roles may change in response to a terminal illness, a death, or the grief process. These changes may include home care patterns, work hours, financial responsibilities, and childcare (Table 36.6). Since many families rely on extended family for support, a loss may trigger a change in living situation, such as an elderly father moving in with his daughter after the death of his wife.

Family Considerations	Possible Family Changes
Cohesiveness of the family	• Increased or decreased closeness • Increased or decreased spiritual connection • Varying grief responses
Family structure and role changes	• Changes in home care patterns • Increased or decreased work hours • Increased financial responsibility • Need for additional childcare • Need for respite care
Communication patterns and expressiveness	• Communication struggles based on expressiveness patterns • Increase or decrease in openly sharing emotions
Support systems	• Increased reliance on extended family • Reaching out to community resources
Pre-existing family stressors/loss	• Increases in financial strain • Trauma response related to multiple losses • Lack of support in estranged family members

TABLE 36.6 Family Considerations During and After Death

The death of a neonatal child can take the form of a miscarriage, stillbirth, neonatal death, or sudden infant death syndrome (SIDS), a term for deaths of children under the age of one which have no identifiable cause. Like people in every age group, children also die from accidents and illnesses. In most cases, parents find the grief almost unbearably devastating, and it tends to hold greater risk factors than any other loss. This loss also bears a lifelong process: one does not "get over" the death but instead must assimilate and live with it. Intervention and comforting support can make all the difference to the survival of a parent in this type of grief, but the risk factors are great and may include family breakup or suicide. Feelings of guilt, whether legitimate or not, are pervasive, and the dependent nature of the relationship disposes parents to a variety of problems as they seek to cope with this great loss. Grieving parents may also experience resentment toward others who experience successful pregnancies.

PATIENT CONVERSATIONS

SIDS: Sibling Grief

Scenario: Darcey is a 28-year-old mother. Her living children are Kaylee, age 6, and Darien, age 4. Darcey and her family recently experienced the death of their youngest child, Aiden, from SIDS four months ago. Aiden was 11 months old. Darcey is struggling with anxiety and depression. She is following up today with her primary care

provider after starting an antidepressant.

Nurse: How are your symptoms of anxiety and depression?

Patient: I've been able to get through the day and care for my other children, but I'm worried about my daughter and that I don't know how to help her cope with Aiden's death. She wants to talk about Aiden all the time, set up puppet shows like she used to for him, and draw pictures of him. I sometimes feel angry when she does these things. I know it is helpful for her, but sometimes I don't want to participate.

Nurse: Do you feel that the medication is helping?

Patient: I do feel the medication is helping, but I don't understand why I am having such strong reactions to my daughter's grief.

Nurse: Your feelings are normal during this time of grief. I can see that you know that your daughter's emotions and actions are also normal. Children often process grief through play.

Patient: I don't know what to do. How can I support my daughter without feeling even more guilty?

Nurse: Asking for help is the first step. We can provide you with a list of adult and child grief counselors. This may help your daughter work through her grief with therapeutic play while you work through your grief in the way that is most beneficial to you.

Patient: I didn't know grief therapy was available for children. I would feel relieved to know someone else could help her without feeling angry or sad about her actions. Thank you for helping me find the right resources.

For a child without support to manage the effects of the grief, the death of a parent may result in long-term psychological harm. This is more likely if the adult caregivers are struggling with their grief and are psychologically unavailable to the child. There is a critical role for the surviving parent or caregivers in helping children adapt to a parent's death. Studies have shown that losing a parent at a young age did not lead to negative outcomes only; there are some positive effects. Some children had increased maturity, better coping skills, and improved communication. Adolescents valued other people more than those who had not experienced such a close loss (Ellis et al., 2013).

When an adult child loses a parent in later adulthood, the experience may be considered "timely" or a normative life course event. This allows adult children to feel a permitted level of grief. However, research shows that the death of a parent in an adult's midlife is not a normative event by any measure but is a major life transition causing an evaluation of one's own life or mortality. Some adults may shut out friends and family in processing the loss of someone with whom they have had the longest relationship (American Cancer Society, 2023).

Socioeconomic Considerations

Socioeconomic factors may play a role in access to care and financial resources available to individuals coping with death and grief. Access to care may be directly related to insurance coverage, transportation, and living situation. Quality of care may be dependent on physical location, finances, and ability to seek care in a timely manner. The impact of a terminal illness is significant, as it hinders not only the well-being of the affected individual but also the capacity of family members to maintain employment. This may put a further burden on already strained financial situations. Struggles with insurance companies to get coverage, particularly for new treatments, are common and add strain for caregivers and individuals experiencing the illness. Other economic considerations in death and dying may involve paying for the care of the body, funeral costs, and the resolution of estates or debts. The financial strain of medical bills following a death can further intensify the financial difficulties families face.

The Hospice Foundation of America notes that not all racial and ethnic groups feel the same way about hospice care. Certain groups may believe that medical treatment should be pursued on behalf of an ill relative as long as possible and that only God can decide when a person dies. Others may feel very uncomfortable discussing issues of death or being near the deceased family member's body. Not everyone holds the view that hospice care should always be used, and healthcare providers must be sensitive to the wishes and beliefs of those they serve. Similarly, the population of individuals using hospice services is not divided evenly by race. Approximately 76 percent of hospice patients are White, while 11 percent are Black, 8.5 percent are Hispanic, 2.5 percent are Asian/Pacific Islander, 0.5 percent are American Indian, and 1.5 percent are unknown or other (NHPCO, 2023).

Cultural Considerations

Nurses must consider cultural factors when caring for individuals encountering death and grief. Cultural values influence how people experience death and whether they respond with particular rituals or mourning practices. Cultural awareness and an atmosphere of inclusiveness must guide nursing care. See Chapter 35 Spirituality to learn more about how several major religions view the concept of death. Individuals who do not identify with a specific religion also have views about death and expectations for care after death, which should be addressed with the same respect shown to individuals identifying as a particular religion.

Psychological Factors

Dealing with death and dying and subsequent grief is a deep burden. Individuals may feel many negative emotions during these processes, including sadness, guilt, fear, and anxiety. These emotions can trigger a new onset of depression or the recurrence of clinical depression. This is particularly true in individuals with poor coping skills or those who are unable to process the death and move through the grieving process. Underlying mental health disorders affect the psychological stability of individuals experiencing grief. These individuals require sensitive support and straightforward discussions about their mental health and safety.

LIFE-STAGE CONTEXT

Grief in the Teen Years

Grief is a universal feeling after a loss; however, teens may require special interventions to help them process loss and grief. Teen reactions can be highly variable, even from day to day. Teens who connect with and trust their peers may succeed in peer counseling groups. These groups may involve sharing and talking, but other activities may also help teens. In the same way that younger children express grief through play, teens may find relief in guided activities such as the following:

- storytelling
- drawing
- creating art
- creating a book
- creating a memorial
- visiting a place that holds meaning with the deceased

Nurses must always be alert for signs of depression, withdrawal, violence, substance misuse, and suicidal ideation in grieving teens. If guided grief therapy or peer interactions are not enough, nurses should not hesitate to refer teens for specialized mental health care.

Fear

Fear may be felt in both dying individuals and individuals fearing the loss of a loved one. Common fears involve their own mortality, their ability to care for themselves, and the potential for financial instability or loneliness. Individuals may not be able to see how they will "go on" after a death. Fear of the unknown is also common pertaining to death. Individuals experiencing the dying process may worry about what comes after death. Those experiencing the death of a loved one may worry about how their life will look and feel after this death.

People experiencing the dying process may fluctuate between periods of fear of dying, fear of pain, and feelings of peace at the end of their lives. Fear may be exacerbated by reactions from family, friends, or even religious leaders.

Anxiety

An overwhelming feeling of apprehensiveness, nervousness, and worry about real or perceived events that have an uncertain outcome is known as anxiety. Anxiety and depression are closely linked; one may trigger or exacerbate the other, or they may occur simultaneously. Individuals who struggle with anxiety may find themselves ruminating and fixating on guilt. Individuals experiencing guilt or regret may have difficulty coming to terms with death. Nurses can encourage individuals to make amends and work through underlying guilt and regret to create a smooth psychological passage through death. Anxiety can be debilitating, particularly if the sensation of anxiety escalates into panic. Anxiety can trigger frightening physical symptoms that are often mistaken for other disorders, including

the following:

- chest pain
- trouble breathing
- heart palpitations
- nausea
- tingling face or lips

In chronic anxiety, stress hormones continue to be produced even after the stressful event has passed, creating ongoing physiological changes similar to the response shown in an acute fight-or-flight situation. According to the Mayo Clinic (2023), a chronic stress response leads to changes in mood, digestive alterations, increased blood sugar, and changes in the immune system. Chronic anxiety also causes adverse physical symptoms and problems with maintaining daily life functions, including the following:

- trouble sleeping
- focusing on wrongs from the past, or **rumination**
- unpredictable energy levels
- headaches
- muscle tension and pain
- high blood pressure
- weight gain
- trouble concentrating
- brain fog
- forgetfulness
- increased or decreased appetite
- digestive problems

Guilt

Guilt is a common symptom associated with processing death and grief. After the loss of a loved one, particularly from a traumatic event, individuals may experience survivor's guilt: an overwhelming feeling that it is wrong for them to have survived when others did not. Guilt can also be associated with regrets that surface after a loss. These regrets may be related to unresolved conflicts, relationship tension, or simply unfinished plans. Moving forward is difficult after experiencing loss through death, and the timeline is different for each person. Some individuals may feel guilty for experiencing joy or starting a new relationship, but with support they typically can move past their guilt in a healthy way while maintaining important memories.

Guilt is closely linked with anxiety and often results in cyclic rumination, as the afflicted individual cannot stop thinking about past wrongs. The emotion can be crushing and lead to negative self-reflection and depression, which is best addressed with the help of a therapist.

Types of Death

In the realm of death, the diversity of human experiences emerges in various types, each with its own distinct characteristics and implications. Types of death affect both the dying process as well as the grieving process. An individual's reaction to death often depends on whether they have time to anticipate the death or whether it is shocking. Either can trigger a cascade of emotions associated with death, loss, and the grieving process. This section aims to delve into the multifaceted nature of death, encompassing sudden and unexpected losses, tragic accidents, acts of violence, deliberate self-inflicted harm, the progression of terminal illnesses, anticipated deaths, and those resulting from medical conditions.

Sudden Death

Sudden deaths may occur from medical issues as well as from violence, whether accidental or intentional. They may occur in seemingly healthy individuals, such as with heart arrhythmias or brain aneurysms. They may also be linked with complications of a known disease. The most common cause of sudden death in the United States is cardiovascular disease (CDC, 2023c), which can lead to cardiac arrest or a heart attack. Other common medical causes of sudden death include pulmonary embolism, which is caused by a blood clot in the lungs; aortic rupture or dissection, which may be associated with a known or unknown aortic aneurysm; stroke; and sudden infant death

syndrome (SIDS).

Accident

The incidence of accidental deaths varies by age group. These are also often considered preventable deaths. In infants younger than 1-year-old, mechanical suffocation is the leading cause of preventable death (CDC, 2023a). In young children, the most common cause of accidental death is drowning (NSC, 2021). For middle-aged adults, the most common cause is poisoning, which is thought to be associated with the opioid epidemic (NSC, 2021). Motor vehicle accidents (MVAs) cause the most deaths in young adults and older adults (NSC, 2021). Older adults also have the highest incidence of death from choking and falls, especially after the age of 70. Other causes of accidental death include sports-related injuries and exposure to fire or smoke. Many of these deaths are associated with a traumatic injury sustained from an accident.

Trauma for witnesses to an accidental death is an additional source of guilt, grief, and potential depression. Individuals surviving an accident where others have died may be unable to make sense of the situation and remain stuck in a cycle of blame and guilt.

Homicide

The killing of one person by another person, **homicide**, can range from an individual death to mass causalities. It can result from various causes, from deliberate shootings or stabbings to random acts of violence without a specific target. Domestic violence also may result in homicide. Firearm homicides make up the majority of all homicides in the United States (NSC, 2021). The violence of homicide also has a ripple effect within the community where it happens. Homicide creates a sense of fear and shame. This may lead to complicated grief and even a sense of community grief, particularly in the wake of mass shootings.

Suicide

Death caused by intentional harm to oneself is called **suicide**. When a parent loses their child through suicide, it is traumatic and sudden for all loved ones impacted by the death. Suicide leaves many unanswered questions and leaves most parents feeling hurt, angry, and deeply saddened by such a loss. Parents may feel they cannot openly discuss their grief and feel their emotions because of how their child died and how the people around them may perceive the situation. Parents, family members, and service providers have all confirmed the unique nature of suicide-related bereavement following the loss of a child (HealthyChildren.org, 2023). They report a wall of silence around them and how people interact with them. One of the best ways to grieve and move on from this type of loss is to find ways to keep that child as an active part of their lives. It might be private at first, but as parents move away from the silence, they can move into a more proactive healing time.

LINK TO LEARNING

The Suicide and Crisis Lifeline (https://openstax.org/r/77SuicideLine) is a great resource for tips on helping to prevent suicide. Don't hesitate to extend a helping hand or helpful resource to someone you suspect might be at risk of suicide.

Illness

Many types of acute illness may result in death. Deaths may occur from the progression of chronic disease states or from the rapid onset of an infectious disease. Even if death is anticipated, it may feel shocking when it finally occurs. The progression of death and symptoms depend on the specific pathophysiology of the disease process. Acute illnesses may be isolated to an individual or widespread, as in a pandemic. A population-wide illness may seem to affect individuals randomly, which may lead to fear and community grief.

Anticipated Death

Anticipated deaths often take place within the context of chronic diseases and terminal illnesses. These illnesses and diseases may be associated with a slow decline in function, use of hospice services, and progressive changes. For caregivers and family members, anticipating a death can result in layered grief where the individual experiences the loss twice: first with the decline in function and knowledge of impending death, and then with the actual death.

REAL RN STORIES

Fear and Coping

Name: James, RN
Clinical setting: Cardiac rehab clinic
Years in practice: 15
Facility location: Arvada, Colorado

I've worked with many patients over the years struggling to adapt after a heart attack. I remember one individual whose fear drove him to work harder than anyone. Not only had he recently experienced a heart attack, but his wife was battling breast cancer. During his time in rehab, she took a turn for the worse with some spread of her cancer that had previously been stable. She began to experience more symptoms related to her metastatic process, and they decided to move forward with palliative care. My patient, Jerry, expressed extreme worry—not only about how he would care for his wife during their remaining time together, but also how he would care for himself when she died. He expressed fear that he would be unable to cook healthy meals, keep active, and receive the help he needed if she were not around. During his exercise sessions, we brainstormed ways he could enjoy his time with his wife without focusing on what life would be like without her. He qualified for some respite care when she began to require more assistance. He signed up for a healthy cooking class, was diligent with his cardiac exercises, and joined a walking group in his neighborhood.

When his wife passed away, Jerry had many healthy coping strategies already in place, including community, confidence in caring for himself, and improved health. While anticipatory grief can be limiting and cause extreme worry and anxiety, it can also be a motivator for improved wellness and an outlook of hope for the future.

Medical Condition

Medical conditions are the most common cause of an anticipated death. Chronic illnesses and conditions may be lifelong disorders associated with various complications. These may include seizure disorders, genetic syndromes, cardiovascular malformations, cystic fibrosis, and autoimmune disorders. These may progress over time, or individuals may have a higher incidence of certain other diseases based on these underlying disorders. Other medical conditions may develop later in life and put people at higher risk for organ damage associated with diabetes, atherosclerosis, dementia, and other neuromuscular diseases.

36.4 Legal and Ethical Considerations

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe legal foundations of death and dying
- Explain ethical foundations of death and dying
- Identify nursing considerations for after death

Throughout the process of death and dying, nurses provide direct care for the patient and family. In addition to this hands-on care, nurses must also consider the legal and ethical aspects of death and dying. These aspects are a crucial guide to advance planning, making treatment decisions, and educating patients with respect to death. Nurses must recognize the role that cultural beliefs play in ethical and sometimes legal end-of-life care. In particular, cultural values guide decisions regarding advance planning. Depending on the clinical setting, nurses may be required to care for the bodies of individuals after death. Cultural rituals surrounding death vary widely; the best action for nurses is to keep open communication and maintain an atmosphere of respect regardless of any personal opinions they may have of patient and family wishes.

Legal Foundations of Death and Dying

Legal considerations for nurses involve assisting patients in understanding, verbalizing, and documenting their wishes for care at the end of life. These legal documents are crucial whether a death is anticipated or sudden and whether a patient is old or young. Nurses are essential in providing education on advance planning and involving the family as appropriate.

Advance Planning

While not all deaths are anticipated, the eventuality of death is a fact. Nurses play a significant role in advance planning for that fact. Advance care planning helps patients achieve autonomy and comfort in knowing their wishes will be fulfilled regardless of their ability to articulate them in a given moment. It also helps healthcare providers offer personalized care to each patient and reduces decision fatigue and family worry. However, while advance planning is helpful from a legal standpoint and for families making hard decisions, it is not a requirement in any state.

Advance Directive

As individuals become more knowledgeable about medical procedures and practices, some want to ensure their wishes and desires with respect to death are known. This ensures that if the person ever becomes incapacitated, or unable to perform cognitive functions, or if they lose the ability to express themselves, their loved ones will know what they want. For this reason, a person might write an **advance directives** (also known as a **living will**), a written legal document that details specific interventions they want and do not want. For example, a person in the last stages of a terminal illness may not want to receive life-extending treatments. A living will can also name a **healthcare proxy**, a specific person appointed to make medical decisions if you cannot speak for yourself.

Encouraging patients to have advance directives is crucial at any age, but this potentially delicate conversation must be handled respectfully. People's desire for—or resistance to—living wills and advance directives is often influenced by their religion, culture, and upbringing.

LINK TO LEARNING

Nurses have a unique role in facilitating education on advance planning with patients of all ages. Resources such as this advance directive template (https://openstax.org/r/77FiveWishes) can help nurses support patients as they express their wishes about end-of-life care.

Physician Order for Life-Sustaining Treatment (POLST)

A **physician order for life-sustaining treatment (POLST)**, also called a portable medical order, is a personal directive for medical care (Tark et al., 2019). A POLST must be upheld anywhere the patient is, whether at home, in the community, in a hospital, or a doctor's office. POLST documents are reserved for individuals with terminal or progressive diseases and limited life expectancy. While any adult can create an advance directive that guides care in the event of accidents, emergencies, or unexpected health events, a POLST guides care during the last stages of life. Creating a POLST requires a detailed conversation with a trusted physician. The POLST can be created directly with a patient, but a healthcare proxy can also help create a POLST for individuals who cannot make these decisions for themselves. A POLST may include the following:

- Transportation wishes: Does the patient wish to be transported to a hospital for care in the event of emergency or a decline in health?
- Resuscitation wishes: Does the patient wish for full resuscitation or no resuscitation measures?
- Medical treatment wishes: Does the patient wish for medical treatments such as medications, fluids, or intubation in the event of an emergency or a decline in health?
- Disease-specific care: Does the patient wish for care related to specific diseases such as antibiotics for pneumonia or a urinary tract infection?

As a type of advance planning tool, POLSTs are optional; however, national standards are available for states to create standardized POLST recommendations and forms. Many states are creating standardized POLST forms for efficient and respectful end-of-life care.

LINK TO LEARNING

The National POLST Coalition maintains this website with information about POLSTs and advance planning (https://openstax.org/r/77POLSTs) in general, as well as sample forms.

Do Not Resuscitate (DNR)

A **do not resuscitate (DNR)** order is a narrow directive for care provided in the event of cardiac arrest. DNR does not mean the patient does not want any treatment for their condition (Vranick, 2022). Instead, it states that if they stop breathing or their heart stops beating, medical personnel such as providers and nurses are *not* to take steps to revive or resuscitate the patient. Generally, these steps include cardiopulmonary resuscitation (CPR) and intubation. DNR orders are often included in a POLST. Some advance directives also include a separate **do not intubate (DNI)** order, stating that if a person stops breathing, medical personnel such as providers and nurses are *not* to place an intubation tube.

CLINICAL SAFETY AND PROCEDURES (QSEN)

DNR

Facility requirements vary regarding how to document DNR orders. However, they are always created during conversations between a provider and a patient or patient representative. Ideally, advance directives are in place before any life-threatening medical event; that way, even if the patient becomes incapacitated, an authorized representative can make the decision as to whether to create a DNR order. Nurses and other healthcare providers must know the status of their patients with regard to DNR. Examples of ways to create an environment of safety regarding DNR include the following:

- Create color-coded wristbands.
- Make sure the DNR order is documented in the chart.
- Be aware of the DNR status of all patients in your care.

Allow Natural Death (AND)

The term **allow natural death (AND)** is similar to DNR; however, the focus of this directive relies on allowing a natural unfolding of the dying process rather than withholding treatments. Some researchers have proposed that AND is a superior term in that it guides providers in creating an atmosphere of comfort and ease during death (Fan et al., 2018). The concept behind AND is providing comfort and dignity at the end of life and avoiding measures to prolong the dying process or sustain life.

Comfort Measures Only

As you learned, comfort care is often a significant part of hospice and palliative care. It encompasses the following four areas:

- physical comfort
- mental and emotional comfort
- spiritual
- practical tasks

Comfort care only provides treatments that promote the comfort of the patient and family during the dying process. Comfort measures can be given whether or not a person has a DNR or AND order signed. Comfort care orders direct what treatments can and should be provided to maintain comfort during the last stages of life.

Comfort care measures provide pain control, relief from anxiety and agitation, support from spiritual leaders, and assistance with bodily functions and activities of daily living. Table 36.7 lists comfort care interventions for common end-of-life situations (National Institute on Aging, 2022).

End-of-Life Situation	Nursing Intervention
Pain	• Administer pain medication as directed. • Monitor for nonverbal cues of pain. • Administer preventive pain therapies if ordered. • Maintain comfortable positioning.
Breathing problems	• Raise the head of bed if tolerated. • Use medications to relieve breathlessness as directed. • Educate the family on expected changes in breathing patterns. • Administer medications to lessen secretions as directed.
Skin irritation	• Keep skin clean and dry. • Create a turning schedule to prevent pressure damage to the skin. • Apply lotions to relieve itching. • Keep lips moist with ointments. • Moisten the mouth with ice chips or swabs.
Digestive problems	• Offer small amounts of food if swallowing is not an issue. • Administer medications for nausea if indicated. • Allow eating and drinking to the patient's comfort. • Educate the family on the nutritional needs of the patient.
Temperature sensitivity	• Monitor for signs of heat or cold intolerance. • Provide warm blankets. • Use a fan if desired.
Fatigue	• Create resting spaces for people who are still ambulatory. • Create a restful atmosphere. • Have a commode near the bed.
Emotional disturbance	• Provide physical contact if the patient desires. • Play quiet music. • Use soft lights. • Communicate with the dying person. • Involve a spiritual leader if the patient desires.

TABLE 36.7 **Comfort Care for End of Life**

UNFOLDING CASE STUDY

Unfolding Case Study #5: Part 8

Refer back to Unfolding Case Study #5: Part 7 for a review on the patient data. Mrs. Morales has been receiving hospice care for two months and is beginning to experience more severe fatigue and expresses her desire to "just get it over with already." She has requested that her extended family come to see her and say their goodbyes. One of her friends is currently visiting and notices that Mrs. Morales has stopped breathing. The friend begins to panic and yells, "HELP! She's not breathing! Someone start CPR now!"

5. Take action: What action should the hospice nurse take next?

6. Evaluate outcomes: After the patient's death, the nurse provides Mr. Morales with resources related to coping and support groups for grief. What findings would indicate that Mr. Morales is coping appropriately?

Terminal Weaning

Removing or discontinuing life-sustaining treatments and procedures is referred to as **terminal weaning**, also known as **terminal extubation**. Most terminal weaning takes place in an intensive care unit (ICU) setting with the removal of ventilator tubes or other life-sustaining equipment. Terminal weaning occurs after a determination is made by providers that continued treatment will not improve or reverse the condition of the individual, and the intubation is only prolonging the dying process (Thellier et al., 2017). The patient's family ultimately makes the decision based on the provider's recommendations and facts about the prognosis for ongoing life. The time between terminal weaning and death is typically very short. Terminal weaning occurs in the presence of providers and nurses to ensure the patient's comfort level is maximized and the family has adequate support.

Ethical Foundations of Death and Dying

Ethics in death and dying is a recurring topic in the medical community. It is also routinely addressed in legislation where national and state laws are set and often challenged based on varying ethical standards. As with any ethical conflict, considerations include autonomy (the right of independence), beneficence (to do good), nonmaleficence (to do no harm), and justice (fairness). Many of the preceding advance directives seek to ensure an ethical death in that quality of life is maximized and the decision made by others on behalf of a dying individual aligns with their values, beliefs, and cultural conditions. A nurse is ethically prohibited from administering medical aid in dying, but they must be informed and comfortable supporting patients and families in end-of-life situations.

Euthanasia

Helping a person fulfill their wish to die, **euthanasia** can be categorized as active euthanasia or passive euthanasia. An **active euthanasia** involves deliberately taking actions to end the life of a person who is suffering from a terminal illness or unbearable pain, such as administering a lethal dose of medication to someone who wishes to die. In some cases, a dying individual who is in pain or constant discomfort will ask this of a friend or family member as a way to speed up what they have already accepted as being inevitable. This can have lasting psychological effects, such as anxiety, depression, post-traumatic stress disorder (PTSD), guilt, resentment, and emotional trauma, on the individual or individuals asked to help.

A **passive euthanasia** refers to the withholding or withdrawal of medical treatment or life-sustaining measures with the intention of allowing a patient to die naturally. This can involve discontinuing interventions like mechanical ventilation, artificial nutrition and hydration, or other forms of life support. Passive euthanasia allows the natural progression of the underlying medical condition to take its course, ultimately leading to the patient's death. It is typically carried out in accordance with the patient's expressed wishes, advance directives, or the decision of their legal representative. This is different from terminal weaning in that with terminal weaning, the intent is not death but rather removal of life-prolonging treatments. The distinction between active and passive euthanasia lies in the active nature of the intervention; in passive euthanasia, treatment is not actively administered to prolong life. Laws and ethical considerations regarding passive euthanasia vary across jurisdictions.

PATIENT CONVERSATIONS

Terminal Weaning vs. Euthanasia

Scenario: Elaine is a nurse caring for Roland in the ICU. Roland sustained a severe burn on his torso that required multiple grafting procedures. After he was moved to a rehab center, he developed pneumonia and was transferred to ICU for ventilator care. Marie is Roland's sister and only living relative. The provider has just explained to her that Roland's organ systems are failing, the ventilator is a life-sustaining treatment, and Roland is not expected to recover.

Nurse: Do you have questions about what the provider explained?

Patient's sister: I am an authorized representative for Roland, but I feel that removing the life support is euthanasia. Is that legal?

Nurse: Removing life-sustaining treatment in a setting such as the ICU is termed "terminal weaning." Terminal means life-limiting, and weaning means removing the support that is prolonging life. Active euthanasia refers to providing treatment to end someone's life per their wishes and passive euthanasia refers to withholding treatments with the intent to end life. Does Roland have an advance directive?

Patient's sister: Yes, but he did not specify whether he wanted ventilatory support. I just don't know what to do.

Nurse: Is there a support person who could help you make the decision?

Patient's sister: Yes, I'd like to speak with the chaplain to discuss this before deciding.

Nurse: I will put in an order for the chaplain to visit you and help you process the information and make a decision.

Voluntary Euthanasia

A **voluntary euthanasia** refers to helping someone fulfill their wish to die by acting in such a way as to help end that person's life. The individual, who is usually experiencing a terminal illness or unbearable pain, makes a clear and voluntary request for assistance in hastening their death. This request may be expressed verbally, in writing, or through advance directive, and it reflects the person's desire to have control over the circumstances of their death. An example of voluntary euthanasia would be a terminally ill cancer patient who, after exhausting all available treatment options and experiencing unmanageable pain and suffering, requests medical assistance to end their life peacefully and on their own terms. Another example could involve a person with a degenerative neurological condition, such as amyotrophic lateral sclerosis (ALS), who chooses to end their life before losing the ability to communicate or move independently. In both cases, the decision to pursue voluntary euthanasia is driven by the individual's autonomy, dignity, and desire to avoid unnecessary suffering at the end of life.

Assisted Death and Aid in Dying

Medical aid in dying, or **provider-assisted death**, occurs when a provider prescribes how a person can end their life but does not directly act in the process. Unlike euthanasia, it is regulated by a set of laws and backed by legal authority. Provider-assisted death is permitted in the District of Columbia and several states, including Oregon, Hawaii, Vermont, Montana, Maine, Colorado, New Mexico, California, and Washington. It is also legal in the Netherlands, Switzerland, and Belgium. In regions where it is legally permitted and regulated, a qualified healthcare provider may prescribe medication, usually a lethal dose of barbiturates or opiates, at the request of a mentally competent, terminally ill patient. The patient has the autonomy to self-administer the medication when they choose, with the goal of bringing about a peaceful and controlled death.

The terminology and legal status surrounding assisted death vary across different jurisdictions, and the ethical, moral, and legal considerations of this practice continue to be subjects of debate and discussion. In the United States, a growing number of the population support provider-assisted death. In 1997, a U.S. Supreme Court ruling upheld states' right to determine their laws on provider-assisted suicide despite efforts to limit providers' ability to prescribe medications for their patients requesting the means to end their lives. The position of the Supreme Court is that the debate concerning the morals and ethics surrounding the right to die should be continued. As more of the population enters late adulthood, the emphasis on giving patients an active voice in determining certain aspects of their death is likely.

Palliative Sedation

The administration of pharmaceutical agents to reduce consciousness is known as **palliative sedation** (Cherny, 2024). These medications may be administered intravenously, subcutaneously, orally, or rectally. Palliative sedation is appropriate in the case of severe and intractable pain at the end of life, and it can be used in the ICU, inpatient hospice, inpatient general units, and at home, depending on the circumstance of each individual. Palliative sedation allows restfulness for the individual and reduces stress levels for the family (Cherny, 2024). Discomfort and pain in palliative care may result from the disease process itself or as a result of palliative treatments, procedures, or surgical interventions. However, palliative sedation is more than just administering pain relievers. Palliative sedation may also relieve emotional suffering, such as anxiety, and reduce physical discomfort, such as breathlessness or dyspnea. It can also alleviate symptoms of delirium and fatigue.

While both euthanasia and palliative sedation may use similar modalities, the distinction lies in the intention and the outcome. Palliative sedation intends to provide comfort and focuses on the ethical standards of beneficence and nonmaleficence . The outcome of palliative sedation is improved quality of life during the end-of-life period rather than inducing or hastening the process of death. In the case of palliative sedation, nurses may be carrying out orders to administer medication. Nurses need to assess their comfort level in providing care during this challenging time, as there is often a shift from delivering curative treatment to maintaining quality of life and providing dignity at the end of life.

Nursing Considerations for After Death

Nurses may encounter death in a variety of settings, including inpatient units, emergency rooms, at-home hospice care, and the scene of a violent crime or accident. After-death care involves caring for the deceased individual's body, but generally the focus shifts to providing more intense care for the family.

Postmortem Care

The care provided for an individual immediately after death is called **postmortem care**. At this time, the body will experience expected changes, including a drop in temperature, color changes to the skin, and **rigor mortis**, the stiffening of the muscles in the body. The skin will develop **passive euthanasia**, a pale to greyish color of the skin that occurs shortly after death, with some areas turning purplish due to blood pooling in lower body parts due to gravity.

The task of postmortem care falls to the nurse in a hospital setting and possibly in a long-term care facility or home setting. Nurses must provide gentle care to the body to prevent tissue damage and preserve dignity; modesty and privacy are also important. Nurses should remove all IV lines that fall under their scope of practice (e.g., some facilities will allow peripheral IVs to be removed but not tunneled or large-bore lines) and remove indwelling tubes, such as nasogastric or urinary catheters. It is important to note that if an autopsy is planned, no lines or tubes should be removed. Nurses should also remove or replace any soiled linens and clothing, close the eyes, and gently cleanse any soiled parts of the body before family viewing. Documenting a postmortem assessment is essential, particularly in inpatient settings and for individuals who will have an autopsy performed. The facility will dictate the type and extent of the exam.

Postmortem care should also provide time for the family to view the body and say goodbyes; a private space for this is ideal. Nurses have an important duty in creating a peaceful space for the family to view the body. By removing IV lines, tubing, ventilators, pumps, and other machines, nurses can help the family focus on emotional needs. Cleaning the room of visible stains and body fluids and applying clean linens will go far in creating a space for families to begin their healing. As much as possible, the patient's and their family's cultural beliefs and wishes should guide postmortem care.

LINK TO LEARNING

This website will prepare you to care for individuals after they die (https://openstax.org/r/77CareAfterDie) and includes information relevant to care of the surviving family.

Organ Donation

The donation of organs or tissue that are removed from a person's body and used for treatment in another person's body or for research or other medical uses is known as **organ donation**. It is a personal decision that should be considered during advance planning. Anyone can volunteer to be an organ donor upon their death, though not everyone will qualify, and some illnesses, cancers, or bodily damage limit the viability of organs. However, organ donation networks will typically accept what is available and safe to use. According to HRSA (2024), common organs procured for organ donation include the following:

- heart
- kidney
- liver
- lungs

- pancreas
- intestines
- face
- hands

In some cases, other body parts may be procured, in whole or in part, for a variety of uses, including grafting skin, repairing veins and heart valves, restoring vision, and treating burns:

- corneas
- middle ear
- heart valves
- bone
- veins
- cartilage
- tendons
- ligaments
- stem cells
- bone marrow

Consent is required to begin the process of **procurement**, the harvesting of organs or tissues for donation. First-person consent is when an individual signs up as an organ donor prior to their death—typically when obtaining a driver's license or completing an advance directive. If no first-person consent is available, family members are asked to decide. Time is crucial to keep the procured organs viable. Nurses may need to have open discussions with families to obtain their consent, particularly in the event of sudden or traumatic injuries in which the individual is otherwise healthy and many organs are viable. Given the circumstances of recent or impending death, nurses will need to take great care in approaching families about consideration for organ donation. This is a difficult conversation for both the nurses caring for the patient and the family. Nurses should keep in mind that they are not alone in the process and may rely on unit leadership, charge nurses, and trained representatives of organ donation procurement organizations to open the conversation with families about organ donation.

LINK TO LEARNING

Visit this website on resources for families considering organ donations (https://openstax.org/r/77OrganDonation) for more information.

Death Certificate

A **death certificate** is a legal document, signed by a provider, confirming the circumstances of a person's death. Death certificates include the following:

- place of death
- time of death
- date of death
- primary cause of death
- secondary contributors to death
- patient name
- patient address
- name of parents
- parents' birth and death information

A death certificate may also include information on the disposition of remains; a funeral director often fills out this section. Death certificates are usually prepared by a county medical examiner or coroner, though providers may also be certified to prepare them. Depending on the facility's protocol, a nurse or provider can pronounce the time of death. Copies of death certificates can be ordered through the state where the death occurred.

Autopsy

An **autopsy** is a medical procedure in which a deceased person's body is systematically examined to determine the cause of death and to gain additional insights into the person's health and medical history. Legal requirements for autopsy vary by state. Family members can request an autopsy if they have concerns about the cause of death. Autopsies are typically performed after violent crimes, accidents, or for reasons of unknown cause of death. Depending on state laws and circumstances surrounding the death, autopsies may be completed by the following:

- forensic pathologists
- medical examiners
- coroners
- qualified police officers

Summary

36.1 Concepts of Grief and Loss

In all areas of care, nurses will encounter patients experiencing death, dying, loss, or grief. Understanding the concepts of loss and grief, particularly in relation to death and dying, prepares the nurse to support patients physically and emotionally. Grief is complicated, with no one-size-fits-all treatment plan. Many factors play a role in how people react to loss and experience grief. Grief, bereavement, and mourning are unique experiences for each individual and are affected by personal values and specific cultural beliefs. Nurses must maintain a nonjudgmental attitude in caring for grieving patients and consider cultural differences associated with bereavement and mourning.

Nurses must be prepared to address the physical, social, and emotional experiences of grief. Physical symptoms associated with grief, such as heart palpitations, dizziness, fatigue, and muscle tension, often overlap with emotional dysregulation, such as depression, anxiety, and anger. The social effects of grieving occur in response to these physical and emotional experiences and impact family and community relationships. Grief is triggered by loss, which may be actual, perceived, anticipatory, maturational, or situational. Regardless of the type of loss, nursing actions focus on the individual patient response. Although grief is highly variable, nurses can anticipate patterns and responses based on the stages of grief outlined by theorists such as George Engel and Elisabeth Kübler-Ross. Nurses knowledgeable about the variations in grief and other responses to loss are empowered to offer meaningful support to their patients.

36.2 Concepts of Death and Dying

Nurses must have a clear understanding of the dying process to provide appropriate interventions and education to patients and families faced with death and dying. Equipped with this knowledge, nurses can effectively create individualized care plans as patients begin to experience the stages of death. By anticipating individual and family needs during physical, psychological, and societal death, nurses promote quality end-of-life care.

Educating family members on expectations at the end of life can reduce stress and create a greater sense of peace as they say goodbye to their loved ones. Education should focus on explaining expected physiological changes associated with respiration, circulation, digestion, urination, and cognition. Nurses must include anticipatory guidance on how these changes will affect the visual appearance and responsiveness of the patient.

Supporting individuals and family members facing a terminal illness diagnosis is complex. Terminal illness progression is highly variable between individuals and disease states. Supporting individuals through terminal illness involves an interdisciplinary team approach to provide emotional, physical, and psychosocial care. Quality of life and dignity during death can be maximized through palliative care, comfort care, and hospice services.

36.3 Factors That Affect Grief, Loss, Death, and Dying

Responses to death and dying are highly individualized. However, there are commonalities in the factors that affect these responses. Type of death, timing, age, and maturation all affect how an individual perceives and processes death and moves through the grieving process. Family members experiencing a loss through death struggle with many emotional challenges, including fear, anxiety, and guilt, as well as a wide range of physical symptoms. After a death, family structure, financial situation, and dynamics may change. Socioeconomic factors such as financial stability, physical location, living arrangements, and transportation all impact an individual's ability to seek and access quality care. The type of death—whether sudden (such as an accident, homicide, suicide, or illness) or anticipated (such as a terminal illness)—influences the grieving process. Suicide is a particularly devastating type of death that may leave individuals feeling extreme guilt, shame, and depression. Nurses must be sensitive to cultural differences in the experience of grief and differences linked to the type and timing of death.

36.4 Legal and Ethical Considerations

Nurses must fully understand legal and ethical concepts surrounding death and dying, regardless of their practice setting. The complicated topics of euthanasia, provider-assisted death, and terminal weaning are a basis for understanding the legal and ethical aspects of death and dying in patients with terminal illnesses. Nurses will rely on state standards and federal regulations in regard to legal matters associated with provider aid in dying. Awareness of advance planning, POLST, and the concept of comfort measures at the end of life help nurses provide

individualized care that fulfills the wishes of each patient. Nurses provide hands-on care to dying patients and are an essential part of end-of-life family support. Nurses may be involved in comfort measures, terminal weaning, and care that allows natural death. Nurses must evaluate their thoughts and beliefs about death with dignity, comfort care, and advance directives. After-death care focuses on the dignity of the patient and the care of the family. Nurses can create a peaceful atmosphere for families to express their cultural responses to death in a safe environment. Organ donation consent, preparation for autopsy, and immediate postmortem care are all critical aspects of nursing care, particularly in the hospital setting. Understanding these issues empowers nurses to advocate for their patients even in their final days. Cultural awareness and compassion are essential in postmortem care.

Key Terms

acceptance a grief stage marked by understanding the loss and acknowledging the new reality
active euthanasia the administering of a lethal dose of medication to someone who wishes to die
actual loss a loss clearly noticed by others
advance directive (also, living will) a written legal document that details specific interventions a person wants
agonal breathing gasping, labored breaths that may result in periods of apnea lasting many seconds
allow natural death (AND) a directive allowing a natural unfolding of the dying process rather than withholding treatments
anger a grief stage marked by an intense feeling of displeasure and hostility
anticipatory loss a loss that an individual expects or foresees
apnea temporary pauses in breathing
autopsy a medical procedure in which a deceased person's body is systematically examined to determine the cause of death and to gain additional insights into the person's health and medical history
bargaining a grief stage marked by attempts to “make a deal” that might change or renegotiate the undesired outcome
bereavement the feeling of grief and the outward expression of mourning
Cheyne-Stokes breathing a pattern of abnormal breathing characterized by progressively deeper and sometimes faster breathing, followed by a gradual decrease that results in a temporary stop in breathing (apnea)
comfort care interventions that promote the comfort of the patient and family during the dying process
compassion fatigue the emotional toll experienced by individuals caring for others
complicated grief a state of grief that is prolonged, delayed, or exaggerated in which individuals have trouble coping and progressing through the normal grief process
death the cessation of biological life functions
death certificate a legal document, signed by a provider, confirming the circumstances of a person’s death
denial a grief stage marked by refusal to acknowledge a loss or insistence that it isn’t happening
depression a grief stage marked by prolonged sadness that affects an individual’s ability to perform everyday tasks
do not intubate (DNI) an order stating that if a person stops breathing, medical personnel such as providers and nurses are *not* to place an intubation tube
do not resuscitate (DNR) an order stating that if a person stops breathing or their heart stops beating, medical personnel such as providers and nurses are *not* to take steps to revive or resuscitate the patient
dysfunctional grief grief that does not resolve as expected or in which an individual resorts to unhealthy coping strategies
euthanasia the act of helping a person fulfill their wish to die
grief the emotional response to loss
healthcare proxy a specific person appointed to make medical decisions for you if you are unable to speak for yourself
homicide the killing of one person by another person
hospice care a specific type of comfort care provided at the end of life
loss a real or perceived absence of a possession, circumstance, or individual
maturational losses losses that occur at predictable intervals during an individual's life span
mottling a bluish-red, lace-like (reticular) coloration of the skin
mourning the outward, personal expression of grief

organ donation the donation of organs or tissue that are removed from a person's body and used for treatment in another person's body or for other medical uses
palliative care an interdisciplinary approach to specialized medical and nursing care for people with life-limiting illnesses
palliative sedation the administration of pharmaceutical agents to reduce consciousness
pallor an extremely pale hue of the skin
pallor mortis a pale to greyish color of the skin that occurs shortly after death
passive euthanasia the choice to withhold life-sustaining treatment with the intent to hasten death
perceived loss a loss that an individual distinctly feels as an absence, though it may not be apparent to others
physician order for life-sustaining treatment (POLST) (also, portable medical order) a personal directive for medical care
physiological death the state in which the body ceases to function, eventually rendering the individual unable to engage in necessary basic processes
postmortem care the care provided for an individual immediately after death
procurement the harvesting of organs or tissues for organ donation
provider-assisted death the act of a provider prescribing the means by which a person can end their own life
psychological death the state in which the individual begins to face their impending death and consequently regresses into the self
respite care temporary care for an individual to provide relief to their usual caregiver
rigor mortis the stiffening of the muscles in the body after death
rumination the act of focusing on wrongs from the past
situational loss a loss associated with expected or unexpected life changes for an individual
societal death the state in which others, perhaps unable to effectively cope with the imminent loss and its implications, withdraw from the dying individual
suicide death caused by intentional harm to oneself
terminal illness a disease state for which no cure is known; also referred to as a life-limiting disease
terminal weaning (also, terminal extubation) the removal or discontinuation of life-sustaining treatments, procedures, or devices such as a ventilator
voluntary euthanasia the act of helping someone fulfill their wish to die

Assessments

Review Questions

1. What physiologic changes occur as a response to stress hormones triggered by a grief response?
   a. noise sensitivity, fatigue, elevated blood pressure, dry mouth
   b. weeping, dizziness, weakness, chest tightness
   c. blood vessel constriction, elevated blood pressure, increased heart rate, inflammatory chemical release, increased platelet and fibrinogen activity
   d. heart palpitations, eye irritation, hollowness in the stomach, muscle tension, crying

2. What acute condition is associated with a heart murmur, chest pain, and shortness of breath in individuals who have experienced severe trauma, including the death of a loved one?
   a. anxiety
   b. pulmonary embolism
   c. stress-induced cardiomyopathy
   d. stroke

3. What is considered "the universal language of children" and often incorporated into their process of grieving?
   a. crying
   b. laughing
   c. play
   d. denial

4. The physical symptoms of decreased appetite, cool skin, and decreased cognition are all associated with

what part of the dying process?
   a. social death
   b. energy conservation
   c. psychological death
   d. lack of blood to the brain

5. What type of breathing pattern refers to gasping, labored, and intermittent breaths seen during the stage of impending death?
   a. terminal
   b. life-limiting
   c. agonal
   d. restless

6. During a routine hospice care visit for a patient with stage 4 prostate cancer, the patient's sister expresses concern over finances, inability to keep up, extreme fatigue, and frustration with her brother's behaviors. What is the sister likely experiencing?
   a. anticipatory grief
   b. respite care
   c. compassion fatigue
   d. terminal illness

7. Palliative care and hospice care provide many of the same services and nursing interventions; however, palliative care may also include which type of treatments that are not offered with hospice care?
   a. medical
   b. comfort care
   c. pain relief
   d. respite

8. At what stage of child development might a nurse expect a recurrence of bedwetting, irregular sleep, tantrums, and magical thinking in response to a death?
   a. preschooler (3–5 years)
   b. middle childhood (6–11 years)
   c. preadolescent (11–12 years)
   d. adolescent (12–17 years)

9. What socioeconomic and cultural factors can a nurse expect to encounter when caring for families experiencing an anticipated death?
   a. All socioeconomic groups access hospice care equally.
   b. Funeral planning and costs are similar across socioeconomic groups.
   c. Mostly White patients use hospice care.
   d. Autopsies are performed regardless of cause of death.

10. After the death of his partner, Mr. Otto has an appointment with his primary care provider for a check-up. The nurse observes that Mr. Otto seems nervous, checks several times during the visit for his insurance card, reports trouble concentrating, and verbalizes that he does not know how he will "get by" without his partner managing the finances. What psychological factors are affecting Mr. Otto in his grief process?
   a. fear and guilt
   b. guilt and sleep disturbance
   c. anxiety and fear
   d. sleep disturbance and anxiety

11. What is the most common cause of sudden death in the United States?
   a. SIDS

b. accidents
c. homicide
d. cardiovascular events

12. An advance directive is a legal document that serves what purpose?
a. dictates the medical treatment plan at the end of an individual's life
b. explains an individual's wishes and desires for end-of-life care
c. directs providers on whether to extubate a patient
d. allows a healthcare proxy to override a patient's verbal wishes

13. A POLST is a type of advance directive that serves whom?
a. only individuals living in a long-term care facility
b. only individuals who independently create a POLST
c. any individual who creates a POLST with their physician
d. any individual with a terminal illness

14. Where is a nurse most likely to encounter terminal weaning?
a. an emergency room
b. a patient's home
c. a hospice facility
d. an intensive care unit

15. What is the purpose of palliative sedation?
a. to hasten the dying process
b. to maintain comfort and pain relief at the end of life
c. to allow family members time to say goodbye
d. to allow for curative treatment procedures

16. What is true about organ donation?
a. Only whole organs can be donated for use.
b. First-person consent is the only legal form of consent for organ donation.
c. Individuals of any age are potential organ and tissue donors.
d. Illnesses, cancer, and bodily damage do not affect organ donation.

Check Your Understanding Questions

1. What is the fundamental relationship between the concepts of grief, mourning, and bereavement?

2. Why can a perceived loss create a challenge in the social aspect of grieving?

3. Describe three triggers associated with maturation loss during childhood.

4. What determines the terminality of a disease process?

5. What specific strategies can the nurse employ to help adolescents process grief?

6. How does care for family members after a sudden death differ from care after an anticipated death?

7. Explain the difference between active euthanasia, passive euthanasia, and provider-assisted death.

Reflection Questions

1. How can nurses use Kübler-Ross's five stages of grief to develop patient-centered care for individuals during the grieving process?

2. How can nurses encourage self-empowerment and autonomy during the dying process?

3. Nurses may encounter individuals experiencing grief in many settings. Patients may not seek care specifically for grief. How can nurses coordinate care and support individuals during the grief process?

Critical-Thinking Questions about Case Studies

1. Refer to Unfolding Case Study #5: Part 6.
   What physical symptoms of grief should the nurse assess Mr. Morales for?
2. Refer to Unfolding Case Study #5: Part 7.
   What information would the nurse provide to Mr. Morales about what to expect during the middle stage of death?
3. Refer to Unfolding Case Study #5: Part 8.
   If the nurse listens to the patient's heart and determines that death has occurred, what postmortem care tasks should be performed?

What Should the Nurse Do?

1. The nurse is caring for a 65-year-old patient who has recently entered hospice with a diagnosis of advanced muscular dystrophy. The patient states that his pain is terrible and that he needs more medication. The family members do not want the patient to be "too sedated." What education can the nurse provide to meet the needs of both the patient and the family?
2. The nurse is caring for an 8-year-old patient with leukemia. The mother speaks to the nurse privately and begins crying as she expresses her guilt for not being available to her other children and her need to stay with her sick child. What next steps can the nurse take to help this mother?
3. A nurse is caring for a patient and family in an in-patient hospice unit. After the patient's death, the wife is reluctant to leave the bedside in order for the nurse to perform postmortem care. Her daughters are encouraging her to leave the room. How should the nurse respond?

Nurse Bree is working in a medical unit in a hospital. One of her patients is an 83-year-old patient with end-stage kidney failure; she receives dialysis regularly and has recently decided to pursue more comfort care options. Despite her end-stage disease, she has not completed any advance care planning. Bree feels she should address this topic with the patient and her daughter. Bree's other patient is a 24-year-old patient who was diagnosed with type 1 diabetes ten years ago. He has been hospitalized with diabetic ketoacidosis (DKA) multiple times since his diagnosis. Looking through his chart, she noticed he had a signed DNR order. Bree is shocked when she sees this order and initially feels compelled to discuss it with her colleagues and the patient's provider.

4. What factors likely affect Bree's reaction to the advance planning orders for these two patients?
5. As Bree cares for these patients, what support can she get in discussing the topic of advance planning with these patients? How can Bree care for these patients if she disagrees with their choices?
6. How should Bree explain the difference between comfort care and DNR to these patients?

Competency-Based Assessments

1. Draw a diagram of a sample patient's progression through Kübler-Ross's five grief stages. Describe patient symptoms or responses at each stage. Draw a similar diagram of a patient experiencing a type of dysfunctional grief. Compare the two charts and reflect on places where the nurse will provide interventions.
2. A patient with terminal lung cancer is receiving palliative care and wishes to die in his home. Discuss how nurses can effectively collaborate with the patient's family and other caregivers. Explain nursing actions, team members and roles, and the overall goal of the interdisciplinary team.
3. Create a hypothetical dialogue between a nurse and a teen who has lost a friend to suicide. What coping strategies may the teen use, and how can the nurse support the teen?
4. Create a poster comparing DNR, comfort measures, and. Give examples of clinical circumstances in which these end-of-life orders may be in place.
5. Use the internet to create a table comparing arguments for and against provider-assisted death.

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CHAPTER 37
Family Dynamics

FIGURE 37.1 Healthy family dynamics influence individual health and wellness. (modification of "Ponggal Festival 2019 - Family Portrait" by John Ragai/Flickr, CC BY 2.0)

CHAPTER OUTLINE

37.1 Family Concepts
37.2 Family Framework
37.3 Family Dynamics Influence on Health Outcomes
37.4 The Nurse's Role in Caring for the Family Unit

INTRODUCTION Families play a central role in nearly every aspect of an individual's life. Family units are important in all cultures throughout the world. Based on U.S. census data, the United States identifies more than 84 million families (Statista, 2023). U.S. families have increased by nearly 40 million over the last 60 years (Statista, 2023). Families significantly affect individual health over a person's lifetime. Families have both passive and active influences on health outcomes. Passive influences include genetic disorders passed within families, unspoken family values that affect healthcare consumption and trust in the healthcare system, and interactions that promote or limit emotional well-being. Families also have an active role in health, directly influencing lifestyle choices, such as exercise, nutrition, substance use, social determinants of health, and socioeconomic status. Interactions among family members may result in a positive or negative impact on an individual's health status. Families and family dynamics change over time in parallel with the life stage of adults, the growth of children, the creation of new family units, birth, death, and changing health patterns. With a longer average adult life span, individual roles within a family may change many times throughout an individual's lifetime.

Nurses play a crucial role in the support of families and individuals within the family structure. From education regarding family dynamics and coping skills for managing acute or chronic health conditions to social considerations for managing dysfunctional family interactions and family interactions in the face of illness, nurses empower

individuals and families to create supportive and healthy connections.

37.1 Family Concepts

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify different perceptions of family
- Recognize different family assessment models
- Describe different theories of family function

Understanding the complexities of family perceptions helps nurses incorporate the family in an individual's care plan to meet the patient's needs best. In addition, nurses can care better for a family unit by understanding how each individual perceives the family as a whole and their specific role and value within the family. Family structures influence healthcare costs and social determinants of health, guide family assessments, and direct nursing interventions. By understanding family assessment models, nurses can properly evaluate families and family dynamics to provide personalized care. Nurses also need to understand the theories of family function to create a culture of acceptance and inclusion for all family types.

Family Perceptions

Individuals perceive family differently depending on cultural values, social norms, age, and developmental stage. These perceptions can change over one's lifetime or fluctuate rapidly depending on family dynamics. Individuals identify with specific traits in their family structure but may also value and strive for traits of other families. These family perceptions may conflict with or align with the nurses' own family structure. Nurses create an environment of inclusion and respect by maintaining an awareness of family structures that differ from their own and acknowledging inherent values within different family structures. In this way, they provide unbiased, compassionate, and professional care.

Children begin understanding family structure from a very young age, and that understanding develops and changes as an individual progresses through developmental stages. The various concepts of family include the type of family, family members, gender roles, family values, internal family relations, and family relations outside the family core. Many cultural, social, and personal aspects affect how family is defined for each individual. These external factors affect how individuals see their own family.

A sense of family belonging may wax and wane over a lifetime, depending on internal and external factors, such as changes in the individual and how they see themselves fitting into the wider world and family changes related to life stage changes, deaths, marriages, divorce, and births. Perceptions of family and belonging depend largely on intra-family relations, particularly the parent-child relationship, which may include non-parent guardians. Some studies show that this feeling of belonging is more pronounced in individuals living in households with two biological parents (King & Boyd, 2016). This sense of well-being tied to the feeling of belonging within the family tends to lend a protective factor, particularly in adolescents who are experiencing emotional distress, violence, depression, suicide, and poor academic performance. A sense of family belonging creates more positive outcomes (King & Boyd, 2016). Additional factors that may lead to positive family perceptions include a higher parental education level, higher overall incomes, and positive sibling relationships. While some information points to similar effects in stepparent families, little research is available on adoptive families, single-parent families, or children living with non-relational guardians. Understanding the definition of family and the roles of individuals within the family gives nurses more insight into how the perception of family affects long-term individual outcomes.

Definition of Family

Many variations exist in the definition of family. These include legal, cultural, social, and personal definitions of family. What constitutes a family is a prime area of debate for legal and health-related purposes. Family is often defined in terms of structure, with each family member filling a specific role (like father, mother, or child). On the other hand, family may be defined in terms of how members relate to one another. A **family** is a socially recognized group, usually joined by blood, marriage, cohabitation, or adoption, that forms an emotional connection and serves as an economic unit of society. Sociologists identify different types of families based on how one enters into them. A **family of orientation** refers to the family into which a person is born. A **family of procreation** describes one that is formed with the intention of bearing children. These distinctions have cultural significance related to issues of

lineage.

In a social or cultural context, families may also be defined as groups where participants view themselves as family members and act accordingly. In other words, families are groups in which people come together to form a strong primary group connection and maintain emotional ties to one another over a long period. Such families may include groups of close friends or teammates. Another perspective views families as groups that perform vital roles for society—internally (for the family itself) and externally (for society as a whole). Families provide for one another's physical, emotional, and social well-being. Parents care for and socialize children. Later in life, adult children often care for older adult parents.

The Health Resources and Services Administration (HRSA) defines family as "a group of two or more persons related by birth, marriage, or adoption who live together; all such related persons are considered as members of one family" (HRSA, 2023). This definition also considers older children who do not reside in the same home but are financially supported by the family. This definition does not consider foster children or non-related individuals functioning as part of the family unit while living in the same home. Other definitions suggest that a family is a kinship unit that remains present regardless of whether these individuals share a residence. In the current setting of communication ease, family relationships and communication can persist over long distances while influencing one another (Jabbari et al., 2023). Family structure and definition are complex and vary depending on whether social constructs, statistical analysis for census purposes, or individual beliefs and values related to the family are considered.

The government is less flexible in its definition of family. The U.S. Census Bureau defines a family as "a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together" (U.S. Census Bureau, 2023). This definition of family does not capture the many other subtle ways people define family. While this structured definition can be used as a means to track family-related patterns over several years, it excludes individuals, such as cohabitating unmarried heterosexual and same-sex couples. Legality aside, health professionals would argue that the general concept of family is more diverse and less structured than in years past. Society has given more leeway to the design of a family, making room for what works for its members (Richardson et al., 2022).

Relationship Between Families and Illness

The relationship between family and health has many facets. First, genetics and heredity significantly affect disease risk and overall health outcomes. Additionally, family dynamics and the environment have dramatic effects on individual health. This stems from the family's health practices, health literacy, and health choices, particularly during childhood. Family choices associated with health affect a child from the early years and often set the stage for health or disease later in life.

Heredity is a complex topic that is associated with a variety of health disorders. A disorder is considered **hereditary** if an individual can pass it naturally from parent to offspring through their genes. This makes hereditary disorders a subset of genetic disorders. A **genetic disorder** is caused by a change in a genetic DNA sequence or a mutation in a gene or multiple genes. Some, but not all, genetic disorders are heritable or can be passed from one generation to the next through their genes. These mutations can be caused by environmental factors or damage to DNA. Emerging research suggests that most diseases have some genetic component, meaning that there is some damage to a gene causing the disorder either before or after birth (NIH, Human Genome, 2018). Genetic and hereditary disorders encompass both rare disorders and common diseases.

A **familial disorder** is a disease that tends to present among individuals from the same family line. These may be genetic in origin or have a multifactorial cause. Familial disorders that are passed from one generation to the next through genetic material are called hereditary conditions. These gene mutations may cause a disease noted at birth or a risk for developing a disease later in life. Genetic disorders may also be affected by environmental factors. For example, an individual may have a genetic mutation predisposing them to high blood pressure. Still, they may or may not develop high blood pressure or hypertension if they maintain a healthy weight, consume a nutritious diet, and exercise regularly. In this way, environmental factors can also influence the expression of genetic predisposition for specific disorders. Familial diseases include the following:

- coronary artery disease
- hypertension
- heart disease

- arteriosclerosis
- congenital heart defects
- type I diabetes
- type II diabetes
- asthma
- lung cancer
- prostate cancer
- breast cancer
- colon cancer
- osteoporosis
- thyroid disorders
- autoimmune disorders
- arthritis
- Alzheimer disease
- autism spectrum disorders
- migraine headaches

Examples of hereditary chromosomal and genetic disorders include the following:

- down syndrome
- albinism
- ankylosing spondylitis
- cystic fibrosis
- Duchenne muscular dystrophy
- Ehler-Danlos syndrome
- Huntington disease
- Marfan syndrome
- sickle-cell anemia
- familial hypercholesterolemia
- hemochromatosis

PATIENT CONVERSATIONS

Breast Cancer Risk

Scenario: Raylee is a 25-year-old patient who has been a patient at the clinic for five years and has no specific concerns today. She is presenting for a general health exam.

Nurse: Let's review your medication and supplement list and update your family history.

Patient: I'm feeling healthy now, but I decided I should keep up with my routine exams because my mom was diagnosed with breast cancer last year. She keeps telling me I need to get tested, but I don't have any breast concerns like she did, and I take better care of myself, too.

Nurse: It sounds like your mom is concerned about your risk for breast cancer. When was your mom diagnosed with breast cancer?

Patient: She was 49 years old.

Nurse: Do you know if her oncologist recommended that you and your sister have genetic testing?

Patient: Yes, I think that's what she wants me to do, the BRCA test. I'm just not sure that's needed since I'm young and healthy, and I don't smoke or drink like my mom.

Nurse: You're right that maintaining a healthy lifestyle can help prevent cancers, but some cancers have a stronger genetic component. If your mom has told you that a BRCA test is indicated for you, this may mean she had a breast cancer type that is related to a genetic mutation that you may have inherited.

Patient: Does this mean I will get breast cancer?

Nurse: Not necessarily, but a test to see if you have this gene mutation can help you and your doctors understand your risk. I'd like to refer you to a genetic counselor. Is this okay?

Patient: Yes, I'd like to learn more about the test and decide if I want to get it done. Thank you.

LINK TO LEARNING

Watch this video on ankylosis spondylitis (https://openstax.org/r/77AnkylosisSpon) to learn more about this genetic rheumatological disorder that is often overlooked in young individuals.

While there are many ways in which family and family history affects individual members of the family, illness also affects families as a whole. In particular, chronic diseases and illness can have a significant impact on families and family dynamics. Health and disease affect financial resources, time resources, family member relationships, and roles. In addition, illnesses of one or more individuals can affect emotional coping strategies and the ability to engage in meaningful activities together. The illness of one family member may negatively affect the health of other family members by creating sleep disruptions, altered nutrition choices, increased anxiety/depression, caregiver fatigue, limited freedom, and emotional fatigue (Golics et al., 2013).

Family social dynamics, community interaction, and cultural perceptions of illness also affect health and risk for illness. These factors influence how an individual interacts within their community in relation to housing, education, physical exercise, nutritious dietary choices, and accessing medical care. The CDC (2023) reports that low family socioeconomic status, including income level, education level, and employment status, can increase risks for certain illnesses, such as cardiovascular disease.

Cultural perceptions of illness are often learned first within the family unit. This can affect trust or mistrust in the healthcare system, how and when individuals seek medical care, and adherence to recommended medical or nursing interventions. Cultural values guide family reactions to illness, perceptions of illness, coping strategies, response to the idea of medications, treatment adherence, and emphasis on health. Positive family interactions predict positive coping strategies and better outcomes, even in the face of chronic disease. Nurses have the opportunity and obligation to assess families for all of these characteristics so that they can provide care tailored to the patient and that patient's family.

Family Assessment Models

Family assessment models help nurses understand family structure and dynamics in a general sense. By assessing individual families, nurses can better recognize the impact of acute or chronic illness on the family and each member. Several models exist to help nurses evaluate families and individuals within the family context, including the Calgary Family Assessment Model and Friedman's Family Assessment Model. These models allow nurses to gather information to make informed decisions when creating a care and treatment plan for families and individuals.

Calgary Family Assessment Model

The Calgary Family Assessment Model (CFAM) and the Calgary Family Intervention Model (CFIM) were introduced in 1984 and 1994 by nurse researchers Maureen Leahey and Lorraine Wright. These practice models are widely known and used in nursing to understand families and create family-based interventions. The practice models were based on clinical practice, allowing for direct application to nurses working with patients. The founders of CFAM/CFIM acknowledge the many changes in family structure and assessment since these models were developed but are confident that the models are fluid and adaptable to contemporary circumstances affecting families (Leahey & Wright, 2016).

While the CFAM/CFIM is a theoretical framework, it directly affects nursing actions. The CFAM/CFIM focuses on identifying family strengths, weaknesses, ideals, and values. Using strategies, such as interviews, therapeutic communication, practice-based evidence, and reflection, nurses identify the strengths of each family. With this knowledge, nurses can work directly with families to co-create interventions that support their strengths (Leahey & Wright, 2016). By including the family in planning, the focus moves away from nurse-initiated interventions and

empowers the family in managing illness (Leahey & Wright, 2016). The CFAM/CFIM uses interview tools to evaluate a family's structural, developmental, and functional aspects. A portion of the CFAM that is particularly applicable to modern nursing practice is the 15-minute interview (Table 37.1). The researchers outline several essential elements, referred to as key ingredients (Wright & Leahey, n.d.). This interview technique maximizes information gathering within a time frame appropriate for busy nursing practice.

Key Ingredient	Definition	Nursing Action
Manners	Maintaining culturally appropriate social behavior, including respect, politeness, and courtesy	• Introduce oneself. • Make eye contact. • Refer to the patient by name. • Acknowledge family members or other support persons. • Explain nurse role. • Explain procedures. • Keep time commitments.
Therapeutic communication	Communication techniques that promote healthy discussion between the nurse and patient/family	• Practice the art of listening. • Invite questions from patients. • Invite questions from family members. • Acknowledge patient/families' expertise in their own health. • Discuss treatment and follow-up with the patient and family.
Family genograms and ecomaps	Diagrams illustrating patient and family demographics, behavior, interactions, and health history	• Sketch a quick genogram during the initial interview. • Create a standard set of questions. • Ask about family members, health, and family roles.
Therapeutic questions	Key questions that elicit answers helpful for providing nursing care	• Ask what is most/least helpful to the patient. • Ask the patient what they need. • Ask the patient what their biggest challenge is. • Ask what questions the patient has.
Commending family and individual strengths	Positively and verbally acknowledging individual and family strengths	• Offer a compliment. • Acknowledge positive actions the patient has taken. • Verbalize positive actions observed. • Voice patient and family strengths.

TABLE 37.1 Key Ingredients for the 15-Minute Interview

Recent studies reflect the current use of the CFAM/CFIM in contemporary nursing practice across disciplines (Mileski et al., 2022; Zimansky et al., 2020). Nurses continue to use these frameworks to understand family strengths, experiences with illness, and coping strategies. The CFAM/CFIM may be beneficial for nurses in providing patient education. Understanding the family strengths allows nurses to tailor teaching methods, involve family members, and anticipate challenges that patients may experience in managing illness. Moreover, applying these

models allows nurses to practice effective communication, recognize and address specific barriers to communication, and promote intervention adherence in individual patients (Mileski et al., 2022). In particular, these strategies are effective during end-of-life care, psychiatric illness, and the highly emotional periods of the disease process (Mileski et al., 2022). Using the CFAM/CFIM during the assessment of patients and their families can empower the patients and families to embrace their strengths, lean on family coping mechanisms, and feel heard in their illness journey.

Friedman's Family Assessment Model

The Friedman Family Assessment Model was created by Dr. Marilyn Friedman and published in 1981 (Texas Woman's University, 2023). Friedman's Family Assessment Model is based on the concept of treating the family in addition to the individual. Friedman created a family assessment tool based on sociology concepts and her clinical nursing experience (Texas Woman's University, 2023). The assessment tool is divided into six sections for evaluating a family (Table 37.2).

Assessment Category	Assessment Components
Identifying data	• Name • Contact information • Family composition (genogram) • Cultural factors • Social class • Religion
Family development stage	• Developmental stage • Family history • Family of origin history
Environmental factors	• Home • Neighborhood • Geographic location • Community interactions
Family structure	• Communication patterns • Power structure • Role structure • Values

TABLE 37.2 Friedman's Family Assessment Tool Categories

Assessment Category	Assessment Components
Family functions	• Connectedness • Response patterns • Child-rearing practices • Value of children • Health and illness beliefs • Perceived health • Dietary practices • Physical activity • Rest • Substance use • Illness prevention strategies • Perception of healthcare services • Use of CAM
Family stress, coping, and adaptation	• Stressors • Barriers to wellness • Reaction to stress • Coping strategies • Adaptation to illness or crisis

TABLE 37.2 **Friedman's Family Assessment Tool Categories**

The CFAM/CFIM and the Friedman Family Assessment Model offer similar perspectives on the importance of incorporating the family in the assessment of the individual. The CFAM/CFIM has a strong focus on communication between nurses and families. This model suggests that effective interactions with families allow the nurse to obtain information crucial in patient-centered care. The CFAM/CFIM 15-minute interview is a good choice for a nurse assessing the family of a patient being admitted to an in-patient hospice facility. This will allow the nurse to understand how best to help the family and patient navigate difficult physical and emotional changes. The Friedman Family Assessment Model guides the nurse in creating family-centered care to enhance the care of individual family members. This assessment model is a good choice for a nurse working with the family of an adolescent working toward discharge from an inpatient psychiatric health facility, for example. The nurse will understand the needs of the patient as well as the family members to maintain health and safety after discharge.

Theories of Family Function

Healthcare providers, sociologists, social workers, and mental health professionals use many theories of family function. Because these theories explain the social interactions among family members and between families within a community, they provide context and are important in guiding nursing interventions. Several theories are relevant to nursing practice, including the family systems theory, Bowen family systems theory, and family communication patterns theory.

Family Systems Theory

The family systems theory has proven to be very powerful in understanding the family. The family systems theory claims that the family is understood best by conceptualizing it as a complex, dynamic, and changing collection of parts, subsystems, and family members. Much like a mechanic would interface with the computer system of a broken-down car to diagnose which systems are broken (transmission, electric, fuel, etc.), a nurse would interact with family members and consider how and where the systems of the family are working and where they need repair or intervention. Nurses consider systems theory in integrating healthcare interventions for an individual with the care of the family. Nurses must also consider how family dysfunction affects illness and how illness contributes to the function or dysfunction of the family.

This theory also addresses the issue of **boundaries**—distinct emotional, psychological, or physical separateness between individuals, roles, and subsystems in the family. Boundaries are crucial to healthy family functioning. The

family systems theory addresses a variety of factors that affect the role family plays in the health of an individual. Consider a 75-year-old female with progressive Alzheimer disease who lives with her husband in an apartment attached to her daughter's home. Her dementia is worsening, and her daughter, son-in-law, husband, and grandchildren are facing significant challenges in her care (Table 37.3).

Family Interaction Considerations	Family Roles
Emotional responses	The patient's husband feels stressed and overwhelmed by his wife's dementia and responds with irritation. The daughter spends a great deal of emotional energy attempting to diffuse her father's sense of overwhelm.
Role expectations	Because the patient is no longer able to perform ADLs and IADLs independently, the daughter and adolescent granddaughters have taken on new roles in providing this care.
Boundaries	While the husband wishes for a continued level of privacy in his home, his wife's condition necessitates frequent visits from family member providing caregiving.
Loyalties	The daughter is overwhelmed by the idea of "putting mom in a nursing home." She feels this is a betrayal, even though the family is struggling to provide enough twenty-four-hour care.
Belief systems	The daughter strongly believes in taking personal responsibility in caring for her family, which is influencing her choice to keep her mom at home as long as possible.
Resilience patterns	Recently, the daughter has reached out to home health for assistance. She recognizes that even though she wants to provide the best care, the level of care needed is affecting her ability to maintain balance in caring for her children and keeping her work hours.
Communication techniques	The daughter struggles to communicate with her father who expresses his frustration with anger. She is using gentle redirection techniques when addressing challenging behaviors associated with her mom's dementia.

TABLE 37.3 Family Systems Theory Example

Bowen Family System Theory

The Bowen family systems theory, developed by psychiatrist Murray Bowen, MD, is a framework for understanding human behavior within a family construct. This theory describes the family through emotional connection and family interactions in terms of systems. Bowen's theory suggests that the interconnectedness of family members affects the way family members seek out attention, react to one another, and expect to be treated. Changes in one family member's function, emotional state, or health directly affect others. Nurses must consider these reciprocal reactions within a family when caring for individuals experiencing a health change or crisis.

The interconnectedness of families can promote positive coping strategies, including cohesiveness, cooperation, and emotional responsiveness (Bowen Center, n.d.). This same emotional attachment among family members may also contribute to negative responses to health crises or illnesses in family members, which may include the following (Bowen Center, n.d.):

- emotional overwhelm
- isolation
- unrealistic expectations
- poor decision making

Because emotional responses to family illness can be so intense, family members responding to an illness in another family member may experience physical symptoms, anxiety, substance abuse, and/or depression (Bowen

Center, n.d.). By understanding how the interconnectedness of family members affects emotional responses to illness and healthcare decision making, nurses can anticipate challenges and negative responses. Nurses can encourage appropriate coping strategies guided by specific family dynamics.

LINK TO LEARNING

Watch this video on the Bowen family systems theory (https://openstax.org/r/77BowenSysThery) to learn more about this sociological theory that explains family interaction based on emotional connection.

Family Communication Patterns Theory

McLeod and Chaffee developed the family communication patterns theory in the early 1970s based on the concept of **co-orientation**, in which two or more people experience the same physical or emotional input and develop a corresponding perception or response (Koerner & Fitzpatrick, 2006; Hunsley et al., 2024). The theory postulates that each person develops their perception of an experience and evaluates how the other person perceives the situation. Additional terms important in understanding the communication patterns theory are as follows:

- **agreement**: in which the individuals have the same perception
- **accuracy**: in which a person's perception of the other person's evaluation accurately reflects the other person's actual perception
- **congruence**: in which an individual's perception and the other person's perception are similar

These concepts are essential for nurses caring for families so they can better understand interpersonal dynamics among family members. Perceiving harmony or incompatibility in accuracy, agreement, or congruence between family members' perceptions about health and illness helps the nurse guide the family toward appropriate interventions. The more accuracy and congruence between family members on a given topic, the more likely they are to perceive a shared reality (Hunsley et al., 2024; Koerner & Fitzpatrick, 2006). This increases their ability to interact positively with one another, provide support, and maintain coping skills.

Nurses can use these concepts to help family members navigate relationships and develop healthy communication patterns, even if their perceptions differ. The original researchers developed an instrument for assessing family communication patterns. In **conformity** communication patterns, family members are expected to conform to hierarchical family values. In **conversation** communication patterns, family members are encouraged to evaluate topics independently and discuss them with the family. The communication patterns lead to four common family types that exhibit specific communication patterns:

- pluralistic: high conversation, low conformity
- consensual: high conversation, high conformity
- protective: low conversation, high conformity
- laissez-faire: low conversation, low conformity

Consider the idea of spiritual family values. In a pluralistic family structure, the parents and children will have frequent open discussions about spiritual beliefs, and children are encouraged to make their own choices regarding these values. Conversely, in a family with a consensual structure, the family openly discusses spirituality, but the children are expected to conform to specific spiritual values. In a family with a protective structure, obedience to spiritual values is expected, without a significant amount of discussion on the topic. In a family with a laissez-faire structure, the family does not discuss individual values, and children develop their own value systems based on personal experiences. The family communications pattern theory can help the nurse understand how families interact so they can tailor communications and interventions most effectively.

LIFE-STAGE CONTEXT

Parenting Styles

Studies suggest that various parenting styles may affect outcomes for children. Commonly acknowledged parenting styles include the following:

- authoritarian
- authoritative
- permissive
- uninvolved

Each style has some positive and some negative attributes. Authoritarian parenting involves strict rules and punishment that often result in outward obedience. This strategy may also result in aggression or low self-esteem. Permissive parenting, while warm and nurturing, offers little structure, role-modeling, or guidance. This may lead to negative health habits, impulsive decision-making, and a lack of self-regulation. Uninvolved parenting is typically hands-off, offering minimal support, poor communication, and lack of discipline. While children raised under this parenting style may develop resilience, they also struggle with emotional connection, decision-making, and difficulty with interpersonal communication. Authoritative parenting offers a mix of nurturing relationships and appropriate boundaries, expectations, and communication. Overall, this strategy has the highest likelihood of positive long-term outcomes and the fewest negative outcomes.

Parenting styles are only one aspect affecting health habits, perceptions, and outcomes as children move into adulthood. Nurses working with families can consider these parenting styles when developing care plans. Focusing on parenting strengths while encouraging aspects of authoritative parenting may help families succeed in achieving a healthy lifestyle (Sanvictores & Mendez, 2022).

37.2 Family Framework

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the structure of family
- Understand the functions of family
- Recall the stages of the family life cycle

When assessing families, nurses must consider many aspects of family structure and how this affects disease prevalence, response to illness, and coping strategies. Important aspects of family structure include family composition, gender roles, birth order, and family member relationships. These interactions include immediate and extended family members in a traditional family structure. In unconventional family groups, individuals still function within the social construct of a family. Applying family systems theories, nurses may use genograms or ecomaps to help define and conceptualize individual families and their members. After all, understanding the family structure and associated tasks helps the nurse offer meaningful interventions to families.

Family Structure

The internal and external makeup of families is known as **family structure**. These structures include the type and number of family members, living arrangements, and interactions. Legal or census definitions of family structures may not match cultural or social definitions of family. Definitions of the family may include individuals living within the same household, individuals related by blood or kinship, and individuals functioning financially as a family. Some groups of individuals function as a family regardless of living location or kinship. For nurses, the critical part of understanding family structure is accepting families as they perceive themselves. Respecting family units is crucial in providing comprehensive care to patients.

The internal and external structure of families directly affects the health of family members. Different family structures are associated with various long-term health outcomes, depending on the circumstances. Some evidence suggests that marriage combined with nonviolence and stability are associated with better outcomes in children (Bzostek & Berger, 2017). According to census records, 65 percent of children in the United States live with two married parents, 5 percent live with two cohabitating parents, 22 percent live only with their mothers, and 5 percent live only with their fathers (ChildStats, 2022).

Internal Structure

Internal family structure relates to the relationships among family members, including gender roles and sibling order. Subsystems within families refer to the various interpersonal relationships, such as parent-parent, parent-child, sibling, and grandparent-child, and the interplay among these relationships.

Family Composition

The design of a family structure, including relationships between members, known as **family composition**, is not static and is influenced by births, deaths, marriage, and divorce. Family composition is also influenced by life circumstances that may affect living arrangements. The family composition may consist of a nuclear, blended, or extended family, which may fluctuate over time. The family composition may influence health outcomes because of financial resources, living situations, emotional stability within the family, and coping strategies. Family composition evolves as children are born, grow up, and create new family structures outside their family of origin.

REAL RN STORIES

Sandwich Generation

Nurse: Alice, RN
Clinical setting: Public Health
Years in practice: 22
Facility location: Pennsylvania

I've been a public health nurse at the county health department for 18 years. I work with children, teens, adults, and families struggling with access to health care. I do a lot of home visits evaluating the needs of families with children with special needs. Most of these children have autism spectrum disorder (ASD). One of the most exciting cases I encountered was an extreme case of a married couple struggling in the sandwich generation—middle-aged adults caring for their own children as well as their aging parents. The family had four children, with the third child diagnosed with ASD. The father worked outside the home, and the mother performed all of the family and care duties within the home. The father's mother also lived in a small, attached apartment with the family. The grandmother developed mild cognitive impairment, which slowly progressed to more severe dementia. The mother was pulled in many directions caring for a young child with a disability as well as a cognitively impaired older adult family member. Finding resources for this family was challenging, particularly securing respite care to allow the mother to attend school events and functions with her other children.

Caring for a young family and an additional older family member also strained this family financially. We were able to set them up with some resources and care options to provide financial and stress relief. Many adults in midlife struggle with the burdens of being the sandwich generation. Our job as nurses is to help them navigate this difficult time and support them in their efforts to provide the best care for their families.

Gender Roles

Gender role theory posits that males and females learn gender role behaviors and attitudes from the family and overall culture in which they grow up and that non-physical gender differences are a product of socialization. Social role theory proposes that social structure is the underlying force behind gender differences and that the division of labor between two sexes within a society motivates the differences in their respective behavior. Division of labor creates gender roles, which, in turn, leads to gender-specific social behavior.

Family is the most important agent of socialization because it is the center of a child's life. Socialization theory tells us that primary socialization—the process that occurs when a child learns the attitudes, values, and actions expected of individuals within a particular culture—is the most important phase of social development and lays the groundwork for all future socialization. Therefore, the family plays a pivotal role in the child's development, influencing the attitudes the child will adopt and the values the child will hold.

Socialization can be intentional or unintentional; the family may not be conscious of the messages it transmits, but these messages contribute to the child's socialization. Children learn continuously from the environment that adults create, including gender norms. For example, a child who grows up in a two-parent household, with a stay-at-home female parent and a male parent who works outside the home, might internalize these gender roles, regardless of whether the family is teaching them directly (see Gender Role Expression for more on gender roles). Gender roles within families are changing based on the changing structure of families in same-sex and other LGBTQIA+-parent families. These families show that gender stereotypes do not always apply, and gender roles within a family may be shared and dynamic over time.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care, Respecting Family Differences

Definition: Recognize the patient as the source of control and full partner in providing compassionate and coordinated care based on respect for the patient's preferences, values, and needs.

Knowledge: Nurses must understand the multiple dimensions of patient-centered care. Involving the family, friends, and other members of the patient's support network is crucial. The nurse must understand differences in cultural beliefs related to family and respect all family structure types.

Skill: During the family interview, nurses can identify patient preferences and understand their values and beliefs. This will help the nurse create an atmosphere of inclusion, respect, and sensitivity to family differences.

Attitude: Nurses can encourage patients to express their values and seek healthcare options aligning with them.

Sibling Rank Order

The effect of sibling rank order in interpersonal family interactions varies between individuals and families. While some theories attempt to relate personality to birth order, this does not hold true for every person or in all families. Evidence does suggest that family factors, such as financial resources, social interactions, and the number of children, affect children differently based on their birth order and the circumstances within the family during their early years (Yan, 2023). Other factors affecting sibling order are parental values that change and adapt over time and interactions based on specific child personalities. Nurses can keep birth order in mind and consider factors that may affect an individual's perceptions of health. Still, it must be viewed in the context of various other factors.

REAL RN STORIES

Sibling Rank Order After Death

Nurse: Gabe, RN
Clinical setting: Hospice
Years in practice: 10
Facility location: Florida

As a hospice RN, I interact regularly with families struggling with death, loss, and grief. I've encountered some families on multiple occasions. I cared for one large family during the final months of their youngest daughter, Erin's, struggle with osteosarcoma. I cared for the family several years later during the grandfather's battle with colon cancer. Most of the surviving children were young adults at that time. I remember the oldest son commenting on how the youngest surviving sister, Jessica, had taken on the role of "the baby of the family."

During their interactions, the mother, father, and older siblings were seen doting on Jessica, making travel arrangements for her, and changing plans based on her preferences. There was palpable tension among some of the siblings during these instances. Some family members seemed to recognize the preferential treatment, while others, particularly the parents, did not. When the topic was approached in a conversation, the mother became tearful and the father defensive.

When I asked the oldest son about this dynamic, he said the family had never really gotten over Erin's death. Some individual family members attended counseling independently, but no group counseling was pursued by the parents when the siblings were younger. He said, "This is just something else we have to deal with as part of her death." Without bringing up this topic directly, I explained that the impending death of another family member would likely bring up past emotions related to Erin's death. I encouraged family members to express their concerns with each other and make their individual needs known. I explained that discussing their grief coping strategies with one another may be beneficial for the whole family. In addition, I encouraged the family to seek counseling as a group to work through past and current grief.

Subsystems

Family subsystems refer to interpersonal relationships within the family unit. These include the following:

- sibling relationships
- parental relationships
- parent-child relationships
- grandparent-parent relationships
- grandparent-child relationships

These relationships are guided by boundaries, communication techniques, shared experiences, and unspoken connections. Health subsystems within a family help buffer conflict between other members' relationships and increase individuals' abilities to cope and maintain resilience in the face of illness or adversity. These subsystems are primarily beneficial but can become toxic if dysfunctional interactions lead to **coalition**s or triangulation in which family members team up against another family member.

Genograms

A **genogram** is a written or digital diagram showing relationships between family members. Genograms are useful in understanding kinship among family members. Genograms often indicate divorce and remarriage, as well as stepsibling relationships. More detailed genograms may note types of relationships, such as close and strained relationships. Using genograms in addition to understanding the basics of family structure will help the nurse in understanding each individual family.

LINK TO LEARNING

Visit this website on creating a family health portrait reflecting a family health history (https://openstax.org/r/77FamilyHealth) to learn more.

External Structure

The **external family structure** relates to how a family interacts with their community and extended family. In some families, day-to-day interactions include extended family members. In these families, multiple nuclear families may live near one another, and individual family members play important roles in the lives of others. Roles may differ in these families or may include different roles that fill childcare needs, emotional support, or financial needs. In interactions with the wider community, families support one another and seek out families with similar views and preferences. These family groups often enjoy meals together and care for each other as a family.

Extended Family

The **extended family** is typically made up of at least three generations: grandparents, parents, and children. In families with traditional marriages or two-partner families, there are parallel generations on the mother's and father's sides. Extended families vary significantly based on culture. This variation can also affect the individual family members living within a household. In some cultures, the extended family includes cousins, aunts, uncles, great-grandparents, and any combination of these individuals. In addition, blended families will have a variety of extended family structures depending on relationship patterns. Nurses must keep these considerations in mind in promoting culturally competent care.

External Systems

In addition to extended family, the external family structure encompasses how the family interacts within the community. This may include religious or spiritual connections, friend groups, neighborhoods, childcare connections, volunteer projects, and school/work interactions. These factors may affect individuals' health based on illness exposure, varying beliefs about health or health care, and shared interests. These community interactions also vary depending on logistics in providing care for children, individuals with disabilities, individuals with mental health disorders, or older adults.

Ecomaps

An **ecomap** is a useful diagram that shows connections between families or family members and their social environment. Unlike genograms, which show primarily kinship relationships between family members, ecomaps can

focus on one or more individuals to help understand how this person interacts with their environment, including their family. An ecomap illustrates family dynamics and social support systems, such as church, therapists, counselors, friends, teachers, and co-workers. Social support systems may also include sports teams, hobby clubs, and spiritual influences other than church. Ecomaps can help nurses identify family strengths as well as gaps in resources or barriers to attaining quality health care. For example, in discharge planning, nurses can rely on an ecomap to help identify support resources for an older adult after a hip fracture, including close proximity to family members, supportive friends, church support, and community services, such as Meals on Wheels or library book delivery. An ecomap can also outline healthcare resources, such as primary care providers, social workers, financial representatives, medical specialists, and physical therapists. The nurse can rely on these members of the healthcare team to promote quality care for the individual. Ecomaps are dynamic tools and can be changed and adjusted as circumstances change for the family or individual (Figure 37.2).

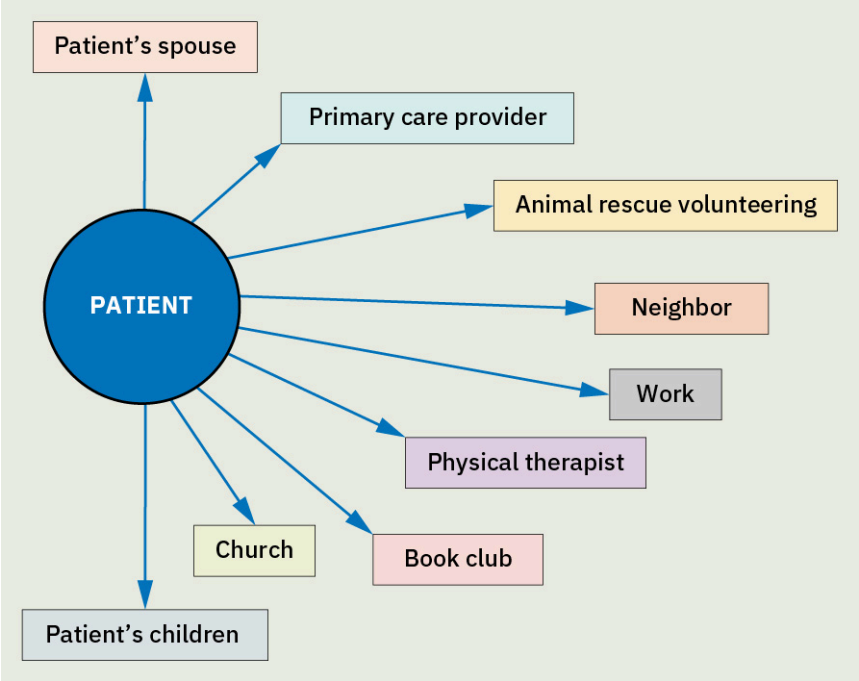

FIGURE 37.2 This sample ecomap displays a patient's diverse support network. Ecomaps can help nurses identify family strengths and outline healthcare resources for patients. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Watch this video on how to create an ecomap (https://openstax.org/r/77Ecomap) to learn more.

Functions of Family

The primary function of the family is to ensure the continuation of society, both biologically through procreation and socially through socialization. Given these functions, the nature of one's role in the family changes over time. Beginning in early childhood, the family plays a pivotal role in socialization. Children learn where they fit within the social construct of their family and how their family fits within the wider social world. The parental role includes guiding and socializing children. In blended families, marriage sometimes alters legal parenthood and creates joint parental arrangements. Marriage also establishes a relationship between the extended families of the husband and wife. None of these functions are universal but depend on the culture in which the family is established.

Environment

Family plays an important role in creating a home and community environment. Healthy interactions in the home lead to healthy long-term relationship patterns. All family relationships are reciprocal but not always equal in the ways they affect physical and emotional health. A healthy home is crucial for providing a sense of security during times of health crisis. A home environment that promotes health is free from abuse and neglect and promotes a

sense of physical and emotional safety for family members. All families have interpersonal struggles, but an overall atmosphere of respect and cooperation supports a healthy emotional environment. Families that promote shared interests, support differences, and encourage shared values among family members create a foundation for strong relationship patterns outside the family unit.

Reproductive Function

The role of the family in reproductive function is multifaceted. The family unit is the classic unit of procreation. The creation and birth of children grow families and create additional layers of relationships with immediate and extended family. In addition, the social norms within the family regulate sexual reproduction based on the number of children, how the children are parented, and the value placed on children within the family.

Socialization

The value of children and intergenerational relationships within the family is the basis of socialization within the community. Family is the first place individuals receive information about social norms, cultural values, and spiritual beliefs. The family has a role in social identity, social class, race, ethnicity, and religion. Some aspects of socialization are innate, while others are learned. Socialization can also be a source of conflict. For example, spiritual and cultural beliefs may be challenged as children grow and develop their own thoughts and beliefs.

Economics

Families share financial resources in various ways. Financial resources are necessary to secure basic needs, create long-term security, and fund leisure activities. Families that struggle with low income and low socioeconomic status have higher rates of stress and mental health issues (Abrams, 2023). Increased stress levels are associated with a host of medical disease states, including cardiovascular disease and mental health disorders. Financial strain for families may relate to long-standing socioeconomic struggles and debt or unexpected events, such as job loss, injury, or national economic crises. Financial stability is also important during a health crisis, because funds may be needed for transportation, medical care, medications, or procedures. Mounting medical debt is a common issue for families in the United States. The Kaiser Family Foundation (KFF) reports that up to 41 percent of adults have some amount of debt from unexpected medical or dental expenses (2022). This debt can have long-lasting effects on family finances.

Family Life Cycle Stages and Associated Tasks

The set of predictable steps and patterns families experience over time is referred to as the family life cycle. The family life cycle is used to explain the different processes that occur in families over time. Each stage has its own structure with different challenges, achievements, and accomplishments that transition the family from one stage to the next. For example, the problems and challenges that a family experiences as a married couple with no children are likely much different than those experienced as a married couple with teenagers. The success of a family can be measured by how it adapts to these challenges and transitions into each stage.

Early “stage” theories have been criticized for generalizing family life and not accounting for differences in gender, ethnicity, culture, and lifestyle. Less rigid models of the family life cycle account for changes in family development, such as the fact that in today’s society, childbearing does not always occur with marriage. It also reveals other shifts in the way family life is practiced. Society’s modern understanding of family rejects rigid “stage” theories and is more accepting of new, fluid models.

The family lifecycle can be categorized into five stages: independence, coupling, parenting, launching adult children, and the senior years. This concept of family stages is inclusive of a broader range of family types, such as those that do not move beyond the coupling stage, parenting that does not involve procreation but may include adoption or other circumstances of parenting, such as grandparents parenting grandchildren. In addition, this concept does not focus on marriage, which allows for the inclusion of many family types, including those that do not have a traditional marriage. Based on changing family patterns and boomerang kids (adult children who return to live in their parent’s home after having lived independently for a period of time), the senior years may not always be associated with an empty nest.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care for LGBTQIA+-Parent Families

Definition: Integrate understanding of patient and family values and describe how diverse social backgrounds function as sources of family values.

Knowledge: Nurses must consider values and preferences when caring for individuals from LGBTQIA+-parent families. Nurses must keep in mind the wide variety of ways that LGBTQIA+ families may be created, such as through adoption, insemination, or prior heterosexual relationships.

Skill: Nurses can encourage families to explain their family structure during the interview process and incorporate expressed values during care planning and implementation. Nurses must refrain from assuming family structure and preferences based on their own family values.

Attitude: By maintaining sensitivity for family diversity and the challenges LGBTQIA+ families may experience, nurses create an atmosphere of inclusivity. Nurses who take the time to understand different family structures empower the healthcare team to create high-quality patient-centered care plans.

Independence

Most individuals progress through a stage during which they develop independence from their parents. This stage occurs traditionally during later adolescence and young adulthood but varies by culture. This stage often involves children leaving the home, finding new habits, and evaluating the gender and social roles in their family of origin. Making decisions about personal beliefs, spirituality, and values to carry through life is another task during this stage. This independence involves often becoming financially independent as well as emotionally and physically removed from parents. Young adults accomplish this task through relationship building with other adults outside the family circle, establishing work, career, or study commitments, and visualizing themselves as independent while still connected to family.

Coupling

Coupling is the next logical stage and may occur simultaneously with independence. This involves relationships with others, defining one's sexuality, and finding shared goals with another individual. Often, the goal is creating a family, whether or not this involves having children.

Parenting Through Adolescence

Parenting changes rapidly and drastically as children grow and develop. Parenting in the early years does have some similarities with parenting adolescents and young adults, such as setting boundaries, fostering relationships, and allowing independence; the magnitude and variations are distinct. Young children test boundaries and need clear limits while maintaining their sense of autonomy. For adolescents, parents must hold space for boundaries while allowing youth to test true independence in safe and healthy ways. Relationships are crucial during all stages of parenting but change over time. Parents who work hard to instill a strong foundation of social values in children at a young age reap the benefits of well-adjusted and emotionally healthy young adults. While this does not mean that children always make good choices, a foundation of strong relationships gives children an advantage in developing independence and healthy personal, professional, and social relationships.

PATIENT CONVERSATIONS

Health Care as Self-Care

Scenario: Sara is a 47-year-old female who works part-time as a substitute teacher. She and her husband have two teenage sons who participate in tennis, soccer, and ski racing. One son also participates in speech and debate while the other plays in the school orchestra. Sara presents to her PCP for evaluation of fatigue, weight gain, and hair loss.

Nurse: Hello, Sara. It's been a while since we saw you for a wellness exam. It looks like we already have your fasting blood test results to go over.

Patient: Yes, I finally decided to come in. I just can't seem to keep up with my sons and all of their activities. And when we have a day as a family, I'm always so tired that I just want to stay home.

Nurse: That must be frustrating. How long have you been feeling this way?

Patient: I think I've been feeling poorly for at least a year, but I've been so busy going to events and driving my kids around that I thought it was all stress-related. My husband finally told me that I had to make an appointment to find out why I felt so fatigued all the time.

Nurse: Your labs do show thyroid levels that deviate from the normal parameters. Many of your symptoms may be related to a thyroid issue. Your healthcare provider will discuss the results and possible treatment options with you

Patient: So, it's not just life stress. I almost feel relieved that there is something physically wrong that can be fixed. I guess I need to keep better tabs on my own health so that I can enjoy time with my family.

Launching Adult Children

Launching adult children can be an exciting time for families, particularly the youth embarking on the stage of independence. Parents may struggle with empty nest syndrome as children move out and begin independent lives. Some parents embrace this sense of renewed freedom; for a large portion of parents, however, this time is associated with psychosocial stress and a deep sense of grief. This relates to the physical act of children moving away from home and the emotional changes associated with role and relationship changes. This sense of loss and grief may stem from relationship and role factors as well as gender, cultural background, and current social climate within the country. While the concept of empty nest syndrome is commonly known, there are no set identified patterns of emotional or physical symptoms. Mothers tend to feel the effects of the empty nest more prominently, but this is dependent on the underlying relationship and connectedness with the youth. The risk of depression associated with launching children is increased if the parental role is associated with other prominent role changes, such as in the case of a co-occurring career change, an illness, a financial security change, or a move.

For children, this is a time of increasing independence, and success is largely based on their feelings of safety, security, love, and belonging. Young adults branch out if they have support from parents or other mentors and will attain high self-esteem and a sense of respect for themselves and their uniqueness. Safety and security are still held within the core family but become more the responsibility of the youth to maintain their health, find employment and financial security, and begin to think of a family.

Senior Years

During their senior years, individuals focus on maintaining purpose and finding deeper meaning. They may have time to focus more on intergenerational relationships, such as with grandchildren. While they may experience new health risks and concerns, many may find joy in staying active and working to maintain the best health possible. Older adults still require love, belonging, and family security that may be found in children and their families. Depending on health status and cognition, older adults may need additional care in the home of their children or in facilities with assisted living or skilled nursing. The senior years may bring added grief due to the loss of peers to death, health concerns, loss of independence, and failing health. Intergenerational relationships play an important role in the well-being of older adults as they navigate many physical and financial changes associated with aging.

37.3 Family Dynamics Influence on Health Outcomes

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine healthy outcomes influenced by family dynamics
- Recognize unhealthy outcomes influenced by family dynamics
- Describe the effects of illness on family dynamics

Family dynamics play a major role in the health outcomes of all family members. Depending on the dynamics, individuals may experience positive or negative health outcomes. While family dynamics may be ingrained, often the dynamics between family members fluctuate and change based on factors such as the following:

- physical proximity
- financial crises

- medical conditions
- births
- deaths
- coping skills
- emotional connection
- interpersonal relationship skills

Healthy relationships among family members and healthy habits practiced by families lead to positive health outcomes. Overall health may be better, and acute illness recovery may improve. Even in chronic disease, healthy family relationships are associated with better outcomes and a better sense of overall well-being. Long-term negative family interactions are related to emotional distress and physical stress symptoms, which can increase the risk of a variety of health conditions. In addition, lifestyle factors and habits can also increase individual risk for certain types of cancers and gastrointestinal disorders (Salzmann et al., 2022). Most families and individuals have a combination of positive and negative family dynamics that affect their overall and long-term health. Nurses must consider these factors when creating care plans for individuals and families dealing with health crises.

Positive Health Outcomes Influenced by Family Dynamics

Healthy interpersonal relationships between family members, particularly those who live together, result in many health benefits. These include better sleep, relationship resilience, lower stress levels, and positive health promotion habits. These factors promote physical and psychological health and improve resilience and coping in the face of acute or chronic health conditions that do develop. Individuals with a strong sense of well-being and family support can better manage the increased stress of an illness and overcome the struggles (Barnes et al., 2020). Positive health practices within a family strongly predict continued healthy practices generationally. For nurses, focusing on the family aspects that lead to healthy outcomes and concentrating on the whole family changes to meet health goals can improve health outcomes.

Effects on Sleep Health

Sleep habits and patterns are crucial for health. Sleep is among the first level of basic needs in Maslow’s hierarchy of needs. Factors, such as nutrition, safety and security, physical environment, and emotional interactions play a role in the overall quality of sleep, which is directly related to individuals' health over time. Recent studies have found that positive family relationships and family member support are particularly important for adolescent sleep quality and duration. They experience better cognitive development, better performance in sports and school, and improved interpersonal relationships with non-family members (Maratia, 2023).

Effects on Interpersonal Relationships

The basis for interpersonal relationships begins with the family. Family relationships with low stress and a sense of security allow individuals to establish a norm for interpersonal relations. Positive family relationships promote wellness and the ability to be resilient in the face of adversity. Interpersonal conflicts arise within families, but healthy family dynamics allow individuals to resolve these conflicts in a safe and emotionally safe environment. This gives individuals a basis for resolving interpersonal conflict in the wider community and in other personal relationships.

Effects on Stress Level

Stress is affected by sleep, emotional responses, physical safety, and overall mental health. Positive family dynamics set a foundation of emotional security, which results in lower stress levels, the ability to achieve restorative sleep, and the development of coping strategies to manage varied levels of stress. Positive family dynamics minimize interpersonal stressors within these close relationships, creating more resilience when dealing with outside stressors.

Negative Health Outcomes Influenced by Family Dynamics

Dysfunctional family dynamics have the opposite effect on the same health outcomes, leading to negative consequences and the development of health conditions. Additionally, ACEs play a role in poor resilience and coping, which can lead to negative health factors and disease. Unhealthy family dynamics can lead to health disorders such as the following:

- depression
- anxiety
- atherosclerosis
- cancer
- diabetes
- asthma
- ulcers
- addiction

For nurses, recognizing dysfunctional family patterns is the first step in helping families create better relationships and coping skills and decreasing the frequency of avoidable ACEs. Nurses can be alert for the following:

- signs of violence, abuse, or neglect (physical or emotional)
- substance use problems
- mental health disorders (diagnosed or undiagnosed)
- family structure instability (separation, incarceration)
- family financial insecurity (housing and food insecurity)

Poor Sleep Quality

While sleep loss may result from specific sleep disorders, emotional stress associated with negative family dynamics can also significantly affect sleep. Poor sleep duration and quality are linked with a variety of negative health outcomes and disease conditions. Specifically, cumulative sleep loss is associated with health conditions, including hypertension, diabetes, obesity, depression, heart attack, and stroke.

Nurses can help promote better sleep for families by addressing the factors related to financial concerns, illnesses, and relationship strain, and connecting families with social workers. Nurses can address dysfunctional family patterns by promoting mental health care, encouraging socioemotional coping techniques, and referring families to trained counselors. In addition, nurses can offer all families tips for improving sleep, such as the following:

- limiting screen time, especially before bed
- providing security within the home
- providing a quiet sleep environment
- limiting consumption of digital violence
- providing healthy meals and limiting sugar and caffeine
- promoting sleep hygiene and sleep/wake routines

Handling Stressors and Developing Coping Mechanisms

Family stressors are multifactorial. Some internal family factors, including adverse childhood experiences (ACEs), may trigger a stress response. External factors can increase the stress level for the family as a whole and subsequently for individual family members. Children exposed to high stress levels and ACEs during childhood develop many lasting consequences that can affect future relationships, job performance, learning ability, and social interactions throughout life. Family interactions affect stress levels on a continuum from high-level support to severe dysfunctional stress. Stress has emotional, physical, and psychological effects that can be long-lasting. External stressors, such as illness, sudden financial strain, job loss, and death can all change family dynamics.

In families with healthy coping and high support levels, individuals will better cope and experience fewer symptoms of stress (Table 37.4). In families with poor coping skills, the effects of stress can lead to physical and mental disorders. Stress may impair communication, leading to fighting, arguments, and fatigue. For children, this may create confusion about family relationships and a sense of insecurity. This can develop even in families with strong relationships and can be harmful in families with already high stress levels.

Nurses can help families cope with stress, particularly in dealing with illness, death, or family structure changes, by encouraging family members to do the following:

- Discuss their emotions.
- Set individual and family boundaries.
- Work together.
- Listen carefully for solutions.

- Focus on healthy habits.

Nurses' communication skills will be one of the best assets in managing families with high stress levels and poor coping skills. Nurses can model effective communication, including active listening and respect.

Positive Coping Skills	Negative Coping Skills
• Talking • Seeking help from healthcare providers or counselors • Addressing shame response • Mindfulness • Confronting the issue • Physical exercise • Engaging in enjoyable activities • Discovering and avoid triggers	• Dysfunctional communication • Lack of communication • Isolation • Avoidance • Jumping to conclusions • Substance abuse • Relationship sabotage • Dopamine seeking (e.g., excessive gambling, videogaming, social media consumption, or risky behavior) • Excessive worrying

TABLE 37.4 Coping Skills

Nurses can focus on helping families find coping strategies that fit their family dynamics. Some families will prefer meaning-focused coping, which uncovers what a family problem means and how to address the associated feelings of distress (Algorani & Gupta, 2023). Some families will focus on the problem and finding a solution, while others will be drawn to minimizing negative emotions and creating a safe and positive environment (Algorani & Gupta, 2023). In addition, families and individuals may seek an external social support system to help cope with emotional stress. A combination of these strategies is also common and beneficial.

Adverse Childhood Experiences

Some families struggle with high stress levels due to financial, socioeconomic, and interpersonal relationships. In more extreme cases, individuals experience **adverse childhood experiences (ACE)**, negative experiences in childhood that affect long-term physical and emotional health. Some ACEs are related to family social interactions, and others are external events shaping family member interactions. ACEs are common and have varying degrees of effect on individuals based on how the family responds to the events. ACEs include the following (Wang, 2021):

- parental death
- parental mental illness
- financial hardship
- food insecurity
- housing insecurity
- physical violence
- sexual violence
- emotional violence
- community violence

Because ACEs elicit high-level stress responses, they are associated with similar disease risk as the stress from other triggers. High-level ACEs and childhood trauma have the potential to be perceived intergenerationally. One of the most important parts of breaking this cycle is recognizing, acknowledging, and addressing the ACE and its long-lasting emotional effects. Nurses can focus on encouraging adults to address childhood ACEs through appropriate psychiatric evaluation, counseling, and interventions to break the cycle (Panisch et al., 2020).

Increased Risk of Addiction

Addiction is also strongly associated with strained family dynamics. This is especially true for families in which addiction is prominent and many individuals struggle with addiction. Strong family connections can help individuals with addiction develop better coping skills. Relationships among family members affect an individual's ability to maintain abstinence and retain confidence in their ability to achieve and maintain abstinence while in recovery (Ram et al., 2016). Mental health disorders can increase the prevalence of substance use disorders. Mental health

disorders, such as anxiety and depression, when associated with ACE or dysfunctional family relationships, can lead to poor coping mechanisms, including substance misuse.

Increased Risk for Aggression

Like addiction, aggression and violence can perpetuate intergenerationally within a family and often are correlated. Aggression may develop into physical violence or emotional violence, which is harmful to all family members involved. One study showed that repeated daily negative family interactions may be more strongly associated with long-term anxiety and depression than ACEs in which the individual was victimized (Morelli et al., 2023). This study also found that the dysregulation of one family member, whether a child or a parent, and the subsequent impaired communication and relational disruptions can affect all family members long-term. Aggression and violence risk is increased by intergenerational family violence and aggression, genetic risk, high stress levels, and harsh parenting styles. Conversely, adaptive family coping, including a sense of love and warmth, structure, and a shared experience, is associated with less aggression and violence.

Effects on Cardiovascular Health

Individual family members tend to develop common habits, both positive and negative. Common health factors affected by family habits include cardiovascular and metabolic health. In addition, lifestyle factors and habits can also increase individual risk for certain types of cancers and gastrointestinal disorders (Salzmann et al., 2022).

Increased stress and dysfunctional family dynamics are associated with atherosclerosis and plaque build-up that is directly related to cardiovascular disease risk (Salzmann et al., 2022). Risks include coronary artery disease (CAD), stroke, and myocardial infarction (MI). ACEs are associated with negative family relationships and subsequently with cardiovascular disease in adulthood (AHA, 2024). One study suggests that over time negative family interactions during youth are associated with an increase in cardiovascular health risk as an adult (Chai & Almeida, 2023). Family habits that negatively affect cardiovascular health may include poor dietary and nutrition choices and lack of physical activity, while positive habits include engagement in joyful activity and shared hobbies. Nurses can address these issues at the family level by focusing interventions on improving diet, weight management, and increasing overall physical activity (Vedanthan et al., 2016).

Shared family health behaviors predict cardiovascular health and, specifically, hypertension (HTN) risk. Studies confirm that lifestyle factors, such as diet, exercise frequency, and sleep behaviors are associated with HTN risk (Gunn & Eberhardt, 2019). As discussed, family interaction and shared habits affect sleep habits and quality, which in turn affect the risk for HTN. Hypertension itself is a risk factor for progressive and severe cardiovascular disease states, including stroke, heart failure, and MI. In addition to family-behavior risk, HTN risk may also be inherited. This further increases the individual risk of developing HTN.

In caring for individuals with cardiovascular disease and HTN, nurses can focus on modifiable lifestyle changes and changes in shared family habits. Nurses can also recognize the presence of familial risk factors and discuss the importance of reducing these risks with healthy choices in sleep hygiene, dietary decisions, limiting nicotine and alcohol, and improving exercise frequency.

CLINICAL JUDGMENT MEASUREMENT MODEL

Hypertension

Recognize clues: The nurse is caring for a 57-year-old male in a primary care clinic. The patient is attempting to renew his commercial driver's license medical certificate. The nurse notes a blood pressure of 162/94 using an automatic cuff. The patient's BMI is 29.

Analyze clues: The nurse waits 10 minutes and rechecks the patient's blood pressure using a manual cuff. At this time, the blood pressure is 145/92. The nurse asks about family history and lifestyle factors and identifies the following risk factors:

- father had MI at age 60
- consumes of three to four alcoholic drinks per day
- smokes ¼ pack per day
- is "too busy" to exercise

Generate solutions: The nurse alerts the healthcare provider of the elevated blood pressure and gathers materials to reinforce the teaching about high blood pressure.

Take action: The nurse offers a discussion and handouts related to hypertension risk and lifestyle factors that influence this risk. The nurse also discusses findings with the healthcare provider so that medical interventions can be offered.

Effects on Metabolic Health

As with HTN, the risk for obesity is strongly correlated with family dynamics, shared family behaviors, and family genetic history. The World Health Organization (WHO) classified obesity as a distinct disease state based on an increased body mass and excessive fat deposits (WHO, 2024). Obesity and overweight are widely prevalent worldwide, and the percentage of adults with a higher weight and obesity is shockingly high at 43 percent and 16 percent, respectively (WHO, 2024). Recent studies show that obesity remains on the rise, particularly in children and adolescents. Drivers of obesity within the body are complex and determined by endocrine system function. Many factors play a role in obesity, though, including psychological factors, genetics, psychosocial factors, and economic factors (Wang et al., 2022). Family sedentary lifestyles, financial hardship and poverty, and unhealthy food choices are directly related to the incidence of childhood obesity (Wang et al., 2022). Other factors that predict higher obesity rates are parental depression and authoritarian, permissive, and uninvolved parenting styles. Unmodifiable family factors that affect obesity risk include ethnicity and family history of metabolic disorders such as PCOS, thyroid disorders, and type 2 diabetes.

Obesity is a complex disorder that is associated with an increased risk for many other diseases, including cancers, cardiovascular disease, HTN, diabetes, digestive disorders, lung disease, depression, and anxiety (WHO, 2024). Many of these disease states have a reciprocal correlation with obesity, both resulting from and potentiating factors that increase obesity. Nurses can focus on various family-level interventions to help improve individual and family choices and behaviors to reduce these risks.

Effects of Illness on Family Dynamics

Acute and chronic illness is hugely impactful on the lives of individuals and how they interact in the community and within their families. In families with positive and stable interpersonal interactions, illness can create a crisis that creates a disequilibrium in the family dynamics. For families that struggle with negative or dysfunctional baseline dynamics, illness can cause a complete breakdown in family functioning. Conversely, illness may unexpectedly create a sense of closeness and support for struggling families. The most important aspect of family dynamics in the face of illness is coping strategies and the strength of relationships. In addition, the type of illness, duration of illness, severity, financial stability, and cultural aspects will also determine the long-term family outcomes.

Lifestyle Alterations

In responding to a new or ongoing illness, families must adapt by changing lifestyles and behaviors. This will depend on whether the disease is acute or chronic and whether it is stable or progressive. The family response also depends on whether the disease results in cognitive or physical impairments. Families will create changes based on the needs of the sick individual. Depending on illness, family changes may significantly improve the outcomes for the individual. For example, family-wide dietary and nutrition changes will substantially reduce obesity and cardiovascular risk. For individuals with chronic or progressive diseases, long-term changes in physical activity, tobacco use, alcohol use, and diet often improve physical symptoms.

Role Modifications

In response to illness, particularly acute or progressive diseases, families often experience a change in roles. For example, in an older adult diagnosed with Alzheimer disease, moving into a child's home and experiencing more dependence changes the role of the parent to a more dependent role and the adult child to a caregiver role for the parent. This is sometimes referred to as role reversal. This can be a source of tension between family members, particularly as the older adult adapts to a change in independence and autonomy. Role modification also develops if a parent in a young family becomes ill; older children may need to take on caregiving roles for younger children.

In chronic illness, the parent or child may take on a sick role in which their social roles, such as work outside the home and family work, change. This affects the whole family and can lead to resentment if not openly addressed.

The family and individual can work together to address this sick role in a way that benefits all and improves the quality of life for the sick individual and the overall interactions and relationships between family members. Sibling roles also change during illness, but it is highly dependent on the type of illness. In long-term or progressive diseases, such as cancer, sibling relationships are affected by not only the outcome of the sibling's illness but also how parents and other family members react to the illness.

CULTURAL CONTEXT

Sick Role Behavior

Sick role behavior is a concept that explains the actions and expectations of individuals experiencing an illness or health crisis. This behavior influences the sick individual and their family. Illness role behavior is affected by ethnicity, culture, age, personality, social support, family dynamics, and type of illness. Depending on underlying family and societal values, these behaviors may be viewed as positive or negative. Changes in the expectations of the family and society of the sick person reinforce the sick role behaviors. Sick role behaviors may look like:

- health anxiety
- illness denial
- reduced expectations for the sick individual
- family tension related to focus on illness
- attention seeking by non-sick family members

Recognizing sick role behaviors is essential for the nurse in caring for the family. In particular, nurses must be alert for prolonged or disruptive behaviors that threaten the integrity of family relationships (Cosci & Guidi, 2021; APA, 2023).

Socioeconomic Adjustments

Illness can present a high financial burden, especially if it is a progressive or chronic illness. Medical treatments and procedures pose a substantial economic burden. In addition, patients experiencing disease and family members providing care, particularly for children, may lose work hours, resulting in additional financial strain. Changes in the frequency of social interactions, work hours, and community support may change over the course of an illness. Families may struggle with coping, grief, and fear, all of which can affect the way families interact within their social network and can directly affect economic input into the family.

Task and Function Changes

Family tasks and functions change depending on the lifecycle stage of the family at the time of illness, as well as which family member develops the illness. Caregiver tasks may increase depending on the type of illness. The function of the family may also change. In families with adult children, a sudden illness may create a resumption of direct parental caregiving activities. In families where a parent becomes ill, children may take on household duties, caregiving for the parent or younger siblings, and even begin working to help support the family financially. This may affect their ability to perform school functions, which can have long-term socioeconomic effects on the child and the family. Leisure time may also be affected, creating an environment of stress and fatigue that increases the risk for depression and anxiety.

37.4 The Nurse's Role in Caring for the Family Unit

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Describe actions involved in the nursing assessment of the family
- Understand different nursing interventions to promote family health
- Verbalize how the nurse collaborates with interprofessional teams

The nurse's role in caring for the family unit begins with a comprehensive family assessment, including therapeutic conversation techniques. An overview of family functioning also includes assessing individual roles within the family. Understanding the family values and behaviors allows the nurse to recognize specific needs and customize care plans for the family. Nurses will collaborate with other medical and social work professionals to create family care

plans.

Nursing Assessment of the Family

The nursing assessment of the family involves direct assessment of an individual and their family members. This adds a further dimension to the nursing assessment by evaluating the individual through the lens of family interaction. This includes observing interactions between family members and between the family and other individuals, such as healthcare providers, friends, or community members. For nurses, keeping in mind the elements of therapeutic conversation will improve their ability to understand family dynamics. A detailed assessment of the individual and family helps the nurse uncover risk factors that may play a role in health and illness.

Observation

Observation is an ongoing assessment tool that is paramount for nurses. In caring for families, nurses will be alert to positive interpersonal and negative interactions among family members. Nurses will use their observation skills to identify the most prominent support persons and identify cultural values within the family that can affect healthcare access, compliance, and recovery and outcomes. Nurses can observe individuals interacting in person and notice how patients discuss their families. In cases of family dysfunction, the nurse must remain alert for any signs of abuse, neglect, or emotional trauma. Nurses who care for families on multiple occasions or repeatedly over a long duration can develop relationships with patients, allowing them to notice subtle changes within the family that may give clues to illness.

Therapeutic Communication

Therapeutic communication is crucial in all nurse-patient interactions (Table 37.5). In caring for families, nurses must maintain respect for family values and culture. Nurses can recognize verbal and nonverbal cues from family members. When families struggle with illness or health crises, keeping communication to the point may help them retain needed information and process it as a group. Families need time to discuss options, clarify plans, and create a shared experience around the health crisis. Nurses can use techniques in family discussions, such as beginning with broad topics and moving to more specific intervention and treatment discussions. Nurses should consider differing views and values within the family when discussing treatment options. The nurse should also consider the privacy of the patient. In most cases, the patient must request that a family member be present during an assessment or discussion about their health care. This includes telephone discussion and electronic communication methods. The nurse must be able to explain healthcare privacy rules to families clearly. This will vary depending on the age of the patient, child versus adult. This ensures that patients understand their privacy is respected and that family members understand their roles and rights with regard to family member health information.

Therapeutic Techniques	Definition	Example
Acceptance	Acceptance acknowledges a patient's emotions or message and affirms they have been heard. Patients who feel their nurses are listening to them and taking them seriously are more likely to be receptive to care.	Patient: "I hate taking all this medicine. It makes me feel numb." Nurse (making eye contact): "Yes, I understand."
Clarification	Clarification asks the family member to further define what they are communicating. It helps nurses ensure they understand what is actually being said and can help patients process their ideas more thoroughly.	Mother: "I feel useless to my child and my family." Nurse: "I'm not sure I understand what you mean by useless. Can you give an example of a time you felt useless?"

TABLE 37.5 Therapeutic Communication Techniques for Families

Therapeutic Techniques	Definition	Example
Focusing	Focusing on a specific statement made by a patient that seems particularly important prompts them to discuss it further. Patients don't always have an objective perspective on their situation or past experiences, but as impartial observers, nurses can more easily pick out important topics on which to focus.	Patient: "I grew up with five brothers and sisters. We didn't have much money, so my mom was always working and never home. We had to fend for ourselves, and there was never any food in the house." Nurse: "It sounds as if you experienced some stressful conditions growing up."
Giving recognition	Giving recognition acknowledges and validates the family's positive health behaviors. Recognition acknowledges behavior and highlights it without giving an overt compliment.	Nurse: "It sounds like you've been enjoying your time exercising together."
Open-ended questions/ offering general leads	Therapeutic communication is most effective when patients direct the flow of conversation and decide what to talk about. Giving families a broad opening such as "What would you like to talk about?" is a good way to encourage clients to discuss what's on their mind.	Father: "I'm unsure of what to do next." Nurse: "Tell me more about your concerns."
Reflecting	Reflecting asks patients what they think they should do, encourages them to be accountable for their own actions, and helps them come up with solutions.	Daughter: "Do you think I should encourage my mom to accept this new dementia treatment?" Nurse: "What do you think the pros and cons are for the new treatment plan?"
Making observations	Observations about the appearance, demeanor, or behavior of patients can help draw attention to areas that might pose a problem for them.	Nurse: "You look tired today." Mother: "I haven't been getting much sleep lately because of how worried I am about my daughter's health."
Offering hope	Offering hope encourages a family to persevere and be resilient.	Nurse: "I remember you shared with me how well your family adapted when your niece was diagnosed with diabetes."

TABLE 37.5 Therapeutic Communication Techniques for Families

Identify Risk Factors

Nurses who focus on therapeutic communication and have excellent listening skills will find that they can identify patient and family risk factors in nearly every patient interaction. The things that patients say, their visible interactions with others, and their subtle nonverbal communication will give clues to risk factors. In addition, identifying important aspects of the family history is crucial. Creating a sense of rapport with patients allows nurses to obtain detailed information in a safe atmosphere.

Disease risk factors are present within the family history. The nurse asks questions that elicit information about the

health status, age, and, if applicable, cause of death and age at the time of death of blood relatives (parents, grandparents, siblings, children, nieces, nephews). Questions to ask include the following:

- Tell me about the health of your blood relatives. Do they have any chronic or acute diseases (e.g., cardiac, cancer, mental health issues)?
- Have any of your blood relatives died? If so, do you know the cause of death? And at what age did they die?

Nurses also want to assess the health status of non-blood relatives and individuals that clients have had close encounters with or live with; this can be an essential part of the assessment, particularly in terms of **communicable diseases**. Questions to ask include the following:

- Tell me about the health status of those you live with. Has anyone been sick recently? If so, do you know the cause? What symptoms have they had?
- Have you been around anyone else who was sick recently (e.g., at work, at school, or in a location that involved a close encounter, such as a plane or an office)?

Nursing Interventions to Promote Family Health

Nurses must focus on individual patients and their families in providing care for families. Because many health habits, outcomes, risks, and diseases develop in the context of family habits and behavior, focusing on treating the whole family will improve outcomes for all. In addition, specific family interventions ensure that individuals with illness can recover within a supportive and healthful family environment. Researchers explain that health begins at home and that the family directly influences individuals' health (Hanson et al., 2019). Nursing care for the family can focus on primary prevention and risk assessment, disease education, medication and treatment management, connections with community, and healthcare resources. In these interactions with families, nurses can consider aspects including the following (Hanson et al., 2019):

- family engagement: relationship patterns that support individual well-being
- family responsibility: caretaking ability and advocacy for family members
- family stability: the resilience of the family structure in the face of health crisis
- family diversity: varying family values and roles that affect health outcomes

Nurses can apply these considerations to various areas that are important in providing family-based interventions for patients.

Education

Family-directed education may be focused on individual patient education that incorporates the family as a support system. In caring for families, nurses encounter situations where education for the whole family is important, such as in family planning, prenatal care, and well-child care. These educational opportunities may arise at dedicated visits but may also be incorporated into other patient interactions as appropriate. One primary goal of family education is reducing health risks and preventing disease. Risk reduction considers family genetic history, disease history, lifestyle, cultural beliefs, and values about health care. Nurses need to assess each family member's engagement and understand each family member's responsibility within the group. Having an idea of family stability will also guide education, as a high-risk family may require more focus on high-risk concerns. In contrast, a stable family may be focused more on preventative measures to improve and maintain health. Understanding family diversity also helps the nurse personalize the education plan, create interventions that are appropriate and culturally sensitive, and offer treatments that have a high likelihood of follow-through.

Screening for Risk

A significant part of nursing care of the family relates to developing a plan for determining family risk. This may include risk factors that run in the family, such as cancers, cardiovascular disease, and diabetes. Nurses must discuss health risks with individual family members and enlist the help of other family members as necessary in putting together a family ecomap or genogram that may uncover genetic risk factors. Nurses can encourage families to take responsibility for minimizing risks, particularly modifiable ones. This will often include behavior modifications to improve lifestyle, which may consist of parents taking responsibility to avoid tobacco use, limit alcohol use, exercise with their children, and provide and role-model healthy eating habits. Other screening for families includes prenatal screening, autism screening, and genetic testing in families in which certain cancer types are prevalent. Nurses must be aware of family cultural values and beliefs about health care when recommending

screening. Nurses can also be advocates for routine screening for depression and mental health disorders that are known to cause ripple effects through the family structure if not diagnosed and treated. A variety of screening tools are available to assess individuals for depression, for example. Nurses can also use family assessment tools to identify families at risk for addiction concerns, violence, economic strain, or abuse. Understanding these psychosocial risks within a family helps the nurse create a treatment plan that includes appropriate community resources.

Pharmacological Management

While pharmacological management is primarily focused on individual care, it becomes the family's responsibility in situations where family members are also caregivers, such as with children. Other conditions in which a family member may be responsible for medication management include the following:

- developmental delays
- dementia
- debilitating mental health disorders
- physical disabilities

Nurses evaluate the need for family interventions regarding medication education, administration, and long-term management. Family stability and engagement are important in medication management because creating an appropriate medication regimen is crucial for adherence as well as the efficacy of medication therapy. The teach-back method is the gold standard for education about health-related treatments and medications. This is particularly important for medications administered through injection, such as insulin. This method can be adapted to include family members engaged in medication administration and assistance. Consulting family members is also an effective way to help determine the response and effectiveness of the medication, particularly in cases of mental health disorders and behavioral health disorders.

Referrals to Community Resources

Nurses will find themselves frequently making referrals to various community resources for families. These resources may be directly related to a chronic or acute health conditions. In addition, community resources are available to help families obtain and maintain basic needs. These resources may include the following:

- housing assistance
- state Medicaid services
- nutrition services
- family planning clinics
- mental health support services
- autism support services
- home safety services
- educational services, such as HeadStart
- substance use support services
- youth homes
- disease-specific support groups
- WIC (Women, Infants, and Children)

LIFE-STAGE CONTEXT

Autism Screening

Autism spectrum disorder (ASD) is a prevalent and fast-growing bio-neurological developmental disability. It is most often diagnosed in childhood, although adolescent and adult diagnoses of less severe cases may occur. Nurses can be alert for specific risk factors that may indicate that screening for ASD is warranted. These risk factors include the following:

- genetic disorders
- sensory integration dysfunction
- sleep disorders

- autoimmune disorders
- speech delay
- anxiety disorders
- behavior concerns
- feeding problems

Nurses must focus on identifying risk factors and referring for screening. Screening is essential, as early diagnosis and intervention are the keys to limiting the impact of ASD on the individual and the family (National Autism Association, n.d.).

Collaborate with Interprofessional Team

Nurses collaborate with professionals from many other specialties when caring for families. Depending on the type of needs of the family or individual within the family, the nurse may collaborate with the following:

- physical therapists
- occupational therapists
- speech therapists
- mental health professionals
- spiritual advisors

Therapists

Family therapists and counselors will focus primarily on the health of the family as a whole and interactions among the family members. Nurses may refer patients and families to therapists to address long-standing issues and develop coping strategies for acute health crises. In addition, mental health concerns within the family, past trauma, death and grief, divorce, stress, sudden change, and other dysfunctional dynamics are triggers for therapy referral. Common types of counseling for families include the following (Cleveland Clinic, 2022):

- **functional family therapy**: focuses on behavior, communication, and parenting skills
- **relationship counseling**: focuses on communication and problem-solving for couples in a long-term or romantic relationship
- **strategic family therapy**: focuses on making structural and behavioral changes to improve the overall family environment
- **structural family therapy**: focuses on interpersonal relationships among family members
- **systemic family therapy**: focuses on family issues within the context of their wider system, such as cultural, religious, and socioeconomic status

Nurses must understand that families are dynamic, and therapy may be needed for a long or short duration depending on the individual family dynamics.

Social Workers

Nurses and social workers share similar goals for family care and work hand-in-hand to create healthy environments for families. While nurses make referrals to medical specialists, ancillary specialists, and disease-specific specialists, social workers help address the many environmental constraints and burdens on a family. Nurses ensure that families in health crises can access social work services to help address these and other logistical concerns. Some social workers are trained in mental health counseling as well. They help families navigate complicated family and healthcare dynamics. They also apply their knowledge of family dynamics to create individualized care plans that address factors such as the following (Tadic et al., 2020):

- prevention and health promotion
- home visits
- lifestyle counselling
- financial advocacy
- housing assistance
- substance use recovery
- employment guidance
- interpersonal relationship

- communication counseling
- crisis intervention

Summary

37.1 Family Concepts

Defining family is a complex and culturally sensitive topic. For legal and census purposes, families may be described as individuals living together or as related individuals with shared financial resources. For nurses, maintaining respect and consideration for how individuals define their families is the most critical aspect of caring for families. Nurses must understand the interactions among family members and how the family interacts with their environment and community. In particular, understanding the health beliefs of the family will contribute to better care planning. Considering family habits and lifestyle factors is as important in promoting family health as heredity, familial illness, and genetic factors.

Understanding family assessment tools is important in providing comprehensive care. These assessment tools help nurses apply family dynamics theories to identify strengths and weaknesses and provide guidance for families struggling with health crises. Applying the Calgary Family Assessment Model and the Friedman Family Assessment Model helps nurses understand family structure, interactions, and communication patterns. Understanding theories of family function, including systems theories, Bowen's theory, and communication theory, helps nurses effectively interact with families. Nurses can better identify family needs and develop the therapeutic relationship by understanding how family dynamics affect family-member interactions.

37.2 Family Framework

Understanding the various structures of families is important for nurses in creating inclusive and patient-centered care. This includes an understanding of the concept of family types, roles within the family, gender roles, and sibling birth order. Families are defined in many ways and differently throughout the life stage of the family. Family composition is dynamic and changes over the life cycle of the family. Nurses must consider the importance of families in socialization, relationship building, and emotional security. Nurses can understand family structures and relationships through genograms and ecomaps. Ecomaps help nurses to visualize how family members interact with each other as well as how families interact within their community.

The function of the family is multifaceted and includes factors such as economics, physical environment, reproduction, and socialization. The family life cycle is a set of stages that a family progresses through based on births, deaths, and family member age. The family life cycle progresses as the family members age and move through various life stages. The family life cycle stages include independence, coupling, parenting, launching, and the senior years. These life stages affect both individual and family health.

37.3 Family Dynamics Influence on Health Outcomes

Family dynamics can have positive and negative effects on health outcomes. Relationship patterns, coping skills, finances, and communication techniques affect how families experience wellness and illness. Positive family dynamics have a beneficial effect on sleep patterns, resilience, and health promotion. Healthy family habits reduce risk factors for disease. Conversely, dysfunctional family interactions negatively impact health outcomes and are correlated with specific health disorders. Negative family interactions increase the risk for cardiovascular disease, metabolic diseases, mental health disorders, and substance use disorders. Nurses must focus interventions on encouraging healthy habits, altering family habits contributing to disease states, and educating families about disease risk.

Acute and chronic illness is hugely impactful on the lives of individuals and how they interact in the community and within their families. The most important aspect of family dynamics in the face of illness is coping strategies and the strength of relationships.

37.4 The Nurse's Role in Caring for the Family Unit

To understand the family unit, nurses must perform a comprehensive assessment that involves observing family interactions, identifying individual roles, and recognizing communication patterns. By recognizing the role of the family in an individual's health care, nurses can effectively include the family to promote healing. Nurses use therapeutic communication techniques to elicit information and address the family's concerns. These communication techniques may include acceptance, recognition, open-ended questions, and hope.

Nurses use observation and interviews to identify risk factors guiding necessary interventions. Primary nursing interventions for families include education, risk screening, pharmacological management, and referrals to communication resources. Nurses also collaborate with other healthcare and ancillary specialties to care for families. This teamwork approach promotes a holistic view of the family and ensures that the family's health, social, and emotional needs are addressed.

Key Terms

accuracy a person's perception of the other person's evaluation reflects the other person's actual perception
adverse childhood experiences (ACE) negative experiences in childhood that affect long-term physical and emotional health
agreement the individuals have the same perception
boundaries distinct emotional, psychological, or physical separateness between individuals, roles, and subsystems in the family
co-orientation when two or more people experience the same physical or emotional input and develop a corresponding perception or response
coalition a situation in which family members team up against another family member
conformity communication patterns in which family members are expected to follow hierarchical family values
congruence an individual's perception and the other person's perception are similar
conversation communication patterns in which family members are encouraged to evaluate topics independently and discuss them with the family
ecomap a diagram that show connections between families or family members and their social environment
extended family a family group typically made up of at least three generations: grandparents, parents, and children
external family structure how a family interacts with their community and extended family
familial disorder disease that tends to present among individuals from the same family line
family socially recognized group, usually joined by blood, marriage, cohabitation, or adoption, that forms an emotional connection and serves as an economic unit of society
family composition the design of a family structure, including relationships between members
family life cycle the set of predictable steps and patterns families experience over time
family of orientation the family into which a person is born
family of procreation the family that is formed with the intention of bearing children
family structure the internal and external makeup of families
functional family therapy focuses on behavior, communication, and parenting skills
genetic disorder caused by a change in a genetic DNA sequence or a mutation in a gene or multiple genes
genogram written or digital diagram showing relationships between family members
hereditary when a disorder is passed naturally from parent to offspring through their genes
relationship counseling focuses on communication and problem-solving for couples in a long-term or romantic relationship
strategic family therapy focuses on making structural and behavioral changes to improve the overall family environment
structural family therapy focuses on interpersonal relationships among family members
systemic family therapy focuses on family issues within the context of their wider system, such as cultural, religious, and socioeconomic status

Assessments

Review Questions

1. What family-based factor contributes to emotional protection for adolescents?
   a. two working parents
   b. the presence of siblings
   c. a sense of belonging
   d. higher family income

2. What definition of family is used by the U.S. Census Bureau?

a. a socially recognized group (usually joined by blood, marriage, cohabitation, or adoption)
b. a socially recognized group that serves as an economic unit of society
c. a group in which people come together to form a strong primary group connection
d. a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together

3. In what way do family assessment models help nurses care for patients?
a. Provide specific interview questions to ask all patients.
b. Guide nurses in understanding family structure and dynamics.
c. Help nurses classify families as functional or dysfunctional.
d. Teach nurses how to provide effective family counseling services.

4. According to the CFAM, what are the key ingredients in a 15-minute interview?
a. manners, therapeutic communication, spiritual evaluation, risk assessment
b. therapeutic communication, spiritual evaluation, genograms, acknowledgment of strengths
c. spiritual evaluation, genograms, manners, risk assessment
d. genograms, therapeutic communication, manners, therapeutic questions

5. According to the family communication patterns theory, what is it called when two or more people experience the same physical or emotional input and develop a corresponding perception or response?
a. accuracy
b. co-orientation
c. congruence
d. consensual

6. Which factors affect family composition?
a. birth, death, career
b. birth, geographic location, divorce
c. birth, death, emotional dysfunction
d. birth, death, marriage, divorce

7. Genograms are useful for nurses to visualize which aspects of the family?
a. future careers
b. relationships with spiritual advisors
c. interactions with healthcare providers
d. sibling birth order and relationships

8. What are two primary functions of the family?
a. procreation and socialization
b. marriage and procreation
c. financial security and marriage
d. procreation and sibling relationships

9. A patient's family member asks how they will be billed for the medical services related to her sister's diabetes treatment. She mentions that they already have a lot of medical bills. The nurse knows that this family is among the _____ of families in the United States with medical debt.
a. 25 percent
b. 72 percent
c. 53 percent
d. 41 percent

10. A nurse is caring for Janice Bell, a 47-year-old female recovering from appendectomy surgery. As she is getting ready for discharge, Janice expresses concern for how behind she feels going home; her daughter is

about to graduate from high school and go to college, her other three children are all in high school, and her father-in-law recently moved into their attached apartment. The nurse understands that Janice's family is experiencing what stages of the family life cycle.

a. coupling, independence, senior years
b. independence, launching adult children, coupling
c. parenting, launching adult children, senior years
d. launching adult children, parenting, coupling

11. A mother of a 4-week-old infant presents for her postpartum follow-up. The nurse knows that this patient may be experiencing negative health effects, such as fatigue and altered mood related to what?

a. sleep loss related to infant awakening
b. poor coping techniques
c. high sugar intake
d. high caffeine intake

12. In which ways can families improve outcomes for individuals with addiction?

a. creating a sense of victimization
b. promoting supportive relationships and acceptance
c. requiring in-patient treatment
d. focusing only on physical health concerns

13. What modifiable family-related factors contribute to diabetes risk?

a. obesity
b. sedentary lifestyle
c. healthy diet
d. smoking

14. During an initial patient assessment, the nurse notices that the patient does not make eye contact while talking. The nurse is using what assessment technique?

a. therapeutic communication
b. observation
c. identifying risk factors
d. recognizing nonverbal cues

15. During an interview, a patient states that she "feels useless ever since she was diagnosed with MS." The nurse responds, "I'm not sure I understand; can you give me an example of a time you felt useless?" What therapeutic communication technique is the nurse using?

a. clarification
b. focusing
c. acceptance
d. reflecting

16. In understanding nursing interventions related to at-home medication administration for an 85-year-old patient with dementia and their family, the nurse must consider what factor?

a. family engagement
b. geographic location
c. genetic history
d. dietary choices

17. A nurse is caring for the family of a 7-year-old child with leukemia. The mom has left her job to care for the child, and the father is taking on additional shifts to maintain their financial status. They will need to travel 500 miles multiple times over the next year for treatment. The nurse recognizes the need for a referral to what type of professional?

a. physical therapist
b. mental health professional
c. social worker
d. spiritual advisor

Check Your Understanding Questions

1. Describe the difference between hereditary, genetic, and familial disorders. Provide an example of each.
2. Describe the concept of empty nest syndrome and how it affects individuals differently.
3. List risk factors for obesity based on whether they are modifiable or nonmodifiable.

Reflection Questions

1. Consider a situation in which a family has recently experienced the birth of a child with Down syndrome. In what ways may this affect the family?
2. Explain the importance of using manners during a patient or family interview.
3. Discuss how the nurse would apply the Bowen family systems theory to a patient recovering from a head injury.
4. Explain the concept of social role theory.
5. Explain how nurses and social workers work together to create individualized care plans for patients and families.

What Should the Nurse Do?

1. Ms. Kesterson is a 55-year-old female who is new to the clinic. She was recently diagnosed with type 2 diabetes two months ago before she moved to live with her sister. She arrives at her scheduled appointment with her sister. Her sister is very vocal during the visit and continually interrupts Ms. Kesterson. Using key ingredients from the CFAM 15-minute interview, what actions can the nurse take during the initial interview?
2. A nurse is assigned to discharge a patient after a heart attack. Just before discharge, the patient's son arrives with a to-go order of the patient's favorite cheeseburger and fries. How should the nurse address this issue?
3. A nurse is caring for Roger Chin, a 37-year-old male whose mother was recently diagnosed with early-onset dementia. Roger states that he and his mother struggle to communicate even on good days. His mother often seems angry and withdrawn when Roger cares for her. Roger reports feeling depressed and angry at times as well because he feels like he now must take on the caregiver role. The nurse recognizes that Roger and his mother are experiencing what effect on family dynamics related to the mother's illness?
   a. lifestyle alteration
   b. socioeconomic adjustment
   c. role modification
   d. crisis response
4. The nurse is caring for a patient with a recent hip pinning after a fall. The nurse discusses the home care plan with the patient and her daughter. The daughter mentions that she lives 50 miles away and will only visit on weekends. The nurse recognizes the need for which collaborative referrals?

Competency-Based Assessments

1. Create a video illustrating the use of elements from the 15-minute interview's key ingredients.
2. Create an ecomap based on one of your family members or classmates.
3. Think about a friend or family member and write a list of positive and negative coping skills you have witnessed during times of stress.
4. Consider a family with a 10-year-old child recently diagnosed with type 1 diabetes. Develop an educational

pamphlet that describes a medication management plan that includes responsible family members.

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CHAPTER 38
Growth and Development

FIGURE 38.1 Care across the life span means serving patients at each age and stage of life. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

CHAPTER OUTLINE

38.1 Stages of Growth and Development
38.2 Specific Developmental Theories
38.3 Application to Care

INTRODUCTION Imagine you are a nurse working in a busy emergency department on a Thursday evening. There is a 6-month-old infant with a severe cough in Room 1, a 20-year-old with a leg laceration in Room 2, and a 65-year-old patient who fell and broke their arm in Room 3. As the nurse, you know each patient will need specific care—not only for their admitting diagnosis but for their specific age and stage of development as well. The 6-month-old will not be able to verbally communicate, and the caregivers may need additional support. The 20-year-old, though categorized as a young adult, may still have developmental traits more characteristic of the adolescent stage. The 65-year-old is likely to have additional medical concerns and a longer medical history to consider.

This chapter outlines the foundations of developmental stages as well as care considerations at each stage. Developmental theories are discussed to build the underpinnings of understanding for care and communication with patients as they grow and develop. Only by mastering this information can nurses provide appropriate, quality care to every patient they see.

38.1 Stages of Growth and Development

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify normal developmental changes from newborn to older adult
- Discuss different types of play and its importance in development

Though growth and development are often used interchangeably, they serve different purposes for the patient. The term **growth** refers to an increase in physical size. In the case of a patient, this includes the physical size of the whole body and of all corresponding body parts. The term **development**, on the other hand, is the process by which a person gains various skills and functions (Table 38.1). Most development occurs during the infancy and childhood periods (Figure 38.2); however, development can occur throughout the life span. The typical pattern of growth and functional motor development is **cephalocaudal**, meaning from head (cephalic region) to toe (caudal region). The cephalocaudal pattern reflects the idea that growth and development often follow a sequential order, with skills and abilities emerging in a top-down manner. While this pattern is a general trend, it's important to note that individuals may vary in their developmental trajectories, and some may demonstrate unique patterns or exceptions to this overall sequence.

Growth	Development
Height	Cognitive development
Weight	Psychosocial development
Head circumference	Personality
Skeletal growth	Communication
Bone density	Sexuality
Muscle mass	Motor

TABLE 38.1 Growth versus Development

FIGURE 38.2 Children experience rapid physical changes through infancy and early childhood. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Growth and Development over Time

Cognitive, psychosocial, personality, communication, sexuality, and motor function development can impact many aspects of nursing care. Thus, nurses working in any arena of health care must have a baseline understanding of how patients grow, develop, and mature over time (Centers for Disease Control and Prevention (CDC), 2022). The timeline of achievement for these milestones can be assessed in a multitude of ways. Formal tools, such as the Prescreening Developmental Questionnaire (PDQ-II) and the Denver II Developmental Screening Test (DDST-II), may be used to assess development of **fine motor skills** (precise movements of small muscle groups), **gross motor skills** (coordination of large muscle groups), personal-social skills, and language skills in young children. The PDQ-II is a prescreening tool used to determine if additional screening is needed with the DDST-II. Using the PDQ-II as a

prescreening tool assists healthcare providers in efficiently identifying children who require further assessment. In addition to such tools, nurses can determine where a patient stands developmentally through a health history, interview, or physical assessment.

LINK TO LEARNING

Explore how to administer the Denver II Developmental Screening Test (https://openstax.org/r/77DenvIIDevTest).

This section covers the highlights of growth and development for the following age groups: newborn, infant, toddler, preschool, school age, adolescent, young adult, adult, and older adult. Detailed information about these populations is covered in later chapters: Chapter 39 Conception Through Adolescence, Chapter 40 Young and Middle-Aged Adults, and Chapter 41 Older Adults. For additional information regarding nutrition considerations for these populations, see Chapter 21 Nutrition.

LINK TO LEARNING

Watch this video overviewing stages of developmental milestones (https://openstax.org/r/77StgDevMilstns) for pediatric patients.

Newborn (0–28 Days of Life)

The newborn (**neonatal**) stage, spanning from birth to 28 days of life, is characterized by rapid growth and development. On average, a newborn weighs about 7 lbs (3.4 kg) and measures 20 in (50 cm) in length, with a head circumference of 14 in (35 cm). Within the first seven days of life, newborns typically lose about 10 percent of their body weight due to the elimination of excess fluid and nutrients acquired from their mothers. As they begin feeding on breast milk or formula, they gradually regain fluid volume and exhibit an average weight gain of 1 oz (30 g) per day, typically reaching their birth weight again within ten to fourteen days.

Infant (0–12 Months)

The **infancy** stage is the period from birth to 12 months of age. Weight, length, and head circumference all increase rapidly during this period. Infants may grow up to 1 in (2.5 cm) per month and gain 5 to 7 oz (142–198 g) per week for the first six months. Between 6 to 12 months, they can grow 3/8 in (1 cm) a month and gain 3 to 5 oz (85–142 g) a week. The average infant is expected to double their weight by about 5 months of age and triple their birth weight by about 12 months of age.

During the infancy stage, many vital organs undergo significant and integral changes. Externally, infants are also achieving great milestones. By the end of their first year, children typically will have begun interacting with other people and toys as well as babbling, sitting, crawling, standing, starting to walk, and saying a few words; teeth eruption will also have begun.

PATIENT CONVERSATIONS

Addressing Caregiver Concern

Scenario: Anne is the mother of Tatum, a 7-month-old child. She has one other child, who is now 4 years old and at home with her husband. Jeff is the nurse currently working in the pediatrician's office. Jeff just completed a head-to-toe assessment on Tatum.

Nurse: Tatum looks great and is a very happy baby. Did you have any questions or concerns about his growth and development?

Patient's caregiver: I have been a little concerned about him struggling to pick up his snacks with his fingers. He has been able to hold rattles and toys for a while now, but he still can't use his fingers to pick up bits of cereal, for example. I don't remember how old my other son was when he could easily pick up his snacks by himself. Should I

be concerned?

Nurse: I understand why you might have a concern regarding specific milestones. There are many gross and fine motor skills that develop during this first year of life. Babies are able to hold a toy or rattle placed in their hand around 1 month of age. This typically involves using their entire hand to grasp the object. Children develop a different grasp, called a pincer grasp, later. A pincer grasp involves using the thumb and index finger—that is, their forefinger or pointer finger—to pick up small objects. This skill usually develops around 9 months of age. It is what Tatum will use when he starts picking up his cereal. It is an important fine motor skill, as it sets the foundation for other skills such as holding a pencil, zipping a zipper, or buttoning a button. Though there are outlined ages for all milestones, it is important to remember that each child will develop on their own timeline. Your two children may reach their milestones at slightly different times.

Patient's caregiver: All right, but when should I become concerned if Tatum continues to struggle?

Nurse: We can provide you with some resources for general milestone landmarks to take home with you. We also keep an eye out at all medical appointments to ensure Tatum is on track overall. If you're still concerned at Tatum's next appointment, we can discuss it further.

Toddler (1–3 Years)

During the **toddler** stage—between 1 and 3 years of age—there are dramatic changes in cognitive, physical, emotional, motor, and language skills. Though their rate of growth and food intake slows, toddlers typically quadruple their birth weight during this period. Additionally, by 2 years of age, children are approximately one-half of their adult height. Toddlers are known for "toddling" around as they practice walking and finding their voice with short sentences and a growing vocabulary. They are also known for exploring their independence and pushing boundaries. Major gross motor milestones obtained during this stage include walking independently, climbing stairs, and standing on tiptoes. Many fine motor skills are also developed during this stage; they include using their index fingers to point, removing their socks or shoes, building towers of blocks at various stages, and undressing.

Preschool (3–5 Years)

A **preschooler** is a child from 3 to 5 years of age. They increase their social activities and contacts during this stage—especially if placed in a more formal educational or care setting for at least part of their week. Motor skills improve as they learn from other children and mimic their behaviors, both negatively and positively. Dramatic play, utilizing their vast imagination, is key during this stage to foster growth and learning.

Middle Childhood (6–11 Years)

The **middle childhood** is the period between 6 and 11 years of age. It is the bridge between preschool and adolescence, when children start to refine their previously accomplished motor skills. They also focus more on activities they enjoy and excel at, such as art, writing, physical games, theater, music, cooking, and science activities. Play becomes more formalized and rules become a large part of how these children operate. Though peers become more important during this stage, the family unit is still a crucial influence on development.

LINK TO LEARNING

The Centers for Disease Control and Prevention (CDC) is an excellent resource for healthcare providers, as well as caregivers, to gather reputable information about growth and development (https://openstax.org/r/77GrowDevelInfo) in children.

Adolescent (12–17 Years)

The **adolescence** is the period from 12 to 17 years of age; it marks the end of childhood and the transition to adulthood. The onset of **puberty** begins a time of significant growth and developmental changes, as sex organs and sex characteristics develop and individuals become capable of reproduction. The average age for onset of puberty in people assigned female at birth is 11 years old; in people assigned male at birth, it is 12 years old. However, pending any additional complications, it is acceptable for children to begin puberty between 8 and 13 years of age. As adolescents become less reliant on caregivers for transportation and funding, peers become an increasingly important influence. Activities become more dangerous with access to motor vehicles and ancillary activities

stemming from independence.

LINK TO LEARNING

As the largest professional association of pediatricians in the United States, the American Academy of Pediatrics website (https://openstax.org/r/77AmAcPeWebsite) is a credible source for parents and providers to learn more about growth, development, and care of pediatric patients.

Young Adult (18–35 Years)

Adulthood ranges from 18 years of age until death, with various subsets of categories in between. A person who is 18 to 35 years of age is considered a **young adults**. These individuals typically spend a lot of time and energy figuring out who they are and what they want for the future. This path often includes a choice between higher education or moving directly into the workforce. Most decisions during this time frame set the stage for later years of adulthood.

Adult (36–64 Years)

A person within the ages of 36 to 64 years is generally considered an **adult**. During their adult years, individuals continually make decisions regarding life partnerships, child rearing, and the maintenance of friendships. In addition, adults make career decisions, experience periods of work productivity, and manage life circumstances that have significant impacts on their future. During this stage of development, individuals typically seek to create or nurture things through such activities as volunteering, mentoring, or raising children.

Older Adult (65 Years and Older)

A person who is 65 years and older is considered an older adult. Developmental stages in the older adult population range greatly from those who are still working and conducting their day-to-day lives, as they did in their adult stage, to those who are focusing on retirement or choosing a path for the remainder of their life. As we age, there may be more health concerns; comorbidities may develop as the body responds to physical aging and lifestyle changes. It is important to remember that age does not determine the level of health, activity, cognitive ability, or happiness of a person.

Types of Play

In addition to understanding the changes patients face over their life span, nurses must be able to identify how patients encounter these changes and assist in this process. Generally, nurses can perform a head-to-toe assessment to assess their patient for the most needed information; however, when working with children, watching how they play can provide a significant amount of information about their developmental state. **Play** is considered the work of children. It is how children from a young age learn to conduct themselves in relation to objects and other people in the world. Play reinforces growth and development for a child regarding physical, emotional, social, cognitive, and moral development. Additionally, play can help children use and refine reasoning skills, enhance creativity, and work to form conclusions. As patients age, play looks different and serves a different purpose with each stage.

While the foundations of play are developed during childhood, play is still present in adults (American Academy of Pediatrics, 2022). Some adults consider competitive activities such as board games, trivia, or playing sports to be play. Others “play” by completing tasks such as writing a story or solving a puzzle or a math-based challenge. In adults, the intent and mental attitude toward an activity is important when determining play behaviors. For example, if an adult is completing a puzzle and feels content, challenged, and interested in the activity, it would be considered play. If the adult is completing a puzzle and is feeling angry, disengaged, or burdened, then it is not play. Adults can partake in all types of play present in childhood.

There are several observable types of play, which generally appear in a particular developmental order. They include solitary, parallel, associative, cooperative, and onlooker/observer play. Though play may look different at each stage, play helps children physically navigate the world, practice patience, cooperation, teamwork, critical thinking, and problem-solving. Play can help all people, no matter the age, reduce stress, boost creativity, build friendships, and build resilience.

Solitary Play

The act of independent play is called **solitary play**, shown in Figure 38.3. During this type of play, participants choose to play with an object that no one else is using at the time. This type of play is most common in infancy as children are learning how to navigate their world.

FIGURE 38.3 The act of play is how children in early stages of development learn about the world. (credit: modification of work "baby playing" by Philippe Put/Flickr, CC BY 2.0)

Parallel Play

When participants play side by side but not with one another, this is known as **parallel play**. Participants may use the same type of object for this play, but they do not have cooperative involvement with those around them. This type of play typically occurs in the toddler stage, but it can be seen in any age group. Two children in a preschool setting, for instance, may engage in parallel play when they are both playing with toy blocks near each other but not directly interacting with each other. While each child is absorbed in constructing their own structures, there is minimal communication or collaboration between them.

Associative Play

During **associative play**, participants involve others around them to engage in the activity. Though the participants have a similar goal during the play period, this type of play lacks formal organization. There are no set rules or true structure, but there is involvement across participants. This type of play is most common in the preschool stage, but it can also be seen at the tail end of the toddler stage.

Cooperative Play

Cooperative play has the most formal structure of all types of play. During **cooperative play**, participants establish rules—which may include restrictions on participation—and all participants are expected to follow those rules. Typically, one or more leaders are chosen. Team sports is one of the earliest forms of cooperative play, which is most common in middle childhood but can be seen starting in the late preschool stage.

Onlooker/Observer Play

Those participating in **onlooker play** watch others perform a task or engage in some form of play. There is no effort put forth by the onlookers to engage in the activity. Onlooker play occurs most often in the toddler stage but can take place at any age.

38.2 Specific Developmental Theories

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Discuss the importance of theories of development for care across the life span
- Identify multiple theories of development used in health care

Theories of development help provide a framework for healthcare providers to understand how patients develop over their life span. These theories can help healthcare providers identify ways to help patients move through the

growth and development process by noting prevention and intervention techniques. Commonly accepted theories of development include Erik Erikson's theory of psychosocial development, Jean Piaget's theory of cognitive development, Lawrence Kohlberg's theory of moral development, and Sigmund Freud's theory of psychosexual development.

LINK TO LEARNING

Watch this video of developmental theories (https://openstax.org/r/77DevTheoryVid) to test your knowledge of the subject.

Importance of Theories of Development

While growth and development are not linear, theories of development can help nurses care for and interact with patients based on their developmental needs. Additionally, these theories help healthcare providers predict possible future behaviors to guide education and anticipatory guidance for caregivers. Most importantly, when healthcare providers understand and appreciate theories of development, they have a common toolbox for assessing and interacting with patients through the life span.

Theory of Psychosocial Development—Erik Erikson

Erik Erikson's **theory of psychosocial development** states that an individual's personality develops in a predetermined order through a series of stages. Erikson believed there are two outcomes at each stage: successful completion or unsuccessful completion. Successful completion leads to advancing to the next stage in a healthy and holistic manner. Unsuccessful completion of a stage can lead to unsuccessful completion of subsequent stages and an unhealthy self-attitude (Erikson, 1963). These stages can be reviewed in Table 38.2.

Developmental Stage	Erikson's Developmental Stage	Age Range per Developmental Stage
Infant	Trust vs. mistrust	0–1.5 years
Toddler	Autonomy vs. shame and doubt	1.5–3 years
Preschool	Initiative vs. guilt	3–5 years
Middle childhood	Industry vs. inferiority	5–12 years
Adolescent	Identity vs. role confusion	12–18 years
Young adult	Intimacy vs. isolation	18–40 years
Adult	Generativity vs. stagnation	40–65 years
Older adult	Ego integrity vs. despair	65+ years

TABLE 38.2 Erik Erikson's Theory of Psychosocial Development

Trust vs. Mistrust

Trust vs. mistrust is the first stage in Erikson's theory of psychosocial development; it begins at birth and continues until about 18 months of age. During this stage, the child is learning about the world and the uncertainties within it. As they need support for all basic needs, they rely on their primary caregiver for safety and consistent care. If the child receives reliable and predictable care from their caregiver(s), they will feel safe and develop a sense of trust. This sense of trust will then carry on to other relationships, so that the child may feel secure even if they are in an intimidating or challenging situation. If children do not receive consistent care, however, they will develop a sense of mistrust and apprehension. This ultimately leads to a lack of confidence in the people and world around them as well as their possible influence on events in the world. Thus, the child may feel a lack of confidence in their ability to

influence events within the world and may approach the world with uneasiness.

REAL RN STORIES

Understanding Developmental Theories

Name: Naomi, RN
Clinical setting: Pediatric unit
Years in practice: 2.5
Facility location: Downtown acute care hospital, Ohio

I remember my first experience seeing firsthand how developmental theories can help you understand short- and long-term complications for patients. I was a relatively new nurse on a pediatric unit. We had a variety of patients, but this particular night a 6-month-old baby was diagnosed with nonorganic failure to thrive due to neglect and abuse. I remember this baby had a history of upward of twelve to eighteen hours without being fed, was not held or comforted by caregivers, and was physically and emotionally depleted based on age. I was trying to hold the child to provide comfort, but it only seemed to make the child more irritated. I was discouraged, wondering what I was doing wrong. The psychiatrist was making rounds and noticed my frustration while completing her own assessment of the child. She explained the child had unmet needs up to this point, demonstrating a failure to successfully move through Erikson's stage of trust versus mistrust. She informed me the child is not comforted as most children are because he had been left alone without comfort. She also explained to me how this lack of care might impact the child later in life, inhibiting him from successfully moving through different developmental phases outlined in Erikson's theory. She explained how this child would need to be monitored for years to come to ensure proper physical, mental, and emotional care. While it was difficult to hear, this helped me understand how developmental theories can help nurses and the rest of the healthcare team think about comprehensive and holistic care for their patients.

Autonomy vs. Shame and Doubt

The second stage of Erikson's theory is autonomy vs. shame and doubt. This phase occurs between 18 months and 3 years of age. A foundational keystone of this stage is the child developing a sense of control over physical skills as they gain a sense of independence. If independence is fostered, the child will become more confident and secure in their ability to make decisions and survive in the world. In contrast, if children are overly controlled or criticized, they will develop feelings of inadequacy. This may lead to a lack of self-esteem and an unhealthy dependence on others. It is important for caregivers to strike a balance between encouraging children to complete age-appropriate tasks by themselves—such as getting dressed and taking dishes to the sink—while providing constructive guidance that sets up children to succeed.

Initiative vs. Guilt

Initiative vs. guilt is the third stage, encompassing children between 3 and 5 years of age. During this stage, children assert themselves through social interactions and play activities. The foundation of this stage is the significant interactions that children have with one another. If they are given the opportunity to plan activities and make up games, children will feel secure in their ability to lead and harness a feeling of initiative. If this initiative is suppressed or criticized by caregivers, children will form a sense of guilt. This sense of guilt can inhibit creativity and cause the child to resist interacting with others. One way caregivers can support this stage is to validate the many questions that children tend to ask. If caregivers treat these inquiries as trivial or an annoyance, the child may develop a sense of guilt or embarrassment.

Industry vs. Inferiority

The fourth stage, industry vs. inferiority, encompasses children from 5 to 12 years of age. During this stage, peers play increasingly significant roles in a child's self-esteem. As tasks such as reading, writing, and mathematics become more prominent, children feel they need to gain approval by demonstrating these competencies. As they experience success, they develop a sense of pride and feel accepted and valued in society. If children are encouraged for their initiative during this stage, they will feel industrious and gain confidence to complete more difficult tasks. However, if children cannot develop the specific skills they feel that society values, they may develop a sense of inferiority.

Identity vs. Role Confusion

The fifth stage of Erikson's theory, identity vs. role confusion, takes place between about 12 and 18 years of age. The foundation of this stage is an individual's search for a sense of personal identity, particularly in two realms: sexual and occupational. Individuals who successfully move through this stage are able to identify the transformations that occur during this time and work through these changes to ultimately feel comfortable and stand firm in their identity. This allows patients to accept themselves and others, even if there are major differences between them. Unsuccessful completion of this stage can lead to role confusion, meaning that the individual is not certain about their place in society. In an effort to avoid role confusion, patients may experiment with different lifestyles. It is important to note that if people in this process are pressured into a certain lifestyle, they may develop a sense of anger and rebellion, ultimately leading to unhappiness.

Intimacy vs. Isolation

The sixth stage, intimacy vs. isolation, occurs between 18 and 40 years of age. Erikson believed people in this stage focus on forming intimate and loving relationships with other people; they explore relationships with the goal of making a long-term commitment to someone other than their family unit members. Successful completion of this stage leads to happy relationships centered around commitment and safety. Unsuccessful completion of this stage, driven by a fear of intimacy and commitment, can lead to loneliness and isolation.

Generativity vs. Stagnation

The second-to-last stage in Erikson's theory is generativity vs. stagnation, which takes place between approximately 40 and 65 years of age. In this context, **generativity** is when an individual makes a mark on the world with something that will outlast their own life. Common examples include having mentees, raising children, making an impact at work, and being involved in community organizations. Individuals who experience generative success typically feel useful and accomplished. In contrast, failure to make a lasting mark can lead to stagnation, leaving the individual feeling unproductive and disconnected.

Ego Integrity vs. Despair

The eighth and final stage in Erikson's theory is ego integrity vs. despair, which occurs from about 65 years of age until death. Patients in this stage spend time reflecting on their lives. Patients who find value in their experiences and accomplishments will successfully move through this stage and attain wisdom. They achieve a sense of completeness and integrity. Conversely, those who reflect back on their life and deem it unproductive or regret missed opportunities may end up with a sense of despair.

Theory of Cognitive Development—Jean Piaget

Jean Piaget's **theory of cognitive development** claims that individuals pass through four stages from birth to adolescence, noting changes in the person's ability to use logic and scientific theory along the way. As shown in Figure 38.4, these stages are sensorimotor thinking, preoperational thinking, concrete operational thinking, and formal operational thinking, sequentially. Piaget's theory assumes that every person experiences all four stages in the same order, that a cognitive transformation happens within each stage, and that each latter stage incorporates the previous stage (Malik & Marwaha, 2023).

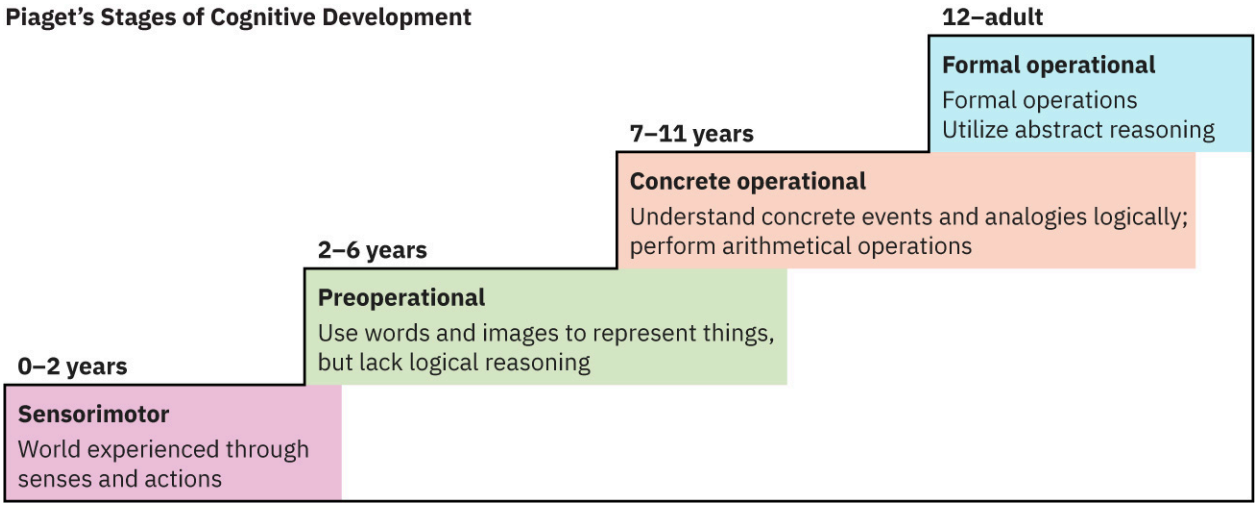

FIGURE 38.4 Jean Piaget's theory of cognitive development can be represented by a staircase that represents the cognitive growth gained while moving through each stage. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Sensorimotor Thinking (0–2 Years)

During this stage, children use their senses and physical actions—such as crawling, visual tracking, balancing, and coordinating their body in relation to their surroundings—to learn about the world and their place within it. The landmark achievement during this stage is **object permanence**, which is the understanding that an object still exists even after it is hidden or moved from sight. This corresponds to the knowledge that the world exists separately from the child themselves. Once this landmark has been accomplished, the child moves on to the next stage.

Preoperational Thinking (2–6 years)

Thinking in this stage is influenced by how things appear versus how they really are. Children in this stage are able to mentally represent objects in multiple ways, though their thought processes remain incomplete and, at times, disorganized. A landmark of thinking during this stage is **dramatic play**, in which participants use their imagination to take on roles and characters as they interact with their surroundings. A common example is when children take on the role of a doctor and provide medical care to dolls or other people; they may use plastic sets of look-alike medical equipment, or they may imaginatively repurpose everyday objects. Though thinking during this stage tends to be illogical and lacking in reason, it is an important step on the way to higher levels of cognition.

Concrete Operational Thinking (7–11 Years)

During this stage, children can solve problems more systematically than in previous stages, though their thinking remains focused on concrete objects and events rather than abstractions or hypotheticals. One major concept gained during this stage is **reversibility**, or the ability to understand a process and the steps of a process in any order. (Children in previous stages may be able to recite the steps of an experiment, for example, but only in the original order.) Another skill acquired during this stage is **decentering**, or the ability to investigate more than one problem at a time. This helps children to understand that others may have a different point of view. Children also acquire the concept of **conservation**: they understand that something may change its size or appearance without also changing its quantity. For example, children in the previous stage may understand that two cubes of clay that weigh the same contain the same amount of clay; however, children capable of concrete operational thinking understand that the two lumps remain equal even after one is reshaped into a pyramid.

Formal Operational Thinking (12 Years and Older)

People who successfully pass through the fourth and final stage of Piaget's theory achieve the skill of hypothetical thinking, logical thought, deductive reasoning, and systemic planning. They are able to think logically and reasonably at more advanced levels about abstract objects and events in addition to tangible ones. Additionally, inferential reasoning is a key distinction of this stage. It is also understood with this theory that some people may never achieve or use formal operational thinking in their everyday lives. As an example, according to Piaget's theory, hypothetical thinking is necessary to scientific problem-solving. Many people do not deal with scientific problems or the scientific problem-solving process during the course of their lives; thus, it is understood that those people may never achieve or use formal operational thinking demonstrated through scientific problem-solving. Similarly, there is

a subset of people who use it only in certain areas in which they are most comfortable and familiar such as tasks at home, but not at work, or vice versa. Piaget believed that though adolescents who are able to achieve formal operational thinking may have more success in some facets of academia, it is not mandatory for students to achieve educational success.

LINK TO LEARNING

Jean Piaget's theory of cognitive development (https://openstax.org/r/77CognDevTheory) is further explained in this video.

Theory of Moral Development—Lawrence Kohlberg

Lawrence Kohlberg's **theory of moral development** builds upon Piaget's theory of cognitive development. The foundational understanding of Kohlberg's theory is that moral reasoning develops in stages (Kohlberg, 1981). Specifically, it identifies six stages distributed across three levels (Figure 38.5).

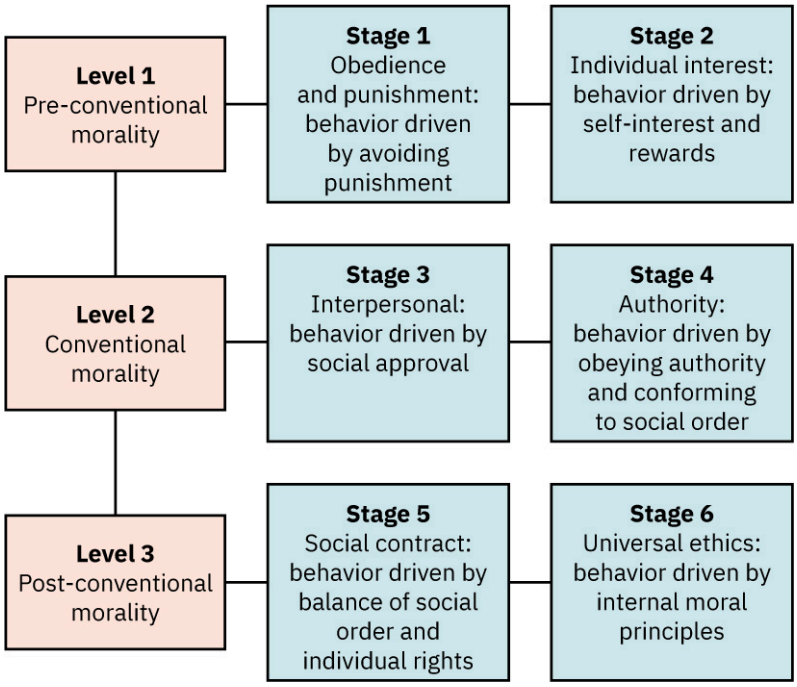

FIGURE 38.5 Kohlberg identified three levels of moral reasoning, each of which is associated with increasingly complex stages of moral development. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Level 1: Pre-Conventional Morality (0–9 Years)

This level is considered the premoral level. Thinking is primarily egocentric, and behavior is driven by the desire to gain pleasure and avoid punishment or other types of pain. A hallmark of premoral thinking is that actions that lead to rewards must be good, while actions that lead to punishment must be bad.

Stage 1: Obedience and Punishment

In the first stage of Level 1 a child's response to a moral dilemma is that of obedience to rules and authority. In this stage, a child must follow the rules or they will be punished. The physical or tangible consequence of punishment is the driver of decision-making. Children believe if they are not being punished, they are good, and if they are punished, they must be bad or wrong.

Stage 2: Individual Interest

Progressing from the first stage, in this stage children comprehend that authority figures may have different views of what is "right and wrong," and that definitions may change depending on individual viewpoints. Thus, they realize the moral decisions they have learned may be influenced by personal needs while still considering the needs of others. This may guide children in this stage to believe it is okay to do something wrong if it will benefit them overall.

Children move away from thinking that punishment is the sign of what is "right and wrong," while still knowing it is something to be avoided.

Level 2: Conventional Morality (10–15 Years)

Moral reasoning at this level is based on one's own interpretation and internalization of societal expectations. Individuals make decisions based on how they may impact interpersonal relationships in addition to their own self-interest. At this level, moral standards begin to be internalized.

Stage 3: Interpersonal

During this stage, the individual wants to gain and maintain the approval of those in their immediate group. Children want to be considered "good" or "nice," and they equate these titles with having positive motives, showing mutual concern for others, and fostering friendly relationships based on loyalty, trust, and respect.

Stage 4: Authority

Within this fourth stage, individuals expand their decision-making process beyond their relationships with close acquaintances. Now, they also take societal norms and perspectives into consideration. The foundation of decision-making is no longer avoiding punishment or gaining rewards. Instead, individuals focus on doing their duty and maintaining social order.

Level 3: Post-Conventional Morality (16+ Years)

In this third level, individuals define their own moral principles and value as they begin to create an image of how an ideal society could look. Balance is found between basic rights, societal expectations, and obligations. It is important to note that Kohlberg believed only 10 to 15 percent of people reach this stage of moral development.

Stage 5: Social Contract

Those within this stage still find value in and follow society's law and norms, but they can also imagine possible changes to make society better. Individuals in this stage believe that subgroups can have different values, but everyone should be able to agree on foundational principles. Morality of this stage is the basis for the United States Constitution. The belief in this stage is that laws are flexible in order to accommodate new and changing circumstances.

Stage 6: Universal Ethics

The sixth and final stage of Kohlberg's theory bases moral reasoning upon universal ethical considerations coupled with abstract thinking. A sense of justice is a guide within this stage, even if this conflicts with societal rules and laws; thus, there is an understanding that there are higher laws that go above and beyond laws that are imposed socially. Individuals in this phase believe all humans have value and thus are willing to accept the consequences of going against social norms if it is the "right" thing to do.

Theory of Psychosexual Development—Sigmund Freud

Many people consider Sigmund Freud to have been one the most influential minds of the twentieth century; however, he may also be one of the most controversial, and many people today discount his ideas. Freud had a background in neurology, which was the foundation for his theories of personality and human development. Freud believed that the human mind has three sections: the unconscious, the preconscious, and the conscious (Lantz & Ray, 2022). As shown in Figure 38.6, these sections are often compared to the parts of an iceberg. According to Freud, the unconscious is like the part of an iceberg, well below the water's surface, that cannot be seen; the preconscious is the part just at and directly below the water's surface; and the conscious is the part of the iceberg, above the water, that can be seen.

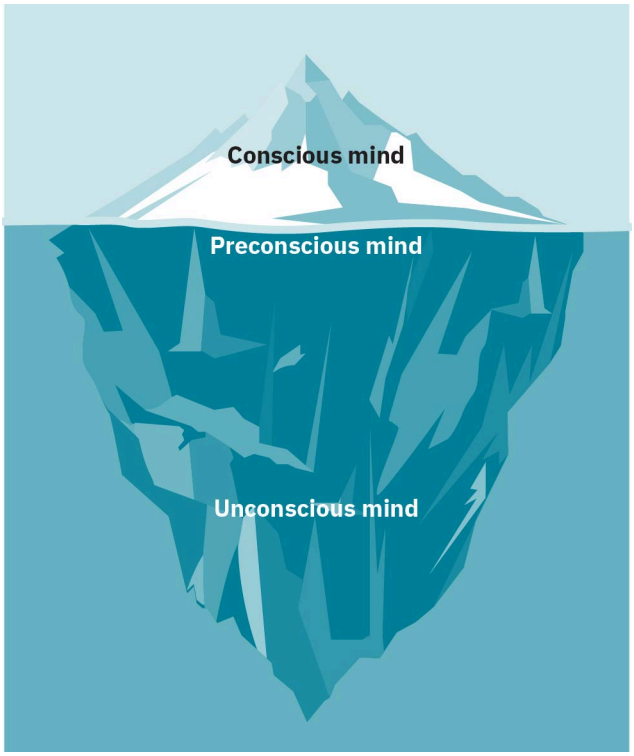

FIGURE 38.6 Sigmund Freud believed the mind is like an iceberg, with three sections: unconscious, preconscious, and conscious. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Freud also believed the mind has three fundamental structures: the id, the ego, and the superego. He claimed the **id** is the primitive or unconscious part of the mind, which seeks gratifications through physical needs; the superego is responsible for upholding social norms and making moral decisions; and the **ego** is the regulator between the id and the superego. From these beliefs, Freud established his psychosexual theory of development for children. His theory has five stages, each of which focuses on a different physical center of pleasure: oral, anal, phallic, latency, and genital.

Freud is often criticized by those in the medical community, who fault him for basing his theory of development solely on biological or physical determinants while ignoring social, cultural, and experiential factors. Furthermore, many believe this theory is not applicable to different cultures and communities.

Oral (Birth–1 Year)

During this stage, babies gain pleasure through their mouth: for example, by sucking, biting, and tasting. If needs are unmet during this phase, Freud believed a child's development could be hindered. For example, the child might compensate by developing oral fixation behaviors such as gum chewing, candy eating, smoking, and nail biting.

Anal (1–3 Years)

This phase happens as children typically begin the process of potty training and learn to control defecation. Therefore, the anal region is the focus of pleasure during this stage. Freud believed children who experience conflicts during this stage will develop either anal-retentive or anal-explosive tendencies as they move into adulthood. An anal-retentive personality is one that compulsively sees order and tidiness. An anal-expulsive personality is generally messy and lacks self-control.

Phallic (3–6 Years)

Genital organs become the focus of pleasure during this stage. Children become aware of the presence or absence of a penis in individual bodies, and they may have internal conflict with either side of awareness as they demonstrate an increased interest in their genitals and the genitals of the opposite sex. Pending their desire to adopt the characteristics of the same-sex parent, this may lead to internal struggle if they are not able to achieve these full characteristics. Freud believed by the end of this stage, children resolve this conflict by identifying with a caregiver of the same sex in order to gain acceptance.

Latency (6–12 Years)

During this stage, Freud believed that children repress their sexual focus and energy due to a dormant libido and channel it into other activities of development, such as hobbies, schoolwork, friendships, and social maturing, demonstrating an overall state of calmness. Children may focus their time on social or intellectual skills, such as hobbies, education, and friendship, versus a focus on romantic interests.

Genital (Puberty and Beyond)

During this last and final stage, Freud believed the sexual urges of adolescents re-emerge and are directed toward another person. This leads to solicitation and pursuit of intimate relationships. After sexual experimentation, this stage is considered resolved when someone is capable of having a mature and emotionally safe adult sexual relationship. Unresolved conflicts during this stage can lead to emotional issues, sexual dysfunction, and inability to form and sustain healthy relationships.

38.3 Application to Care

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Demonstrate appropriate application of multiple theories of development
- Discuss aspects of well care specific to different populations across the life span
- Discuss aspects of vaccination administration and post-assessment

To care for patients across the life span, nurses must have a baseline understanding of growth and development at each stage of life. Newborns through older adults, and each stage in between, all have a subset of needs and concerns. For example, communication and the spectrum of growth and development pose challenges unique to the pediatric population, while chronic diseases and comorbidities that come with an extended life span create another subset of complications in older adult patients.

Well Care across the Life Span

Well-visits and preventive care are crucial to the overall well-being of people on an individual and community level. Well-visits are more frequent in the younger years when developmental milestones are identified and reviewed. As will be discussed later in this section, a significant part of this preventive care is the process of immunization.

Well-Visit Schedule

While many patients find themselves visiting a healthcare provider only when they have an acute illness or problem, it is important for individuals to maintain regular well-visits with a focus on preventive care. Different from an appointment for a new issue, well-visits provide an opportunity for preventive care and screening to occur before issues arise. Well-visits allow communication between patient and provider and help the provider make a plan for the overall well-being of each patient.

LIFE-STAGE CONTEXT

Preventive Care

Due to the importance of preventive care, part of the Healthy People 2030 initiative from The U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion is a strong focus on preventive health (Office of Disease Prevention and Health Promotion, 2023). Their preventive care objectives for the general public include the following:

- increase the proportion of children who receive a developmental screening
- increase use of the oral healthcare system

Further objectives are identified by the following categories:

- adolescents
- cancer
- community

- diabetes
- health care access and quality
- health policy
- heart disease and stroke
- mental health and mental disorders
- oral conditions
- osteoporosis
- pregnancy and childbirth
- sensory or communication disorders
- sexually transmitted infections (Office of Disease Prevention and Health Promotion, 2023)

After 3 years of age, it is recommended for patients to have an annual well-visit. During these well-visits, multiple components should be reviewed, including vital signs and baseline laboratory tests; any medications the patient is taking should also be reviewed, and adjustments should be made as needed. Additionally, age- or health-related screenings such as mammograms, pap smears, colonoscopies, and vision screenings may either be ordered or referred out to a specialist for completion. Prior to age 3, there is a more frequent well-visit schedule for children:

- 1 week
- 1 month
- 2 months
- 4 months
- 6 months
- 9 months
- 12 months
- 15 months
- 18 months
- 24 months
- 30 months
- 3 years

This increased frequency for younger children is warranted due to the many physical, mental, and emotional changes during this time frame. After 3 years of age, a yearly well-visit is recommended pending any additional healthcare conditions.

LINK TO LEARNING

The American Academy of Pediatrics provides a schedule of well-visits (https://openstax.org/r/77WellVisiSched) that includes details for what should happen at each visit.

Early childhood is a crucial span of time to ensure proper growth and development. Well-visits are an optimal time for nurses and providers to deliver anticipatory guidance for caregivers. The anticipatory guidance involves proactively counseling caregivers regarding significant physical, psychological, emotional, and developmental changes their child will encounter in the future. This guidance is specifically tailored to the current age and stage of the patient as well as the stage they will encounter next. The nurse must also consider any communication barriers. Variations in language, cultural nuances, or varying levels of health literacy can act as barriers that may impact the comprehension of crucial information. Therefore, the nurse needs to approach anticipatory guidance with sensitivity, employing clear and simple language, utilizing visual aids when necessary, and ensuring caregivers fully grasp the information relevant to the child's physical, psychological, emotional, and developmental well-being.

CULTURAL CONTEXT

Communication Barriers

During their career, nurses are likely to encounter patients of all ages, stages, health levels, backgrounds, health literacy levels, and cultures. Though there are many factors to consider when interacting with and educating patients, one of the most foundational is language and communication. If there is a language or communication barrier between healthcare provider and patient or caregiver, everyone is likely to walk away from the care event confused and frustrated. Official translators must be used when there are any noted language barriers involving speaking, reading, or writing. Most healthcare systems have multiple forms of translators to ensure proper care of patients. This may be a physical person who is able to translate between languages, a phone call to a translator who can speak between languages, or a video call that allows the translator to view all participants while also translating. Depending on the size of the healthcare system and the urgency of a patient's needs, there is a time and place for each method, but one must be used if there is a discrepancy between languages. Nurses should not allow family members to translate even if able to understand and speak both languages, as it is impossible to ensure proper translation of all crucial information.

Atraumatic Care

No matter the population with which the nurse is working, atraumatic care should be practiced. The **atraumatic care** is care that strives to eliminate as much trauma as possible from the experience for the patient. This is important to help minimize the psychological impact that can arise from healthcare interventions.

LIFE-STAGE CONTEXT

Providing Comfort and Demonstrating Atraumatic Care

Based on their developmental age and stage, patients may find different experiences traumatic, and nurses may need to take different actions accordingly. For example, while performing an adult physical assessment, the nurse can verbally direct individuals as necessary to complete the exam. Adult patients typically understand why they must assume certain positions and remain still while the nurse uses a variety of instruments to check vital signs. Completing a similar task on a child—especially a young child who cannot understand what is happening—often proves a more challenging task. Because infants are soothed when held during times of distress, nurses can allow caregivers to hold a child during most of the physical exam; in addition to providing the least traumatic experience possible for the patient, the nurse is more likely to gather accurate information from a calm, cooperative child. If no caregiver is available, the nurse can simulate this experience by holding or soothing the child before, during, or after completion of a care task.

Atraumatic care may look different for older children. For example, pediatric settings often have a playroom or other dedicated space in which no medical care is completed. This provides a safe place for patients to play, learn, and relax. Similarly, difficult or painful procedures may take place in a separate room from those in which routine examinations are conducted. This helps patients to relax during examinations, as they perceive the space as a safer, more healing environment. If steadying a patient or part of the patient is needed to complete a procedure safely, a trained medical professional should be the one to complete this safety hold. This leaves caregivers or loved ones available afterward to help provide comfort. Additionally, when support staff who are trained to properly stabilize and assist in a procedure, it limits the risk to providers and patients. Utilizing interdisciplinary team members, such as a child life specialist, can also be of benefit when providing care.

Vaccination and Immunization

Though often used together, vaccination and immunization are not interchangeable terms. Vaccination is the act of presenting a vaccine to the body to elicit protection from a specific disease. **Immunization** is the method by which a person develops protection against a disease through vaccination. There are two main types of immunity, active and passive. Active immunity refers to immunity obtained from an individual's exposure to an antigen to which their own body then elicits an immune response to create antibodies. Vaccinations are an example of active immunity. On the

other hand, passive immunity refers to immunity that is obtained from antibodies created outside of the person and then introduced to the body. Breastfeeding is an example of passive immunity. Immunizations play a crucial role in creating **herd immunity**, which occurs when a significant portion of the population (the "herd") becomes immune to a disease. When this happens, the disease can no longer spread within the population and may vanish completely.

LINK TO LEARNING

The website for the CDC provides specific definitions for *vaccine*, *vaccination*, *immunity*, and *immunization* (https://openstax.org/r/77SpecDefsVacIm) to help provide clarity among these related terms.

The main function of the body's immune system is to distinguish "self" from "non-self." A toxin or foreign object the body determines to be a threat is called an antigen. Once the immune system identifies an antigen, it will elicit an immune response and work to eradicate it from the body, in the process creating antibodies. An antibody is a protective protein produced by the immune system to help fight invaders. By creating antibodies for a specific antigen, the immune system learns to recognize that antigen (or similar ones) moving forward and attack more efficiently. In essence, the immune system creates a blueprint for fighting off illness or disease more effectively if exposed in the future. This is how the process of immunization provides protection against specific diseases through vaccinations. A vaccination contains a weakened or inert form of a particular antigen—not enough to cause the disease itself, but sufficient to trigger the immune system to create antibodies, thus providing immunity for that disease.

There are multiple categories of vaccinations, with some more common than others. Categories of vaccinations currently used include inactivated, live-attenuated, messenger RNA (mRNA), toxoid viral vector, subunit, recombinant, polysaccharide, and conjugate vaccines (U.S. Department of Health and Human Services, 2022). Though obtaining vaccinations does require significant effort and time on the forefront, a fully immunized patient is protected from the physical, emotional, and financial risks of many dangerous infectious diseases.

LINK TO LEARNING

The CDC provides a schedule for childhood and adolescence vaccinations (https://openstax.org/r/77ChildVacSched), including a "catch-up" schedule for individuals who missed the recommended doses.

Pre-Vaccination Care

For patients to obtain the best results from a vaccination, healthcare providers must understand appropriate pre- and post-care guidelines and be able to educate patients and caregivers regarding these topics. First and foremost, consent must be obtained prior to any vaccination administration. Patients who are considered adults or emancipated may sign this consent themselves. Those who are considered minors (not emancipated) or who have designated another person to make their healthcare decisions must have a guardian or caregiver sign consent.

LINK TO LEARNING

The CDC provides a recommended adult immunization schedule (https://openstax.org/r/77AdultVacSched) for those aged 19 years and older.

The provider must give patients and caregivers a vaccination information sheet (VIS) containing all pertinent information regarding the vaccine's purpose as well as known side effects or adverse reactions the patient may have. The provider should also discuss allergies and contraindications with patients and caregivers and review the outlined vaccination schedule. Many children working their way through vaccinations may need a "catch-up" plan if they veer off schedule or need to adjust for other reasons. Patients who are acutely ill may not be in a stable condition to receive a vaccination, but those with a minor illness may still be able to obtain the vaccination. This should be discussed with the healthcare provider prior to administration.

LINK TO LEARNING

The CDC maintains current vaccination information sheets (https://openstax.org/r/77CurrentVISs) for all vaccines.

Barriers to Vaccination

There are many reasons patients may choose not to receive vaccinations and why caregivers may choose not to have their children receive vaccinations. It is the nurse's role to provide factual information regarding this topic and help eliminate barriers when possible. Some possible barriers that nurses can help patients overcome include the following:

- challenges with access or proximity to facility
- anticipated side effects of vaccine
- misunderstanding of normal immune response and adverse reaction or contraindication
- belief that vaccination is unnecessary because they or their child is not at risk
- belief that natural immunity, acquired by contracting the disease, is better
- scheduling challenges
- cost
- personal preferences
- religious beliefs
- distrust of the healthcare system

The first step in helping patients and caregivers is understanding their specific concerns or barriers. Nurses should provide information, resources, and support no matter what choice the patient ultimately makes. Though healthcare providers may have different opinions from those of their patients and families, it is not appropriate to place judgement or decrease care levels because of these differences.

One large effort to eliminate the cost limitation for families is the Vaccines for Children (VFC) program, a federally funded program implemented in 1994 in response to the measles epidemic of 1989–1991. VCF vaccines are provided free to people with low incomes or no insurance through private physicians who have registered with the program. Additionally, the Affordable Care Act of 2010 classifies immunizations approved by the Advisory Committee on Immunization Practices (ACIP) as preventive services and mandates new health plans to cover them without charging a co-payment, deductible, or coinsurance (Centers for Disease Control and Prevention (CDC), 2022). Individual states also have a variety of resources to help provide free or discounted vaccinations. In an effort to combat the barrier of multiple trips to a medical facility for separate injections, the use of FDA-approved, manufacturer-produced combination vaccines is encouraged when appropriate.

Vaccination Administration

Vaccinations are injected via intramuscular (IM), subcutaneous (SQ), or oral (PO) routes. Appropriate needle size and injection location are dictated by the type of vaccine and age and size of the patient (Immunize Action Coalition, 2020). For IM injections, the needle should be inserted at a 90-degree angle to the skin. Each muscle injected must have the capacity to hold the volume of the medication, an important factor in minimizing local reaction. The vastus lateralis (a thigh muscle) is the optimal location for children 12 months and younger due to its development and capacity. If the deltoid muscle is selected for children under 10 years of age, the needle size may need to be adjusted (Figure 38.7 Table 38.3) lists other appropriate sites for IM injections.

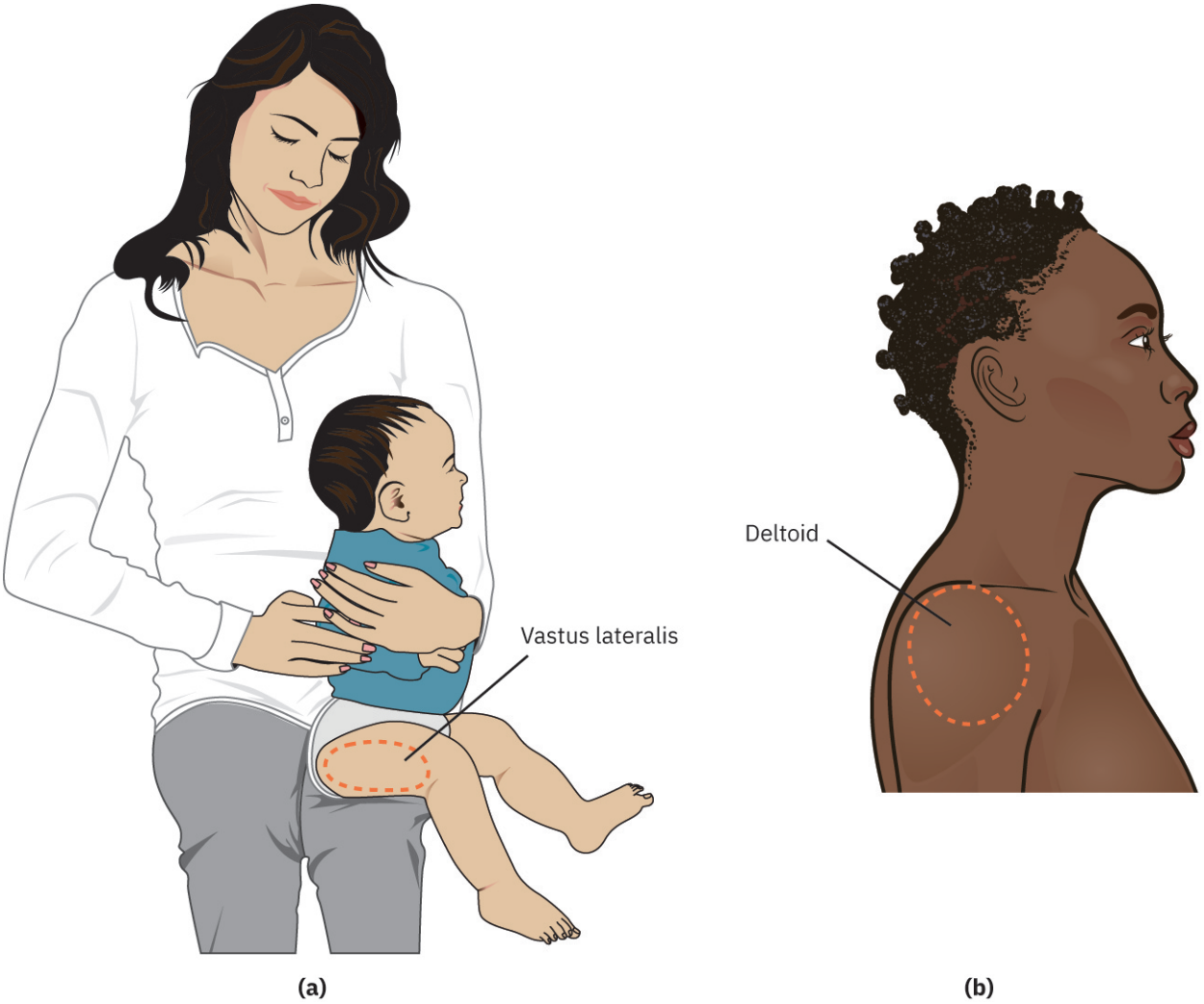

FIGURE 38.7 (a) The vastus lateralis is the preferred IM injection site for infants and toddlers aged 0 to 3 years. (b) The deltoid is the preferred IM injection site for those aged 3 and older. (attribution a and b: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Age	Injection Site	Needle Size
Newborn (0–28 days)	Anterolateral thigh muscle	5/8 inches (22–25 gauge)
Infant (1–12 months)	Anterolateral thigh muscle	1 inch (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle Alternate: Deltoid muscle (upper arm) if muscle mass is adequate	1–1 ¼ inches (22–25 gauge) 5/8–1 inch (22–25 gauge)

TABLE 38.3 **Intramuscular (IM) Needle Injection Administration**

Age	Injection Site	Needle Size
Children (3–10 years)	Deltoid muscle (upper arm) Alternate: Anterolateral thigh muscle	5/8–1 inch (22–25 gauge) 1–1 ¼ inches (22–25 gauge)
Children and adults (11 years and older)	Deltoid muscle (upper arm) Alternate: Anterolateral thigh muscle	5/8–1 inch (22–25 gauge) 1–1 ½ inches (22–25 gauge)

TABLE 38.3 Intramuscular (IM) Needle Injection Administration

Table 38.4 lists appropriate sites for SQ injections. For example, the most suitable SQ site in infants from birth to 12 months is the fatty tissue of the anterolateral thigh. The most suitable location for a SQ injection in those 12 months and older is the fatty tissue overlying the triceps. Needle insertion for SQ injections should be completed at a 45-degree angle.

Age	Injection Site	Needle Size
Birth to 12 months	Fatty tissue overlying the anterolateral thigh muscle	5/8 inches (23–25 gauge)
12 months and older	Fatty tissue overlying the triceps	5/8 inches (23–25 gauge)

TABLE 38.4 Subcutaneous (SQ) Needle Injection Administration Subcutaneous injection sites and needle size vary by age. Selecting the correct needle size and injection site can help ensure accurate administration and patients' comfort.

Post-Vaccination Care

Following administration of a vaccine, providers should educate patients or caregivers about how to manage expected symptoms and side effects as well as when to seek additional care. When they return home, patients or caregivers should monitor for adverse reactions. It is normal for patients to have a low-grade fever, chills, body aches, pain or redness at the injection site, or fatigue following administration—these are all expected responses of the body to the triggered immune system as it creates antibodies to the introduced antigen. However, if patients have a high-grade fever, difficulty breathing, systemic rash, swelling or redness that proceeds down the extremity, or additional signs of allergy or severe reaction, they should reach out to a healthcare provider immediately for guidance.

Documentation

Following administration of a vaccine, the provider will need to document several pieces of information:

- date of administration
- name of vaccine given
- manufacturer
- lot number
- expiration date
- site and route of administration
- name and title of who administered the vaccine
- notification of VIS given

LINK TO LEARNING

The CDC maintains a web page with facts about the Vaccination Information Sheets (https://openstax.org/r/77FactsVISs) that must be given to patients prior to administration of a vaccine.

Documentation is important to help mitigate safety concerns for patients and expedite follow-up care as needed. Information about the site and route of administration is important when assessing for local site reaction. Information about the manufacturer, lot number, expiration date, and name of vaccination allow providers to follow up if there is a concern with a batch of vaccination or an identified adverse reaction. Additionally, it is important for patients and caregivers to maintain the recommended intervals for vaccinations, as detailed in the age-appropriate schedule. Having this information documented allows for tracking of vaccinations and helps healthcare providers develop an individualized plan for each patient.

The Vaccine Adverse Event Reporting Systems (VAERS) is the national vaccine safety surveillance program. National Institutes of Health. This program compiles reported information in order to create educational documents such as the VIS.

LINK TO LEARNING

The CDC provides guidelines for documentation of vaccinations (https://openstax.org/r/77DocVaccGuide) as well as insight into the importance of documentation.

Summary

38.1 Stages of Growth and Development

One of the first steps in providing care across the life span is understanding how a patient population grows and develops over that time frame. No matter the desired nursing specialty, to provide crucial care, nurses must understand the impact their care decisions may have on a patient—in both the short and long terms. Physical growth may be easier to assess, but this assessment must be coupled with all forms of development—cognitive, psychosocial, personality, communication, sexuality, and motor function—to fully understand a patient's condition. From birth to end of life, patients are categorized into the following developmental stages: newborn (0–28 days), infant (0–12 months), toddler (1–3 years), preschool (3–5 years), middle childhood (6–11 years), adolescent (12–17 years), young adult (18–35 years), adult (36–64 years), and older adult (65 years and older).

Considered the "work" of children, play is a crucial component of development throughout the life span. Play can improve physical, social, cognitive, and emotional well-being. Types of play include solitary, associative, cooperative, and onlooker/observer play.

38.2 Specific Developmental Theories

Theories of development help provide a foundation for understanding how people grow and develop. Some of the most used and discussed theories in health care regarding development are Erik Erikson's theory of psychosocial development, Jean Piaget's theory of cognitive development, Lawrence Kohlberg's theory of moral development, and Sigmund Freud's theory of psychosexual development. Though Erikson's theory was influenced by the work of Freud, he focused on psychosocial development rather than psychosexual development. Piaget's theory focuses on cognitive development, which he claimed occurs in four sequential stages. Kohlberg's theory, which builds upon Piaget's theory, argues that moral development occurs in stages.

38.3 Application to Care

In order to provide the best care for patients across the life span, nurses must have a baseline understanding of growth and development and how this can impact all areas of care, such as a patient's health status, developmental stage, family/caregiver support availability, resource availability, and desire for care. In addition to visits when patients are acutely ill, well-visits are an optimal opportunity for nurses to implement these aspects of care. Well-visits provide a designated time for providers and patients to review concerns, plan for the future, and screen for long-term complications. Well-visit intervals are more frequent with younger children to assess for milestones and monitor leaps in development.

A major aspect of providing quality and effective patient care through the life span is the administration of vaccinations and education regarding their purpose. As a key process of obtaining acquired active immunity, vaccinations help protect patients at the individual and whole population levels. A vaccine works by exposing the patient to foreign substances (antigens), triggering the patient's immune system to produce antibodies and create a blueprint for more efficiently identifying and attacking that antigen in the future. Nurses must understand how to educate patients and caregivers regarding the benefits, risks, and anticipated outcomes of vaccinations. Additionally, nurses are also responsible for vaccination administration and patient evaluation.

Key Terms

adolescence the life stage from 12 to 17 years
adult the life stage from 36 to 64 years
anticipatory guidance the process of proactively counseling caregivers regarding significant physical, psychological, emotional, and developmental changes their child will encounter in the future
associative play play in which participants involve and engage with others around them
atraumatic care care that strives to eliminate as much patient trauma as possible from the experience
cephalocaudal head-to-toe
conservation the understanding that something may change its size or appearance without also changing its quantity
cooperative play play in which all participants are expected to follow established rules
decentering the process of investigating more than one problem at a time

development the process by which a person gains various skills and functions
dramatic play play in which participants take on roles and characters and use their imagination to interact with their surroundings
ego the regulator between the id and the superego
fine motor skills precise movements of small muscle groups
generativity making a mark on the world with something that will outlast the life of the individual
gross motor skills coordination of large muscle groups
growth physical change in size
herd immunity a landmark reached when a significant portion of the population (the "herd") becomes immune to a disease
id the primitive or unconscious part of the mind, which seeks gratification though physical needs
immunization the method by which a person develops protection against a disease through vaccination
infancy the life stage from 0 to 12 months
middle childhood the life stage from 6 to 11 years
neonatal the period of time from birth to 28 days
object permanence the understanding that an object still exists even after it is hidden or moved from sight
onlooker play the process of watching others perform a task or engage in play
parallel play play in which participants play side by side but not with one another
play considered the work of children; a crucial aspect in growth and development
preschooler the life stage from 3 to 5 years
puberty the stage of development during which physical and sexual maturity occurs and individuals become capable of reproduction
reversibility the ability to understand a process and the steps of a process in any order
solitary play an act of independent play
superego the part of the mind responsible for upholding social norms and making moral decisions
theory of cognitive development Jean Piaget's theory that claims that individuals pass through four stages from birth to adolescence and notes changes in a person's ability to use logic and scientific theory as they develop
theory of moral development Lawrence Kohlberg's theory, building upon Piaget's theory of cognitive development, that moral reasoning develops in stages
theory of psychosocial development Erik Erikson's theory that personality develops through stages in a predetermined order, with two outcomes at each stage: successful completion or unsuccessful completion
toddler the life stage from 1 to 3 years
vaccination the act of presenting a vaccine to the body to elicit protection from a specific disease
young adults the life stage from 18 to 35 years

Assessments

Review Questions

1. Cephalocaudal development describes development in which direction?
   a. distal to proximal
   b. extremities to core
   c. toe to head
   d. head to toe

2. A nurse observes two toddlers at a playground. They are sitting in the same sandbox, but each is building their own sandcastle. The nurse knows these children are demonstrating which type of play?
   a. solitary
   b. parallel
   c. associative
   d. cooperative

3. What stage is a landmark for gaining independence and pushing boundaries?
   a. infant

b. toddler
c. preschool
d. middle childhood

4. The mother of a 12-year-old patient is discussing with the nurse how much her child likes to play on the baseball team at school. The nurse knows the mother is describing which type of play for this patient?
a. parallel
b. solitary
c. associative
d. cooperative

5. What action would demonstrate to the nurse that an infant has mastered the landmark of understanding object permanence, according to Piaget's theory of cognitive development?
a. laughing at themselves in a mirror
b. holding a shoe in each hand simultaneously
c. looking for a toy in their crib in the last place they saw it
d. throwing food from their tray to the floor

6. According to Erikson, what is the main conflict of the toddler period?
a. autonomy versus shame
b. industry versus inferiority
c. initiative versus guilt
d. trust versus mistrust

7. Dramatic play is the landmark of which stage of Jean Piaget's theory of cognitive development?
a. sensorimotor thinking
b. preoperational thinking
c. concrete operational thinking
d. formal operational thinking

8. What theory states that personality develops according to a predetermined order of stages, each of which has two outcomes: successful completion or unsuccessful completion?
a. Erik Erikson's theory of psychosocial development
b. Jean Piaget's theory of cognitive development
c. Lawrence Kohlberg's theory of moral development
d. Sigmund Freud's theory of psychosexual development

9. The caregiver of a 9-month-old infant who received routine immunizations in their vastus lateralis the day before calls and asks to speak with the nurse. The parent is concerned and reports that the infant has a fever of 100.2°F and a small, red, slightly elevated area of skin at the injection site. How should the nurse respond?
a. "This is an expected reaction to injections at the vastus lateralis. When your child is old enough to use other sites, they won't have these reactions."
b. "This is an expected reaction from the immunization process. The body's immune system has been activated."
c. "This is a concerning finding indicating an allergy. Bring your child in for evaluation."
d. "This is unrelated to the immunization. Bring your child in so we can determine the cause."

10. A caregiver comes to the pediatrician's office with her 2-year-old for a well-child visit. The caregiver reports that their child has missed the last two appointments due to scheduling issues. The nurse reviewing the chart realizes that the child is behind on several immunizations. What action should the nurse take regarding the immunizations?
a. Ignore the issue because missing a few is not important.
b. Skip these doses and proceed to the next scheduled items.

c. Recommend all vaccination series be restarted.
d. Refer to the CDC vaccination "catch up" schedule.

11. A nurse cares for an 18-month-old patient who needs an intravenous line placed. What is an example of practicing atraumatic care in a hospital setting?
a. performing the procedure in a designated treatment room
b. restraining the patient in the crib while performing the assessment
c. refraining from praising the child if they are crying
d. performing the procedure in the patient's bed so they are more comfortable

12. A nurse is caring for a 16-year-old patient. The patient asks the nurse how often they should have a well-visit. How should the nurse respond?
a. every six months
b. every year
c. every year and a half
d. every two years

Check Your Understanding Questions

1. Discuss the difference between growth and development. How should growth and development be used together as part of nursing practice?

2. Describe two examples of each of the following types of play: solitary, parallel, associative, cooperative, onlooker.

3. Summarize the foundational understandings of Erik Erikson's theory of psychosocial development, including the eight stages.

4. List four theories of development used in nursing care.

5. What is atraumatic care? Why is it an important part of nursing practice?

6. The nurse is educating a mother regarding the well-visit interval for her newborn baby. The mother asks the nurse why the time interval is so short between birth and 3 years. How should the nurse best respond?

Reflection Questions

1. As the nurse, you assess an 18-month-old child who does not demonstrate many of the milestones outlined for that age. You know you must discuss these deficits with the provider in order to complete additional assessment and testing. How should you convey this message in a supportive manner to the patient's caregivers?

2. Which theory outlined in this chapter do you feel is most relevant to current nursing practice? Which theory do you feel is least relevant to current nursing practice? Why?

3. Discuss the importance of developmental theories. How can these theories help guide nursing care across the life span?

4. How would you, as the nurse, respond to a patient or caregiver who has a different opinion than yourself regarding the choice to vaccinate themselves or their children?

What Should the Nurse Do?

1. The nurse receives a call from a caregiver who has given birth four days ago. The caregiver is concerned because she notices the baby seems lighter than at birth and has lost weight. The caregiver asks why this might be and what she should do. How should the nurse respond?

2. The mother of a 2-year-old child is expressing concern to the nurse, stating, "My child never plays with the other kids at the childcare center. He will sit next to them and play, but he won't interact and play with them. He sometimes plays in the sandbox right next to another child but won't build the same castle or play with

them." What should the nurse do or say to the concerned mother?

3. The nurse is assessing developmental milestones on an 18-month-old patient. The nurse would like to assess the concept of object permanence. Outline how the nurse can assess for this milestone while in the hospital or clinic.
4. A nursing student is reviewing the process for during and after administration of a vaccination and asks the nurse why it is important to document each of these components. How should the nurse reply?
5. The caregiver of a 5-year-old patient is speaking with the nurse regarding the child's vaccination appointment. The caregiver tells the nurse that they have not been able to maintain the originally outlined schedule but would like to get all the recommended vaccinations. What should the nurse do?

Competency-Based Assessments

1. Create a brochure geared toward caregivers of young children highlighting the difference between growth and development. Discuss the importance of each concept and how they are intertwined in the assessment of children.
2. Create a chart comparing Erik Erikson's theory of psychosocial development, Jean Piaget's theory of cognitive development, Lawrence Kohlberg's theory of moral development, and Sigmund Freud's theory of psychosexual development.
3. Create a PowerPoint presentation outlining appropriate application of at least two developmental theories into nursing practice.
4. Use the internet to research common reasons why caregivers may choose not to allow vaccinations for their child. Write a script to determine how you would address these concerns with a caregiver.

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CHAPTER 39
Conception Through Adolescence

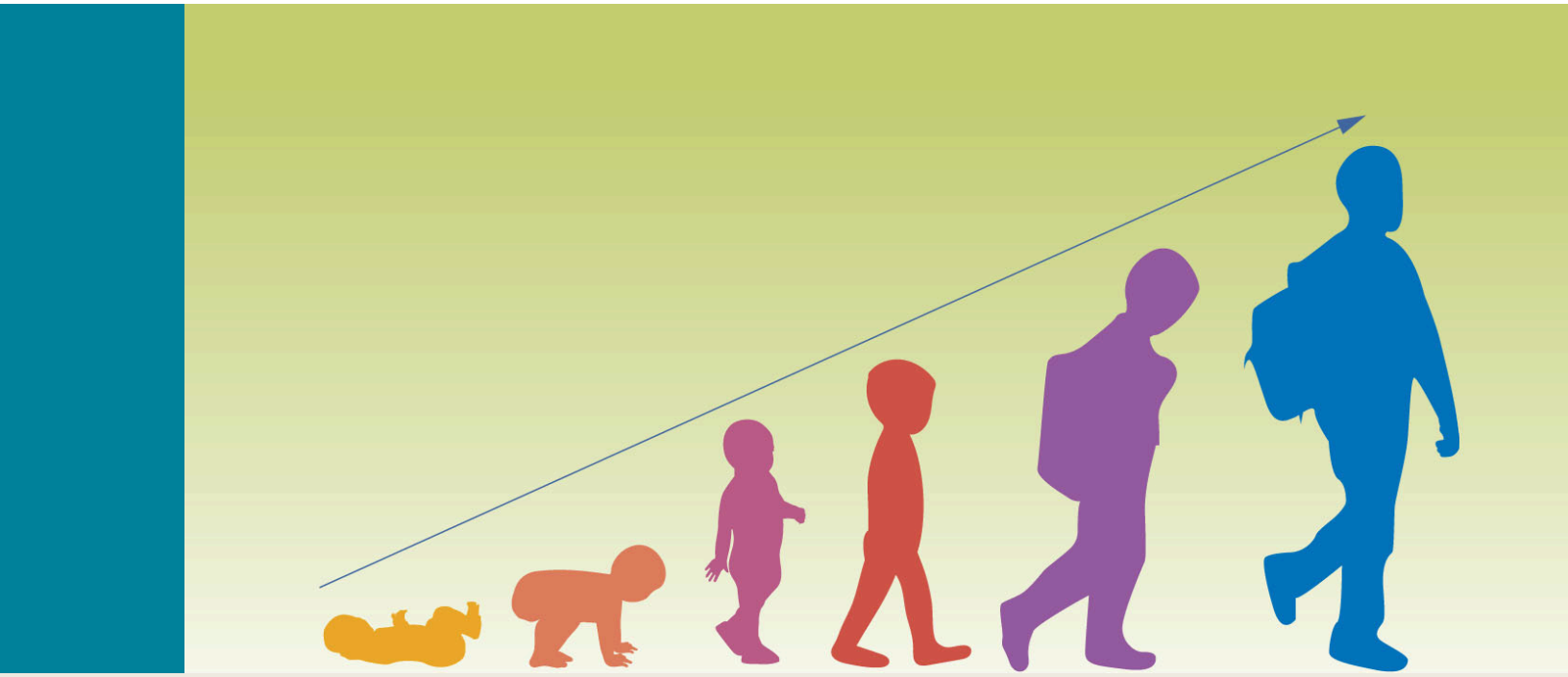

FIGURE 39.1 The largest transformation of human growth and development takes place from conception through adolescence. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

CHAPTER OUTLINE

39.1 Growth and Development Stages
39.2 Theories Related to Growth and Development
39.3 Health Risks for Each Stage
39.4 The Nurse's Role in Preventing Illness

INTRODUCTION Growth and development occur in a predictable sequence throughout our lives, but the most dramatic changes happen during childhood. Understanding growth and development is the foundation of pediatric nursing practice. Applying knowledge about pediatric growth and development to specific clinical scenarios allows nurses to address the cognitive, physical, and emotional needs of their patients.

39.1 Growth and Development Stages

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify growth and development of the conception and prenatal stage
- Recognize growth and development of the neonate stage
- Describe growth and development of the infant stage
- Recall growth and development of the toddler stage
- Understand growth and development of the preschool stage
- Analyze growth and development of the school-age stage
- Verbalize growth and development of the adolescent stage

The way in which children develop from conception through adolescence determines their personality, cognitive ability, psychosocial skills, and physiological response to illness. The sequential process through which children obtain new skills, cognitive ability, and emotional awareness is called development. The increases in height and

weight that happen as children mature are known as growth. Nurses need to understand this process to provide age-appropriate care to their patients. It is important to remember that development encompasses not only the physiological changes throughout childhood but also how emotions, psychological state, and social relationships change and adapt over time (Saddleback College, 2019).

Conception and Prenatal Development

Human development begins at **conception**, which is the biological process of a sperm fertilizing an **ovum**, otherwise known as an egg (see Figure 39.2). The product of conception is referred to as a **zygote**, which is a fertilized ovum. Conception almost always occurs in a fallopian tube. A normally formed human zygote has forty-six chromosomes, twenty-three from the ovum, and twenty-three from the sperm. The development process that starts at conception and ends at birth is called **prenatal development**. Prenatal development has three subcategories: pre-embryonic, embryonic, and fetal (Lally & Valentine-French, 2019).

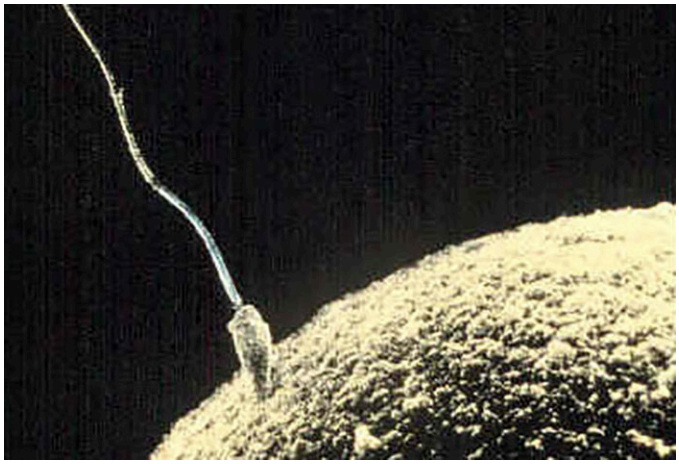

FIGURE 39.2 Sperm and ovum fuse at the point of conception. (credit: "Sperm-egg.jpg" by Unknown/Wikimedia, Public Domain)

Pre-Embryonic

The **pre-embryonic period** is also known as the germinal period. This pre-embryonic period occurs in the first two weeks after conception. In the early pre-embryonic period, days one to three after conception, the fertilized egg, or zygote, remains in the fallopian tube. By the third day, the zygote has replicated to be approximately sixteen cells. This mass of cells is called the **morula**, and it migrates from the fallopian tube to the uterus for implantation. In the uterus, the mass of cells continues to grow and forms a blastocyst and a trophoblast. The blastocyst is the cluster of cells that ultimately develops into the embryo; it is surrounded by the trophoblast, which is the group of cells that develops into the placenta. By the end of this period, the fertilized egg is implanted in the uterus (Lally & Valentine-French, 2019).

Embryonic

The **embryonic period** is the period of development from approximately two weeks after conception to eight weeks after conception. During this stage, the blastocyst and trophoblast that developed in the pre-embryonic stage continue to specialize. The trophoblasts develop chorionic villi, or a network of blood vessels that penetrate the lining of the uterus. The blood vessels from the lining of the uterus dilatate and grow around the chorionic villi, ultimately becoming the placenta.

The other cellular formation from the pre-embryonic phase, the blastocyst, develops into three cell layers: the ectoderm, the mesoderm, and the endoderm. These three layers develop into all the tissue and organ systems in the human body. The ectoderm becomes the outer layer of skin, hair, nails, and mucous membranes. The mesoderm becomes the deeper skin layers, cartilage, bones, muscles, cardiac structures, and kidneys. The endoderm becomes the lining of the trachea, pharynx, bronchi, and gastrointestinal (GI) and genitourinary (GU) tracts.

A key concept of embryonic development is that if there is a problem in a cell layer it will likely affect multiple organ systems. For example, both the cartilage, a key component of ear formation, and the kidneys develop from the mesoderm layer. It is common that children born with congenital kidney problems also have problems with their ears (Phelan & Rheault, 2018).

It is also important to remember that the risk of teratogenic exposure is highest during the embryonic developmental stage. A **teratogen** is any external force, like a medication, chemical, alcohol, drug, or maternal infection, that can cause fetal abnormalities. Since the basic structure of the human body is being developed in this stage, exposure to teratogen has the potential to cause permanent damage or even death (Lally & Valentine-French, 2019).

Fetal

The **fetal period** describes prenatal development from week nine after conception to birth (see Figure 39.3). By week nine, all the organ systems and external structure of an infant are partially developed. From this point forward, the organ systems continue to mature and prepare the fetus for extrauterine life. There are several key developmental **milestones** of the fetal developmental stage. By sixteen weeks' gestation, the gender can be determined. At twenty-four weeks, fetal breathing movements start to occur. Around twenty-eight weeks, the fetus begins to develop surfactant, which is a hormone needed to keep the alveoli in the lungs open. Around thirty-two weeks, the fetus begins to demonstrate the sucking reflex, which is a survival reflex needed to feed. Forty weeks is considered full term (Lally & Valentine-French, 2019).

FIGURE 39.3 During the fetal stage, the baby's brain develops, and the body adds size and weight until the fetus reaches full-term development. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Neonate Development: Birth to Twenty-Eight Days

The neonatal period refers to the first twenty-eight days after birth. This is an important developmental stage that establishes the feeding, bonding, and sleeping patterns of the infant. While these elements of development are extremely important, this is also a period of caution. Neonates are not born with a mature immune system and are at risk for serious infections. Also, previously undiagnosed congenital abnormalities are likely to be detected in this stage.

Physical

Full-term newborns are born with reflexes that are protective in nature. For example, they have a rooting reflex and

a suck reflex. The rooting reflex is an innate response to stimulation of the face, mouth, or cheek. It helps babies find and latch onto a nipple to begin feeding. The suck reflex begins around thirty-two weeks' gestation and is an automatic response to suck and swallow in response to oral stimulation (Saddleback College, 2019).

A healthy newborn is expected to lose 7 to 10 percent of their birth weight in the first two to three days after birth. This is because newborns are born with excess fluid as a result of the birthing process, especially if the birthing person received intravenous fluid during labor (Miyoshi et al., 2020). They should regain their birth weight by the first two weeks. Once they regain their birth weight, newborns should gain an average of 1 oz (30 g) per day and grow 1 to 1.5 in. (2.5 to 4 cm) over the first twenty-eight days (Desiraju, 2018).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Procedure: Documenting Apgar Scores

The Apgar score is a standardized tool to report the status of a newborn immediately after birth. The scores are recorded at one and five minutes. The American Academy of Pediatrics defines a five-minute Apgar score of 7 to 10 as reassuring, 4 to 6 as moderately abnormal, and 0 to 3 as low.

Apgar Components	0	1	2
Color	Blue or pale	Acrocyanotic	Completely pink
Heart rate	Absent	<100 per minute	>100 per minute
Reflex irritability	No response	Grimace	Cry or active withdrawal
Muscle tone	Limp	Some flexion	Active motion
Respiration	Absent	Weak cry; hypoventilation	Good, crying

What is the nurse's responsibility in response to Apgar scores?

Apgar 7 to 10: Dry the infant, promote bonding with skin-to-skin contact, prevent heat loss.

Apgar 4 to 6: Stimulate, provide positive pressure ventilation via bag mask.

Apgar 0 to 3: Call a code, initiate CPR (Simon et al., 2023).

Behavioral

The most important psychosocial milestone of the neonatal period is bonding with the caregiver and developing a sense of trust. It is important to educate parents about normal neonatal sleeping and feeding behavior so they can respond appropriately to their infant.

Neonates sleep for approximately twelve to sixteen hours per day. When they are not sleeping, they are most often feeding. It is common for a bottle-fed neonate to feed every two to three hours. Breastfed neonates may feed more frequently, every one and a half to two hours.

During these initial twenty-eight days, it is extremely important that parents learn to recognize cues from their infant. As parents respond when the infant is hungry, has a dirty diaper, or is uncomfortable, the neonate develops a sense of trust, which is an important element of psychosocial and personality development throughout childhood.

Infant: One Month to One Year

The infant period of development is a time of rapid growth and development (Figure 39.4). With every passing month, infants acquire more skills, develop unique personality characteristics, and increase their height and weight. Knowing the normal pattern of growth and recognizing acquisition of key milestones is an important element of pediatric nursing. Applying this knowledge to a nursing assessment helps identify areas of concern so that the

healthcare team can intervene early.

FIGURE 39.4 Rapid physical changes occur in infants over the course of their first year. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Physical

Rapid growth is the hallmark feature of infancy. By 6 months of age, infants are expected to double their birth weight, and they should triple their birth weight by 1 year. They should also be growing between ½ and 1 in. (1.3 and 2.5 cm) every month.

In addition to rapid changes in height and weight, infants' heads are also growing during this age range. At birth, an infant's head circumference, on average, is ¾ in. (2 cm) greater than the chest circumference. The head continues to grow rapidly during the first four months and then starts to slow down. By approximately 6 months of age, the head circumference and the chest circumference are equal (Graber, 2023).

Developmental Patterns

Infant development patterns revolve around acquisition of gross motor skills. There are two primary developmental patterns: **proximodistal** and cephalocaudal. In the proximodistal pattern, development occurs closer to the midline first and then in extremities. For example, infants have trunk control, which is midline, before they have control of their hands and feet, which are distal. In the cephalocaudal pattern, development begins first with the head and then extends downward toward the trunk. An example of cephalocaudal development is having head and neck control before having control of the trunk and extremities.

Cognitive

Cognitive development in infancy is assessed by evaluating whether the infant is meeting developmental milestones. Developmental milestones are activities 75 percent or more of children can do by a certain age (Table 39.1) (Centers for Disease Control and Prevention, 2023).

Age in Months	Expected Developmental Milestones
2	Moves head side to side, tracks with eyes, makes verbal noises, has a social smile, holds head up when supine
4	Reaches for toys, rolls over, remembers faces, babbles
6	Sits with support, makes vowel sounds, responds to their name, looks in the mirror
9	Sits without support, crawls, stands, moves objects from hand to hand, develops object permanence
12	Takes independent steps, follows simple commands, says simple words, able to take toys in and out of a container

TABLE 39.1 Milestones from Infancy to 1 Year (Source: CDC, 2024.)

Psychosocial

The psychosocial development of an infant 1 month to 1 year focuses on recognition of caregivers and the initiation of play. By approximately 6 months of age, infants demonstrate **separation anxiety**, or fear of abandonment when

their primary caregiver leaves. This behavior is a normal part of development that children usually outgrow by age 3 years.

Throughout the first year, infants become more active with their play. Starting at 6 months, infants enjoy knocking over blocks, rolling a ball on the floor, and playing with other sensory toys. They learn to explore their environment through play and develop both their fine and gross motor skills. Providing a safe environment for infants to play is an important part of caring for them (Newton, 2022).

Toddler: One to Three Years

The rapid changes in height and weight seen in the first year of life start to slow down in the toddler years. This developmental stage is more about acquiring new cognitive skills and less about changes in physical size. In a relatively short period of time, toddlers change from being completely dependent on their caregivers to gaining a sense of autonomy and being able to complete tasks like feeding themselves and dressing themselves (Saddleback College, 2019).

Physical

Although physical growth slows during the toddler years, toddlers noticeably change year by year in their physical size. By approximately age 2 years, toddlers have quadrupled their birth weight. Once this milestone is achieved, they continue to gain 4 to 6 lb (2 to 3 kg) per year and grow 2 to 3 in. (5 to 7.5 cm). This rate of growth continues to approximately age 3 years (Graber, 2023).

Cognitive

Toddlers are on the go. They love running, climbing, and testing out their new physical skills. Much of toddlers' cognitive development is demonstrated in their rapid achievement in gross motor skills. By the end of the toddler years, children should be able to throw a ball, kick a ball, and run without falling (Saddleback College, 2019).

In addition to rapid attainment of new gross motor skills, toddlers develop language skills and fine motor skills. By the end of the second year, children should be able to speak in two- to three-word sentences and have a 200-word vocabulary. They should also have the fine motor skills needed to scribble with a crayon or marker and be able to feed themselves with a spoon and fork (Byington & Kim, 2015).

Psychosocial

The primary psychosocial achievement during the toddler years is to transition from independent play to parallel play. Children learn how to socialize through play. During parallel play, children play near each other but not with each other. Although it appears that children engaged in parallel play are not paying attention to the other child, they are. They often mimic the other child and are learning to socialize (Figure 39.5). This type of play is a bridge to other more advanced play that develops throughout childhood (Newton, 2022).

FIGURE 39.5 Children may engage in parallel play even when they are in close proximity, and may switch between playing together or separately at any time. (credit: US Army Southern European Task Force/Flickr, CC-BY 2.0)

Preschool: Three to Five Years

The preschool developmental period is the bridge from the toddler years to the school-age years. Children in this age group learn new social skills that get them ready for school. For example, they learn to follow rules and play with other children in a group. While they continue to be very physically active, they have more self-control than toddlers and have a longer attention span.

Physical

The rate of growth continues to slow during the preschool years. The average preschool-age child gains 5 lb (2 kg) per year and grows 3 in. (8 cm) per year. As their body proportions change, they become more coordinated with their movements. Their limbs grow longer, and their balance improves, making it easier for them to participate in active play. In addition to these changes, their abdominal muscles strengthen so their abdomen no longer looks distended, and they have a more slender physique (Graber, 2023).

Cognitive

Cognitive development in the preschool years focuses on changes in how children think. Toddlers are very egocentric and view the world only from their perspective. Preschool-age children have a greater appreciation of others and are very creative. Their language skills are growing exponentially, and they love to tell stories. They also frequently have imaginary friends and like to play make believe.

By the end of this developmental stage, children should have the cognitive skills to learn new knowledge. Attending preschool helps them get ready. Children who attend preschool are likely able to write their name, cut with scissors, and draw shapes when they start school. They are also used to being in a group setting and can follow rules. All of this makes it easier for them to adapt to the school environment (Newton, 2022).

Psychosocial

Psychosocial development in preschool children revolves around learning to function outside of the home, being away from their primary caregiver, and learning the rules of being in a group setting.

A common stress for parents of preschool-age children is separation anxiety. Children in this age group frequently have a hard time adjusting when they are left at preschool. It is important to teach parents that separation anxiety is a normal part of development and does not mean that their child is not ready for preschool (National Health Services UK, 2023).

PATIENT CONVERSATIONS

What If Your Child Cries When Dropped Off at Preschool?

Scenario: Nurse sees a 3-year-old patient and her mother at a community health center for a well child check.

Nurse: Hi! My name is Emily; I'm one of the pediatric nurses at the clinic. Do you mind verifying your child's name and date of birth?

Mother: Sure. My name is Jenny, and my daughter's name is Zoe. Her date of birth is January 2, 2020.

Nurse: Great! Is there anything in particular that you want to talk about today?

Mother: Zoe is really stressing me out right now. She cries and clings to me every time I leave her at day care. I feel like a bad mother for leaving her there.

Nurse: That must be really stressful for you! But don't worry, her behavior sounds normal for a 3-year-old. A lot of parents feel guilty when they leave their kids at preschool, but the truth is that preschool is great for this age group. It teaches them skills to get them ready for school. Does Zoe seem like she has fun when you come to pick her up in the afternoon?

Mother: Most of the time. She's starting to make friends at school, and she talks about them at home. Once she's there, she seems to do great. It's just the crying when I drop her off that breaks my heart.

Nurse: I understand. Moms hate to see their babies cry. It sounds like you're doing a great job. What Zoe is going

through is called separation anxiety. It is a normal developmental stage. The best thing for you to do when you drop her off is to remain calm and let her know what time you'll be back. She probably doesn't understand time yet. So it's best to let her know what time you'll be back in terms of her daily routine. Say something like, "I'll be back after lunch," or "I'll pick you up after nap time." Keep the goodbye brief. If you let her cling and cry for an extended period of time, she'll start to think having a fit is a good way to get attention.

Mother: Haha. Yeah, she's pretty smart, and she knows how to get her way. I'll try your technique and see if it gets better.

Nurse: It definitely should. It usually takes kids a couple of weeks to get used to the new routine. Before you know it, she'll be asking to go to preschool.

School-Age: Six to Twelve Years

During the school-age period of development, children go through a significant amount of physiological and cognitive changes. From the early school years to the preteen years, they change from needing constant supervision to being largely independent. During this age bracket, they progressively develop more independence and establish patterns of behavior with regard to school, friends, and extracurricular activities. Children in this age group tend to have strong bonds with peers and like to participate in activities, hobbies, and sports (Saddleback College, 2019).

Physical

Growth continues at a steady pace during the school-age years. On average, children grow 2.5 in. (6 cm) per year and gain 5 to 7 lb (2 to 3 kg) per year. By the end of the school-age period, children start to accumulate more fat in preparation for the growth spurt that occurs during adolescence. Another important physical change of this period is related to teeth. Around age 6 years, children start to lose their deciduous teeth. By age 12 to 13 years, all their adult teeth, except their wisdom teeth, should be in (Graber, 2023).

Cognitive

As children mature through the school-age period, their ability to pay attention and concentrate increases. They move beyond learning through memorization to developing math skills, writing skills, and problem-solving skills. Their language evolves, and they can understand grammar rules, participate in creative writing activities, and use language in a more expressive way (Saddleback College, 2019).

Psychosocial

Peer-to-peer relationships are the backbone of psychosocial development for school-age children (Ţepordei et al., 2023). In this age group, children tend to have a best friend, and friendship groups start to form. Children like to spend time with their friends through activities like riding bicycles, skating, swimming, and participating in competitive sports (Figure 39.6). Although they are still very active, their fine motor skills have developed to the point that they can sit and work on projects. They frequently enjoy drawing, computer work, and hobbies like collecting things (Newton, 2022).

FIGURE 39.6 Because they understand luck and fairness, children in middle and late childhood (6 to 11 years old) are able to follow rules for games. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Adolescent: Thirteen to Eighteen Years

Adolescence is the final development stage of childhood before adulthood. This stage is characterized by both cognitive and physical maturation. During this stage, adolescents develop cognitive abilities that are similar to adults, go through puberty, and reach or nearly reach their adult height.

Physical

The primary physical change during adolescence is **puberty**, or the development process of becoming sexually mature. Puberty is a stepwise process that takes about five years. People assigned female at birth tend to enter puberty before people assigned male. The onset of puberty for females is usually between the ages of 8 and 13 years. Males tend to start puberty between the ages of 9 and 14 years (National Institutes of Health, 2021).

In addition to sexual maturation, all people go through a rapid growth spurt during adolescence. They tend to grow between 3 and 3.5 in. (7.5 and 9 cm) per year during their peak growth spurt. However, females tend to stop growing sooner. Most females reach their final, adult height two years after **menarche** (first menstrual period), while males tend to continue growing until age 20 years (Graber, 2023).

REAL RN STORIES

Sexually Active Teenager

Nurse: Ruth, BSN
Clinical setting: School-based clinic
Years in practice: 15
Facility location: High school in a large metropolitan area of Colorado

We serve students at a local high school. The clinic is staffed by a nurse practitioner and a registered nurse. There is also a social worker who rotates through multiple school-based health clinics. Students come in for sports physicals, sick visits, management of chronic illness, and reproductive healthcare services.

One day after school, Gina H., a 15-year-old sophomore, came into the clinic and requested a pregnancy test. Gina comes to the clinic often. She seems lonely and likes to talk with me and the other nurses. After checking Gina's vital signs, I obtained a urine sample for the pregnancy test and assigned Gina to an exam room to wait for the nurse practitioner.

Gina was not pregnant, but on further questioning, she admitted being sexually active with multiple boys. She was scared that she would get a sexually transmitted infection (STI) and was also paranoid she would get pregnant. She admitted that she was not using any form of birth control. The nurse practitioner screened Gina for STIs and requested that she return to the clinic for a counseling session with me and a social worker.

Gina came back the following week and met with me and the social worker. During the session, Gina admitted to problems at home. Her mother and father recently separated, and she did not get along with her mom's new boyfriend, who drank a lot and was sometimes verbally abusive. Since the boyfriend moved in with her mom, Gina had been spending more time with friends and meets up with guys at different parties.

After meeting with Gina, I filed a report with social services. I also discussed birth control options with her. As a 15-year-old in Colorado, she can consent for birth control without parental permission. After reviewing her options, Gina decided to use Depo-Provera, a long-acting birth control injection that lasts for three months. She also agreed to continue coming to the clinic weekly for counseling sessions.

Social services completed a home visit and determined that there was no evidence of abuse. However, a case file was created, and Gina was given appropriate phone numbers to call if she has problems at home. She continues to come to the clinic on a weekly basis to meet with me. Since starting therapy, her affect has improved, and she seems more interested in school.

Cognitive

Cognitive maturation during adolescence focuses on two elements: abstract thinking and a sense of morality. By the end of adolescence, teenagers should have developed **abstract thinking**, or the ability to think through scenarios

with different possible outcomes and evaluate which outcome would be best. The same process is true with regard to a sense of right versus wrong. Prior to adolescence, children view ethical dilemmas based on the desire to follow rules or to avoid punishment. By the end of adolescence, they can analyze individual circumstances and make decisions based on a sense of ethical correctness (Figure 39.7) (Newton, 2022).

FIGURE 39.7 Teenage thinking is characterized by the ability to reason logically and solve hypothetical problems such as how to design, plan, and build a structure. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Psychosocial

The primary psychosocial task of adolescence is establishing independence and an identity apart from the family of origin. Peer relationships are incredibly important in this age group (Figure 39.8). Adolescents dress like their friends, participate in the same activities as their friends, and are prone to give in to peer pressure. This can be a challenging time for parents. As adolescents try to assert their autonomy, they challenge the authority of their parents. This process is made even more tumultuous by the hormonal changes of puberty that can lead to emotional outbursts (Saddleback College, 2019).

FIGURE 39.8 Peers are a primary influence on our development in adolescence. (credit: "130726-F-BZ180-001" by Staff Sgt. Luther Mitchell/U.S. Air Force, Public Domain)

39.2 Theories Related to Growth and Development

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain Freud's theory in relation to growth and development
- Explain Erikson's theory in relation to growth and development
- Explain Havighurst's theory in relation to growth and development

Childhood development is both predictable and unique, meaning children progress through specific stages but also demonstrate unique psychosocial and personality characteristics throughout their childhood. The development theories help us understand how children develop and learn, and if their behavior and cognition fall within the normal range for children their age. There are three specific theories that are often discussed in pediatric development: Freud's theory, Erikson's theory, and Havighurst's theory.

Freud's Theory

Freud described personality development through psychosexual stages. The stages are oral, anal, phallic, latent, and genital. According to Freud, *sexual* is a general term that refers to any pleasurable action, behavior, or thought. Based on children's age, they progress through stages in which a specific part of their body experiences pleasure and tension. In each stage of development, there is a conflict between frustrated wishes and social norms. Ideally, children resolve each conflict and move on to the subsequent stage. Some children may linger in a stage because their needs are under met or over met. For example, according to Freud, both children who are underfed and overfed as infants may develop personality deficits (Lantz, 2022).

Another important aspect of Freud's theory of personality development is the idea that personality is multidimensional. According to Freud, there are three parts of the human personality: the id, ego, and superego. The id represents our instincts and our impulses. The ego focuses on our reality. The superego focuses on morality. The three parts of the human psyche interact with each other to define our personality. These three elements of the human psyche develop in childhood throughout the stages of development (Table 39.2).

Stage	Age	Focus	Id, Ego, or Superego
I—Oral	0 to 1 year old	Gratification comes from the mouth, including biting and sucking activities.	Id is present at birth. Ego starts to develop.
II—Anal	1 to 3 years old	Anus is the primary interest. Toilet training is a primary developmental task.	Ego is the primary facet of this stage of personality development.
III—Phallic	3 to 6 years old	Genitals are the area of focus. Masturbation is common. Many children bond with the opposite-sex parent. This is referred to as the Oedipus complex.	Superego starts to develop.

TABLE 39.2 Freud's Development Stages (Source: Lantz & Ray, 2022.)

Stage	Age	Focus	Id, Ego, or Superego
IV—Latency	6 to 12 years old	Resolution of oedipal complex. Sexual drive channeled into socially appropriate behavior like schoolwork and playing sports.	Id is repressed as children want to conform to societal norms. Superego matures.
V—Genital	13 to 18 years old	Puberty and the capacity of true intimacy are the hallmarks of this stage.	Superego is fully formed; the three elements of the human psyche interact with each other.

TABLE 39.2 Freud's Development Stages (Source: Lantz & Ray, 2022.)

Erikson's Theory

Erikson's theory of psychosocial development is based on eight stages of development through which an individual passes from infancy to late adulthood (Table 39.3). In each stage, the individual should conquer a developmental milestone through resolution of a basic conflict. The theory is sequential, meaning the skills or psychosocial attributes obtained in earlier stages are needed for successful completion of later stages. Therefore, if the person does not master the milestone in each stage, it could result in repercussions later in life and/or an unhealthy personality (Orenstein, 2022).

Basic Conflict	Age Range	Important Skill	Outcome
Trust versus mistrust	Infancy 0 to 1.5 years	Feeding	Infants develop a sense of trust if caregivers respond to their needs. If not, they develop mistrust.
Autonomy versus shame and doubt	Toddler 1.5 to 3 years	Toilet training	Toddlers are egocentric and need to develop independence from their caregiver. Successful completion of this stage leads to a sense of autonomy, while failure leads to shame and doubt.
Initiative versus guilt	Preschool 3 to 5 years	Exploration	Children begin to assert control of their environment. Success in this stage is a sense of purpose and initiative to try new things. Children who experience excessive disapproval develop a sense of guilt.
Industry versus inferiority	School age 5 to 12 years	Social awareness	School-age children need to master the demands of school and friendships. Success leads to a sense of competence, while failure leads to feelings of inferiority.
Identity versus role confusion	Adolescent 12 to 18 years	Peer relationships	Teens need to develop their own identity that is unique from their family of origin. Successful completion of this stage leads to strong personal identity, while failure results in confusion and a weak sense of self.
Intimacy versus isolation	Young adult 18 to 40 years	Intimate relationships	Young adults need to build loving, reciprocal relationships. Success leads to strong relationships with friends and a partner or partners, while failure leads to isolation and loneliness.

TABLE 39.3 Erikson's Stages of Development

Basic Conflict	Age Range	Important Skill	Outcome
Generativity versus stagnation	Adult 40 to 65 years	Professional life and parenthood	Middle-aged adults need to create something that will outlast them. This could be raising children or creating positive change. Success leads to a sense of accomplishment, while failure leads to withdrawal from society.
Ego integrity versus despair	Older adult 65 years+	Reflection on life	Older adults will look back at their life and have either a sense of fulfillment or a sense of regret and bitterness.

TABLE 39.3 Erikson's Stages of Development

LINK TO LEARNING

More information on Freud's and Erickson's theories (https://openstax.org/r/77erictheory) and their similarities and differences are presented in this video.

Havighurst's Theory

Havighurst's theory of human development is based on the premise that individuals pass through a series of developmental stages from infancy through adulthood. In each stage, there are specific developmental tasks that must be completed (Table 39.4). A **developmental task** is a challenge the individual wants to solve that arises predictably at a certain period in life. Successful completion of these tasks leads to a person's happiness and increases the probability of completion of later tasks. Failure to complete tasks leads to societal disapproval and unhappiness (Jugert & Titzmann, 2020).

Stage	Age Range	Tasks to Be Completed
Infancy and early childhood	0 to 6 years old	• Learn to walk • Learn to talk • Toilet train • Learn the foundation of reading
Later childhood	6 to 13 years old	• Acquire the skills necessary to play games • Learn to play with other children of the same age • Achieve personal independence • Recognize what society deems as masculine or feminine social roles
Adolescence	13 to 18 years old	• Accept physical changes of puberty • Prepare for having intimate relationships and starting a family • Plan for an economically viable career • Develop a personal ideology and a set of ethical values to guide behavior

TABLE 39.4 Havighurst's Developmental Stages and Tasks

Stage	Age Range	Tasks to Be Completed
Early adulthood	18 to 30 years old	• Find a partner • Establish either a masculine or feminine role • Start a family • Take on civic responsibilities
Middle age	30 to 60 years old	• Achieve adult civic and social responsibilities • Assist adolescent children to become responsible adults • Develop adult hobbies or leisure activities • Accept physiological changes of aging
Later maturity	60 years and older	• Adjust to decrease in strength and loss of physical health • Adapt to retirement • Meet social and civic obligations

TABLE 39.4 Havighurst's Developmental Stages and Tasks

Havighurst recognized that humans do not develop in a vacuum and outlined specific factors that may affect an individual's development. These factors are societal influences, personal values, and physical maturation. By recognizing that development is affected by both environmental factors and personal characteristics, Havighurst's theory is applicable to a wider population base than other theories (Jurgert & Titzmann, 2020).

39.3 Health Risks for Each Stage

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify health risks of the conception and prenatal stage
- Recognize health risks of the neonate stage
- Describe health risks of the infant stage
- Recall health risks of the toddler stage
- Understand health risks of the preschool stage
- Analyze health risks of the school-age stage
- Verbalize health risks of the adolescent stage

Health risks vary depending on the stage of development. Nurses working in pediatrics or maternal-child health need to be knowledgeable about the specific health risks for each group. By having that baseline knowledge, nurses can anticipate what health needs are likely to occur and intervene early. Anticipatory guidance and early intervention are the basis of improving health outcomes and minimizing health risks.

Conception and Prenatal Health Risks

Women who would like to conceive need education, anticipatory guidance, and support before pregnancy, throughout the pregnancy, and after pregnancy. It is important to remember that there are specific health risks at every stage of this process. Nurses should be aware of the different health risks so that they can provide appropriate nursing care.

Infertility

The inability to conceive after twelve months of unprotected intercourse defines infertility. Across all socioeconomic groups, infertility is becoming more common. Infertility affects 10 to 15 percent of males and approximately 19 percent of females in the United States (Centers for Disease Control and Prevention [CDC], 2023c; Cleveland Clinic, 2024). The steady increase in infertility is related to several factors, including delayed childbearing, obesity, smoking, alcohol consumption, psychological stress, exposure to environmental toxins, and prevalence of STIs (CDC, 2023c).

Treatment for infertility depends on the underlying cause. Prior to beginning treatment, a baseline evaluation of a female's reproductive health is usually conducted to rule out common causes of infertility, like thyroid disorder, coagulation problems, and fibroids. Treatment for infertility can be broken down into three main categories: lifestyle modifications, medications, and advanced fertility treatments. Lifestyle modifications that have a beneficial impact on fertility include maintaining a healthy weight, eating a diet low in saturated fat, and exercising on a regular basis. Medications for fertility include drugs that induce ovulation or facilitate implantation of a zygote. Advanced fertility treatments, like in vitro fertilization (IVF) involves creating an embryo in a laboratory and then transferring the embryo into a female's uterus. Within the umbrella of advanced fertility treatments, infertile individuals have the option to use donated eggs or sperm to create healthy embryos. For some individuals, using donated genetic material is the only viable treatment for infertility.

High-Risk Pregnancy

Any pregnancy in which there are increased health risks for the pregnant person, the developing fetus, or both is known as a **high-risk pregnancy**. Just as the incidence of infertility has increased in the United States, so has the risk of having a high-risk pregnancy. Approximately 50,000 people in the United States experience severe pregnancy complications, and the risk of complications is higher among the Black population (Hawkins & Baum, 2023).

There are several factors that contribute to the increased incidence of high-risk pregnancies. The first is delayed childbearing or advanced age of the pregnant person. People over the age of 35 years who are pregnant are considered at advanced age and are more likely to have complications compared to those under 35 years. Common complications for pregnancies in persons with advanced age include early pregnancy loss, a fetus with chromosomal abnormalities, and gestational diabetes.

Young age, being less than age 17 years, also contributes to an increased risk of having a high-risk pregnancy. People under the age of 17 years are more likely to have anemia, are less likely to receive prenatal care, and are more likely to have untreated STIs (Collier & Molina, 2019).

In addition to age, several other factors contribute to an increased risk of high-risk pregnancy, including the following (Cleveland Clinic, 2021):

- autoimmune disease
- diabetes
- fibroids
- high blood pressure
- HIV
- kidney disease
- unhealthy body mass index
- thyroid disease
- depression and other mental health disorders

PATIENT CONVERSATIONS

What if Your Patient Appears Scared about a Prenatal Diagnosis?

Scenario: Nurse enters the patient's exam room to provide prenatal education and finds the patient and her husband huddled in the corner whispering to each other. Both the patient and her husband appear to be upset and anxious.

Nurse: Hi, my name is Samantha. I'm going to be your primary nurse at the clinic. Do you mind verifying your name, date of birth, and the first day of your last menstrual period?

Patient: Hi, Samantha. I'm Beth, and this is my husband, Jerry. My last name is Gonzalez-Smith, and the first date of my last period was February 4.

Nurse: Great. Thanks, Beth. Okay, so if your last period started February 4, that would make you about five weeks pregnant. Congratulations!

Patient: Thanks. We came in right away because I've had a few miscarriages, and I'm so scared something will go wrong.

Nurse: I'm so sorry you've lost other pregnancies. Can you tell me more about that? How many miscarriages have you had? About how many weeks into the pregnancies do you miscarry?

Patient: I've had four miscarriages in the past three years. All the miscarriages were before I was nine weeks pregnant. It seems like I would take a home pregnancy test, get excited, and then a week or two later, start bleeding.

Nurse: That must be really tough for you and your husband. Have you had any genetic testing or had a prenatal workup to try and figure out a cause?

Patient: No, we haven't had health insurance, so I hated to go to the doctor and spend money if it wasn't an emergency. I would just stay home when I had a miscarriage. I didn't think I needed to go to the doctor because it felt like a heavy period. I just heard about your clinic that offers care for the uninsured.

Nurse: I see. I'm glad you found us. When we finish up today's appointment, I'll set you up with the clinical social worker to see if there is an insurance exchange program that you would qualify for. I'm not sure what the income requirements are, but the social worker can help with all of that. To start with, I'm going to give you some health history forms to fill out. Please fill them out as accurately as you can, and I'll be back in a few minutes to talk about the next steps.

Patient: Thanks.

Nurse: Okay, looking over your forms, it looks like you have a history of hypothyroidism. Are you currently taking your medication?

Patient: No, I stopped taking the medication about five years ago. I felt better, and it was annoying to have to go and get my labs checked.

Nurse: I understand. I'm not sure why you've had multiple miscarriages, but having untreated thyroid disease can lead to miscarriages. To start with, I'd like to get a full set of screening labs that include thyroid function, coagulation studies, and various infectious studies. Women have miscarriages for a lot of different reasons. I'm not saying thyroid disease caused your miscarriages; I'm just saying that is one possibility. We're going to work with you and get to the root cause of your fertility problems.

Patient: Okay. I really appreciate it. We've wanted a child for a few years now, and we've been so scared that it would never happen.

Nurse: It sounds like this has been a bumpy road for both of you. A lot of couples blame themselves for pregnancy problems. I want to make sure you both know this isn't your fault. There is almost always an identifiable medical cause that we can treat. I'm going to ask the nurse practitioner to sign the lab requisition forms so that you can get started on the blood work ASAP. Once the results are back, we'll have you come back to the clinic to discuss the next steps. In the meantime, if you have any unusual vaginal bleeding, vaginal discharge, fever, or any other symptoms you're concerned about, please call us. During clinic hours, there is a triage nurse, and after hours there is a phone service that can page the on-call provider. We're always available.

Patient: Thank you so much. I'm so glad we found this clinic.

Prenatal Malnutrition

Women have increased nutritional needs before and during pregnancy and while breastfeeding. Maternal prepregnancy weight has a direct link to birth outcomes. Women with lower weight are more likely to give birth to low-birth-weight babies, and women with higher weight are more likely to give birth to large-for-gestational-age infants. Being of a higher weight also places women at risk for gestational diabetes.

During pregnancy and breastfeeding, women need to have access to diets high in fruits and vegetables, dairy, and protein. From the second trimester until women are done breastfeeding, they need approximately 300 extra calories per day to support their energy needs. In addition to increased calories, specific nutrients are vital during pregnancy. Prenatal diets with insufficient iodine, iron, folate, calcium, and zinc can lead to maternal anemia, preeclampsia,

hemorrhage, and maternal death. Inadequate maternal nutrition can also lead to low birth weight, developmental delays, and even stillbirth (United Nations International Children's Emergency Fund [UNICEF], 2023).

LINK TO LEARNING

Some dietary guidelines to follow during pregnancy (https://openstax.org/r/77dietpregnt) are provided by the American College of Obstetricians and Gynecologists.

Neonate Health Risks

Neonatal patients face a unique set of health risks. They are one of the most at-risk populations because they are completely dependent on their caregivers, have an immature immunity system, and are physically immature, making them more prone to trauma. The categories of health risks that are specific to this age group are increased risk of infection, birth trauma, congenital malformations, and in utero exposure.

LIFE-STAGE CONTEXT

Risk for Infection in the Newborn Period

During the first twenty-eight days of a newborn's life, the newborn is the most susceptible to infection. Neonatal sepsis refers to an infection in the bloodstream of an infant younger than 28 days old. Infants can contract an infection either from the birth process or via the transmission of pathogens from the environment. Neonatal sepsis presents differently than sepsis in other age groups. Common symptoms of neonatal sepsis include irritability, poor feeding, lethargy, and temperature instability, either hypothermia or hyperthermia (Singh et al., 2022). Neonates who are ill-appearing need a full septic workup, including blood, urine, and cerebral spinal fluid cultures. Broad-spectrum antibiotics should be started after cultures are obtained and then discontinued after forty-eight hours if all cultures are negative. If any culture is positive, antibiotics should be narrowed to treat the identified pathogen. To minimize the risk of newborn sepsis, parents should be advised to limit visitors for the first twenty-eight days. Also, they should avoid giving their newborn an antipyretic, like Tylenol, to prevent masking a fever. Any fever in a newborn must be reported to a healthcare provider for further evaluation (Fleiss et al., 2023).

Birth Trauma

Birth trauma can be a result of maternal complications, fetal abnormalities, or external forces. The presentation of birth trauma in a newborn depends on the type and severity of injury sustained. The most common sites for birth trauma are the head, neck, and shoulders. Head trauma includes superficial lesions, extracranial and intracranial hemorrhage, and skull fractures. In severe cases, head trauma during birth can lead to permanent brain damage or cerebral palsy. Brachial plexus nerve injuries are the most common nerve birth trauma related to the neck and shoulders. They occur in 2.5 per 1,000 live births and are the result of stretching of the cervical nerve roots during the birth process (Dumpa & Kamity, 2023). These injuries are usually unilateral, and severity ranges from upper arm weakness to total arm paralysis. Most cases of brachial plexus nerve injuries can be treated with physical therapy. Rarely, infants have permanent nerve damage (Dumpa & Kamity, 2023).

Congenital Malformations

Approximately 3 to 4 percent of infants born in the United States each year have a **congenital malformation**, otherwise known as a birth defect (Boston Children's Hospital, 2023). A congenital malformation is any health problem or physical abnormality that is present at birth. The most common types of congenital malformations are heart defects, cleft lip/palate, Down syndrome, and spina bifida. Congenital heart defects encompass a wide range of problems that affect how blood flows through the heart and how blood exits the heart to both the body and the lungs. Cleft lip/palate is incomplete closure of the palate, or the roof of the mouth, and the upper lip. Down syndrome, also known as trisomy 21, is a chromosomal abnormality that causes intellectual developmental disorder and can be associated with problems in the gastrointestinal, cardiac, and endocrine systems. Spina bifida is when a section of the spinal column does not form normally, leaving a section of the spinal cord and the nerves exposed. Congenital malformations can be the result of a genetic defect or in utero exposure to a teratogen, or they can have

an unknown cause (Boston Children's Hospital, 2023).

Exposure In Utero

Fetal exposure to medications, alcohol, illicit drugs, environmental toxins, and certain infections can all cause birth defects. The fetus is at greatest risk for congenital malformations secondary to uterine exposure during the first ten weeks of pregnancy. During this time frame, all the major organ systems and the basic physical structure of the fetus are developing. After ten weeks' gestation, the risk of in utero exposure to teratogens declines because the fetus is growing larger but not undergoing cellular differentiation. There are specific infections, known as the TORCH infections, that are associated with birth defects. Not all infections cause birth defects. However, the TORCH infections have a high probability of causing pregnancy complications. TORCH stands for toxoplasmosis, other (syphilis, hepatitis B), rubella, cytomegalovirus, and herpes simplex (Jaan & Rajnik, 2021).

Infant Health Risks

Infancy can be a particularly stressful time for parents. Infants are unable to verbally communicate their needs, and parents often feel like their baby is always crying or needing something. The stress of new parenthood can be exacerbated if the infant has any health problems that demand more attention from the caregivers or parents. Specific health problems in this age group that require nursing attention are colic and failure to thrive (FTT). Infants are also at risk for child abuse, accidental injuries, and sudden infant death syndrome (SIDS). Nurses must be aware of all these health risks to provide parents with the appropriate education and support.

Colic

Colic is when a baby cries for a long period of time without an identifiable medical reason. It is most common in the first six weeks of life and usually goes away on its own within three to four months of life. Colic is common, affecting approximately one in four newborns.

Possible causes of colic include pain from gas, hunger, overfeeding, milk intolerance, and sensitivity to certain stimuli. Even though babies with colic look like they have abdominal pain, they eat well and gain weight normally. If parents can identify a trigger for colic, they should avoid that trigger. Otherwise, caring for an infant with colic revolves around trying to comfort the baby. Swaddling the baby in a blanket or holding the baby may help. Many parents use an infant carrier to hold their baby close to their body during colic episodes.

REAL RN STORIES

Frequent Use of RN Triage Line

Nurse: Kelly, RN
Clinical setting: Outpatient family practice clinic
Years in practice: 5
Facility location: Small town in Western Oregon

We primarily serve migrant farm workers and their families. This is a federally qualified health center that specializes in care for migrant farm workers, but other uninsured or underinsured members of the community also come here. We offer sliding-scale payments based on income and do not turn anyone away because of an inability to pay. I work in the nursing triage office of the clinic. We take phone calls from patients with questions and see patients in our triage office who walk into the clinic without an appointment.

One of the women who comes to the clinic, Maria Alba, has a 4-week-old infant. This is her first child, and she is very nervous. For the past week she has either called the clinic every day or come into the clinic without a scheduled appointment. She is very worried because her baby is crying a lot, and she does not know how to calm the baby down.

Based on the last interaction I had with her, I scheduled an appointment for her to see both the nurse practitioner and the social worker to see if we can provide her with the support that she needs. The nurse practitioner did a full examination and determined that the baby had no infectious problem or acute medical problem. She diagnosed the infant as having colic and tried to reassure Maria Alba that the baby was okay and was getting enough food and gaining weight well. The nurse practitioner offered advice on how to hold the baby in a way that might soothe her.

Because Maria Alba was exclusively breastfeeding her baby, the nurse practitioner recommended that she make changes to her diet to see if the baby would tolerate the breast milk better. Maria Alba agreed to remove all dairy from her diet and continue breastfeeding the baby on demand. We scheduled a follow-up weight check and nurse education session for Maria Alba and her baby in two days.

After the appointment with the nurse practitioner, Maria Alba met with the social worker to discuss what resources were available to her. The clinic has a new mom support group that meets once a week at lunchtime. The moms can bring their babies and meet other moms who have children who are approximately the same age. Lunch is provided by the clinic; a social worker and a nurse facilitate the meeting and support group. Maria Alba decided to join the support group.

At the end of the visit, Maria Alba verbalized understanding of infant distress warning signs and when she should call the clinic for guidance. She also agreed to try to return to the clinic in two days for another weight check and to meet with the nurse for education and reassurance.

Failure to Thrive

An inadequate weight gain or sudden weight loss is called **failure to thrive (FTT)**. It is defined as a weight consistently below the fifth percentile for age and sex. Failure to thrive can be either organic, or caused by a medical condition, or nonorganic, or the result of an inability to obtain food (Raab, 2023). Examples of organic FTT include the following (Smith et al., 2023):

- food allergy
- malabsorption
- inborn errors of metabolism
- excessive calorie expenditure secondary to hyperthyroidism, congenital heart disease, chronic lung disease, and chronic immunodeficiency

Examples of nonorganic FTT include the following (Smith et al., 2023):

- incorrect formula preparation
- breastfeeding problems
- neglect
- eating a fad diet
- behavior problems affecting eating

The diagnosis of FTT is made after a thorough evaluation of the child's diet, home environment, and risk factors for illness affecting calorie use. Common information that is obtained is a five-day diet food journal, information about food allergies, or food restrictions that are placed on the child. A social work consult to evaluate the home environment and parent-child interactions may also be warranted. If it is determined that the FTT is organic, additional medical tests will be ordered to determine the specific cause of growth failure. Possible diagnostic tests include serum lead and zinc levels, complete blood count to look for anemia, stool-reducing substances to evaluate for malabsorption, and ova and parasite tests to evaluate for parasitic infections (Smith et al., 2023).

Many cases of FTT are multifactorial and are best managed with a multidisciplinary team of physicians, nurses, dietitians, child life specialists, pediatric feeding specialists, and social workers or mental health professionals. The overall goal of FTT management is to reverse the cause of slow growth and provide enough calories to allow for catch-up growth. The specific treatment will depend on the underlying cause. Nonorganic FTT requires extensive parent teaching about correct food preparation and close follow-up. A social services referral may be warranted. Organic FTT management depends on the underlying medical condition. Children with FTT may be hospitalized for several weeks to determine the cause of growth failure and reverse the trend prior to discharge (Smith et al., 2023).

Accidental Injuries

Given the fact that infants do not walk, the mechanism of accidental injury in infants differs from older children and adults. Falls represent the greatest cause of accidental injury in this age group. Infants who accidentally fall should be evaluated by a healthcare provider. If there has been loss of consciousness, vomiting, or seizures, the infant will likely need a head computed tomography. Since subtle changes in consciousness in an infant may be hard to detect, it is important for parents to seek medical care if their infant has had an accidental fall or injury (Saltzman & Skube,

2021).

Sudden Infant Death Syndrome

The sudden death of an infant that does not have an identifiable cause, even after a full investigation, is known as **sudden infant death syndrome (SIDS)**. In the United States, SIDS is the third leading cause of death in infants under 1 year of age (Kochanek et al., 2024). In most cases, the infant appears healthy before the event, which usually occurs during sleep. Risk factors for SIDS include premature or low birth weight, overheating during sleep, allowing the baby to sleep with loose blankets or on a soft surface, and having a family history of SIDS. The primary prevention technique for SIDS is to encourage safe sleep practices. Infants should be placed on their back to sleep on a firm mattress with one fitted sheet (Figure 39.9). To minimize the risk of suffocation, stuffed animals, pillows, and blankets should not be in the crib. With parent education and public awareness, the incidence of SIDS has declined from 130 deaths per 100,000 live births in 1990 to 38.4 deaths per 100,000 live births in 2020 (CDC, 2023b).

FIGURE 39.9 Infants should be placed on their back on a firm mattress with one fitted sheet without stuffed animals, pillows, or blankets. (credit: "Safe sleep environment 2," by NICHD/Flickr, Public Domain)

Abuse or Neglect

Infants are fully dependent on their caregivers for survival, which makes them more susceptible to abuse and neglect than older children. Abuse and neglect in infancy can vary from accidental underfeeding to intentional physical abuse. Infants are at risk for **shaken baby syndrome**, a serious type of abuse that usually occurs when a parent or caregiver shakes a baby out of anger or frustration. Babies have weak neck muscles that are unable to fully support their large heads, allowing the head to move forward and backward quickly when shaken. This movement can cause serious brain injury, including subdural hematomas and subarachnoid hemorrhages. It can also cause other injuries like retinal hemorrhages, skull fractures, and fractures to other bones in the face (American Association of Neurological Surgeons, 2019).

Toddler Health Risks

Toddlers have specific health risks related to their stage of growth and development. Toddlers are becoming more mobile, and their diet is changing, which places them at risk for accidental injuries and malnutrition. They are also at

increased risk for child abuse because children typically potty train during this age range. Potty training can be stressful for parents, and they may lash out and abuse their children (Chung et al., 2019).

Accidental Injuries

The hallmark of the toddler years is exploration and rapid acceleration of gross motor skills. Children in this age group are on the go, which places them at increased risk for accidental injuries. According to the Centers for Disease Control and Prevention (CDC), the leading causes of accidental injuries in this age group are suffocation, drowning, poisoning, fires, and falls (CDC, 2021). Most accidental injuries are preventable. It is important to remind parents and caregivers about the importance of supervision in this age group. Although toddlers need to learn autonomy and independence, they still must be supervised at all times (CDC, 2021).

Malnutrition

Malnutrition is a health condition that results from consuming food that contains either insufficient or too many carbohydrates, vitamins, proteins, and/or minerals. Toddlers are at-risk of malnutrition because their feeding patterns change as they become less dependent on caregivers to feed them. A common cause of malnutrition in toddlers is excess cow's milk consumption. During this age range, children should drink between 2 and 2.5 cups (473 to 592 mL) of milk per day. Consuming an excess of that amount can lead to iron deficiency anemia. Milk is not an iron-rich food source, and children who drink milk in excess often do not eat enough other iron-rich foods. Also, milk inhibits the absorption of iron, further lending to iron deficiency anemia. Because it is filling, drinking an excess of milk can also hinder establishing healthy eating patterns.

LIFE-STAGE CONTEXT

Iron Deficiency Anemia

Iron deficiency anemia adversely impacts childhood development because it is associated with learning and memory problems and fatigue. Prevention of iron deficiency anemia is a crucial element of primary health in this age group. Parents should be instructed on including iron-rich food in their child's diet and minimizing consumption of milk. If parents choose to follow a restrictive or a fad diet, the pros and cons of this should be discussed in detail (Sundararajan & Rabe, 2021). If a family meets the income requirements for assistance, a referral to the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a good resource. The WIC program provides nutritional education and food supplements for families with children under the age of 5 years (U.S. Department of Agriculture [USDA], 2023).

Abuse or Neglect

Child abuse and neglect can happen in any age group and in families from all socioeconomic backgrounds. However, certain age groups and familial patterns place children at an increased risk of abuse or neglect. Family stresses, such as food insecurity, poverty, intimate partner violence, social isolation, parental mental health issues, or substance use disorder, are all factors that increase the likelihood of abuse and neglect (Pekarsky, 2022).

One of the developmental tasks of the toddler years that places this age group at particular risk of abuse is toilet training accidents. A common physical examination finding consistent with child abuse related to toilet training is an immersion burn. This refers to a burn of the buttocks and genital region. Parents and caregivers may immerse their child in hot water as punishment for soiling themselves and making themselves "dirty." A recent retrospective study of characteristics of abusive childhood burns found that burns to the buttocks or groin region are highly indicative of nonaccidental injury (Rosado et al., 2019).

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: How to File a Report to Child Protective Services if There Is Concern for Child Abuse

Disclaimer: Always follow agency's policy for documenting and reporting suspected child abuse or neglect.

Steps	Description/Rationale
Children may present with an isolated injury, like a broken arm, but on further review they have other injuries like bruises on other parts of their body. Always perform a complete assessment, even if the caregivers are insistent that just the injury needs to be addressed.	Children who experience abuse are frequently seen in the emergency department with injuries. Nurses need to be aware of the signs and symptoms of child abuse. One of the hallmarks of abuse is having injuries in various stages of healing, for example, various bruises of different colors.
Document all examination findings using a nonjudgmental tone.	Even if the nurse notices examination findings that are suspicious for abuse, they should not assume the child had been abused. Treating parents with respect builds rapport and trust. Use a respectful tone when talking with parents and when documenting in their child's medical chart. Once the patient has been evaluated and stabilized, the emergency room staff can move forward with filing a report with Child Protective Services (CPS).
File a report to CPS.	If a child comes into the emergency department with suspected child abuse, additional nursing staff will need to be assigned to the patient. The nurse who evaluates the patient needs to file a report with CPS. An additional nurse should be assigned to the patient to make sure the primary nurse has time to document the findings and file the report. Once the patient has been stabilized and the documentation is complete, the primary nurse should step away to contact CPS. Different states have different methods of filing a report. However, nurses are mandatory reporters in all fifty states.

Preschool Health Risks

Most children in the preschool age range are around other children their age in large groups. This grouping of children into groups could be preschool, Sunday school classes, and/or meeting with other children for playdates. As a result of this increased activity and being around other children, they have specific health risks, including accidental injuries and exposure to communicable disease. They are also becoming more autonomous in their eating habits, so they should have their food selection choices monitored to make sure they are eating a healthy, balanced diet.

Accidental Injuries

Unintentional injuries are a leading cause of serious harm and even death among preschool-age children (CDC, 2020). Motor vehicle accidents are a leading cause of unintentional injury, causing approximately 4,600 deaths per year (CDC, 2020). Research has shown that many childhood injuries occur in or around the home, which highlights the importance of anticipatory guidance for parents about making the home environment safe (CDC, 2020). Other common accidental injuries in this age group include suffocation, drowning, poisoning, fire/burn injuries, falls, cuts and puncture wounds, foreign bodies in a body orifice, and swimming injuries (CDC, 2020).

Risk for Obesity

In the United States, childhood obesity rates have tripled in the past decade. Historically, obesity in preschool-age children is rare. However, in the United States, approximately 15 percent of children aged 2 to 5 years have higher weight (Sanyaolu et al., 2019). A recent study indicates specific factors that place preschool-age children at greater risk for being of higher weight. The three factors identified were a high-calorie diet, increased screen time, and

decreased physical activity. The education level of parents was also a risk factor. Parents with a lower education level were more likely to have children with higher weight (Rosado et al., 2019).

Exposure to Communicable Diseases

As children enter the preschool years, it is more likely that they will spend time with large groups of children, either by attending preschool or by being in play groups. Children in this age group are also notorious for getting sick all the time, in part because they are frequently in large groups of children where germs can spread easily and because their immune systems have not been exposed to many pathogens, so they do not have much innate immunity. Common health risks in this age group include viral illnesses like the common cold, head lice, gastroenteritis, and hepatitis A. Parents can help stop the spread of infections by keeping their children up to date on their immunizations, encouraging handwashing after going to the bathroom and before eating, and in general, focusing on hygiene.

School-Aged Health Risks

As children start school, their level of independence from their parents changes rapidly. With each passing year, they are more responsible for feeding themselves, dressing themselves, and taking responsibility for their personal hygiene. There are specific health risks associated with this increased level of independence, such as poor food choices resulting in obesity and health conditions related to lack of personal hygiene. This is also a time in life when learning disabilities, if a child has one, are often diagnosed. Teachers and nurses need to be on the lookout for the specific health risks for school-age children so they can intervene and get the child the appropriate therapy or help.

Learning Disabilities

Children who have a difficult time learning could have medical problems like hearing or vision deficits or have a more complex problem like a learning disability. If children are having a hard time paying attention or staying organized, and/or they are having problems with reading or math, they should be evaluated for learning disabilities and have their vision and hearing checked. The most common learning disability is dyslexia. People with dyslexia have trouble making the connection between letters and sounds and recognizing words. Other signs of dyslexia include the following:

- delay in being able to speak
- difficult time understanding what others are saying
- difficulty expressing thoughts or feelings
- problems remembering numbers in a sequence
- trouble telling left from right
- poor spelling and reading skills

In addition to dyslexia, school-age children can present with other learning disabilities, such as dysgraphia or dyscalculia. Dysgraphia is a learning disability that affects the individual's ability to write. Dyscalculia is a learning disability that affects the child's ability to understand numbers and math. Children suspected of having a learning disability need to be referred to a specialist. Early diagnosis and treatment can minimize the impact the learning disability has on the child's academic performance (National Institutes of Health, 2018).

REAL RN STORIES

Frequent Visits to the School Nurse

Nurse: Emily, RN
Clinical setting: Elementary school
Years in practice: 15
Facility location: Public school in a suburb of Portland, Oregon

Our school has a diverse patient population. Many of our students come from a lower socioeconomic background and speak English as a second language. I see a wide variety of complaints in the school nursing office, everything from acute infections to children who have a stomachache because they have not had enough to eat.

Last semester, I noticed that a second-grade student, Julia, came to the nurse's office two to three times per week

with the complaint of a headache. She always came at the same time of day, around 2 p.m., and after about thirty minutes said she felt better and would go back to class. I thought this pattern of behavior was odd and did some investigating. It turns out that 2 p.m. was reading hour in Julia's classroom. The students would be called on to read a portion of their reading textbook out loud to the rest of the class.

Once I learned Julia consistently came to the nursing office during reading hour, I spoke with her teacher. The teacher reported that Julia understands written instructions but frequently gets distracted in class and does not finish her schoolwork. The teacher and I decided to organize a meeting with the parents to discuss the possibility that Julia might have a learning disorder and need additional resources.

During the meeting, we discussed the observations the teacher and I had with regard to Julia's behavior at school. The parents reported that at home she gets upset when she has to do homework and frequently says that she hates school. Based on the discussion, we moved forward with a full learning ability workup. The workup will include testing Julia's hearing and vision. If both of those are normal, her parents agreed to meet with a learning disability specialist for further evaluation.

Risk for Obesity

The incidence of obesity in school-age children has more than tripled since the 1970s. As of 2018 in the United States, one in five school-age children were of higher weight (CDC, 2022). There are multiple factors that contribute to the increase in obesity, including consumption of high-calorie foods, decreased activity level, short sleep duration, and experiencing trauma during childhood (CDC, 2022).

Having a comprehensive approach to obesity in the public school system may be an effective tool to decrease obesity rates. A comprehensive approach involves changing food items in the cafeteria, increasing physical activity during school hours, involving school nurses and after-school program professionals, and providing education to parents and caregivers.

Poor Hygiene Practices

The process by which a person cares for their health by cleaning and caring for their body is called **hygiene**. Starting from birth, parents are responsible for their child's hygiene. However, as children mature, they must acquire independent hygiene habits. In some families, caregivers do not have adequate knowledge to instruct children in adequate hygiene practices. Common areas where school-age children lack hygiene practices include teeth brushing and oral care, bathing, and wearing clean clothes. Children who come to school with evidence of poor hygiene should be referred to the school nurse or a social worker to evaluate for possible neglect at home and/or provide the family with additional education and resources (Pérez Pico et al., 2022).

Adolescent Health Risks

In the adolescent stage of development, teens are forming their personal identity that is unique from the family of origin. In this stage, peer groups are paramount to the adolescent's development. Adolescents tend to go along with the decisions of their peer group and focus on the opinions of their peers. During this stage, many adolescents experiment with drugs, alcohol, sex, learning to drive, and other risky behavior. Their bodies are also changing rapidly, which can lead to body image disturbances and eating disorders. All these life changes play into the specific health risks of the adolescent patient.

Risk-Prone Behaviors

Risk-taking behavior tends to be low in childhood, starts to increase around puberty, and peaks in late adolescence. Psychosocial research proposes that risk-prone behavior reflects a gap between an adolescent's biological and social maturity. Adolescents frequently underestimate risks while simultaneously believing that there is a greater potential benefit to risky behavior. On the other hand, adults tend to make decisions based on education and experiences. Adolescents lack the necessary experience to use that logic. As a result, they are more likely to use drugs or alcohol, have unprotected sex, and pursue relationships with people with violent tendencies (CDC, 2024).

Distress with Personal Identity

Identity formation is one of the principal tasks of adolescent development. During this age group, teens frequently try out different identities by making friends in different peer groups. A teen could be into playing soccer one year and obsessed with music the next. Adolescents tend to rely heavily on their peer group to help them form an

identity. If they are unable to find a close group of friends, identity formation can be difficult, which can lead to loneliness and a sense of despair (Lindekilde et al., 2018).

PATIENT CONVERSATIONS

What if Your Adolescent Patient Appears Anxious about Applying for College?

Scenario: Nurse walks into the exam room to talk to an 18-year-old patient who has come in for a sports physical prior to starting his senior year of high school. When the nurse asks open-ended questions about school and plans for the future, the teen gets anxious and looks at the floor. He acts like he doesn't want to discuss life after high school.

Nurse: Hi, my name is Rebecca. I'm one of the nurses at the clinic. I'm going to check your vital signs and ask a few questions before the doctor comes in to see you.

Patient: Hi, Rebecca. My name is Brandon.

Nurse: It's nice to meet you, Brandon. Can you confirm your full name and date of birth?

Patient: Sure, Brandon Harrison, January 14, 2006.

Nurse: Thanks. It looks like you play several sports: football, basketball, and tennis. Do you plan to continue sports in college next year?

Patient: Ummm, I'm not sure about next year.

Nurse: Okay. A lot of students like to get a fresh start after they finish high school. It's not unusual to want to try new things. Have you thought about what you'd like to do next year?

Patient: My dad wants me to go to his alma mater and major in business administration.

Nurse: I see. Business administration is a great major. It opens the door for a lot of different career options. Having said that, there are several different majors available to you. Have you thought of studying anything else?

Patient: I haven't thought about it. To be honest, I'm not sure I'm ready to go to college. [Looks anxious and stares at the floor.] Please don't tell my dad!

Nurse: Don't worry, Brandon. This conversation is confidential. I won't discuss anything that you tell me with your parents. If you're not sure about starting college next year, have you considered taking a gap year?

Patient: What's a gap year?

Nurse: It's when students take a break between high school and college. They might get an entry-level job in an industry they're interested in, volunteer, travel, or just work full time while they consider their options.

Patient: Interesting. I'd like that, but I don't think my parents would agree. They talked about college as if it's my destiny. I don't think they've considered the possibility that I might want to do something different.

Nurse: Well, maybe you should have a talk with them. College isn't for everyone, and if you take a break for a few months and decide you really want to go, you can apply at that time. Students tend to do better at their university studies if they're focused and driven to be there. If you want some tips on how to bring up this topic with your parents, let me know. I'm happy to help in any way I can.

Patient: Thanks. I'm going to think about what I want. Taking some time off might make sense. I'm not sure what I want to study in college. Maybe I'll get a job and save up some money while I explore my options.

Risk for Self-Harm

The risk for self-harm is high in adolescents. Reported self-harm prevalence rates in this age group range from 17 to 60 percent (Brown & Plener, 2017). The high rate of self-harm in adolescents is likely multifactorial. Adolescents feel emotionally liable in response to the surging hormones of puberty. At the same time, they are struggling with an identity crisis as they attempt to form a personal identity that is unique from their family of origin. Known risk factors

for adolescent self-harm behavior include female gender, being an only child, poor school performance, harsh parenting styles, and poor mental health (Brown & Plener, 2017).

Substance Use

Alcohol or drug use, also **substance use**, is common in U.S. adolescents. According to a recent government survey, 52 percent of twelfth graders reported using alcohol within the last twelve months (Miech et al., 2023). In addition, 41 percent report having the opportunity to use any illicit drugs (Miech et al., 2023). Tobacco use in any form (smoking, smokeless, and e-cigarettes) is an additional concern for substance use and abuse in this population. The ease of availability of alcohol and illicit drugs combined with the risk-taking behavior associated with the adolescent period makes substance use a significant problem. Teens who misuse either alcohol or illicit drugs are more likely to develop a substance use disorder later in life (Miech et al., 2023).

Sexually Transmitted Infections

Although STIs affect people in all age groups, the burden is particularly high in adolescents. According to statistics from the CDC, nearly half of all STIs in the United States occur in individuals ages 15 to 24 years (CDC, 2024). The risk-taking behavior that is common among adolescents and young adults contributes to this high rate of infection. Many adolescents underestimate the risk of having unprotected sex and/or believe that they are invincible and unlikely to get an infection (CDC, 2024).

Pregnancy

Teen pregnancy and childbearing are associated with economic hardship in both the short term and in the long term. One of the main indicators of this is high school graduation rates. High school graduation rates are significantly lower among teen moms. According to the CDC, only 50 percent of teen moms receive a high school diploma by age 22 years, whereas approximately 90 percent of other adolescent females graduate from high school (Youth.gov, n.d.). Teen fathers are also 25 percent less likely to graduate from high school (Youth.gov, n.d.). Teenage pregnancy is also associated with having more health problems, being incarcerated, and being unemployed (Youth.gov, n.d.). The good news is the rate of teenage pregnancy dropped by 78 percent between 1991 and 2021 (CDC, 2023a). The drop in pregnancy rates is believed to be associated with education and better access to birth control.

39.4 The Nurse's Role in Preventing Illness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify nursing considerations for the conception and prenatal stage
- Recognize nursing considerations for the neonate stage
- Describe nursing considerations for the infant stage
- Recall nursing considerations for the toddler stage
- Understand nursing considerations for the preschool stage
- Analyze nursing considerations for the school-age stage
- Verbalize nursing considerations for the adolescent stage

Nursing considerations change throughout the life span. The specific considerations for each age group depend on the physical, cognitive, and emotional needs of patients during that point in their development. In addition to evaluating these factors, to provide the best nursing care, nurses need to consider the health risks associated with each group. By doing so, nurses are able to provide holistic, age-appropriate nursing care.

Nursing Considerations for the Conception and Prenatal Stage

Regardless of whether women of childbearing age want to start a family or not, they need nursing support and education. Nurses play a crucial role in providing both birth control education and prenatal education. In many family planning and prenatal clinics, the nurses are the primary point of contact for patients receiving services. They triage phone calls from patients with questions or concerns, help manage patients' prescription medication, and make sure patients understand their plan of care.

Assist with Family Planning

Although a midlevel provider, physician assistant, nurse practitioner, or physician is required to write a prescription for contraception, registered nurses play a key role in instructing patients how to use contraception. Most outpatient

clinics that provide family planning services have nurses who provide one-on-one instruction on how contraception works, what to do if a dose of contraception is missed, and under what circumstances patients should use a backup contraception method. Nurses are also the ones who frequently provide education on different contraception options and manage the after-hours phone line for patients who have questions when the clinic is closed.

Prenatal Education

Nursing prenatal education is aimed at helping expecting parents learn and implement healthy habits during pregnancy. The habits focus on the nutritional needs of the pregnant person and developing fetus, information on substances to avoid during pregnancy, and guidance on exercise and sleep requirements during pregnancy. The most important nutritional advice is to emphasize the importance of taking adequate folic acid throughout pregnancy. Pregnant persons also need to be reminded that alcohol, cigarettes, and illicit drugs will potentially harm the developing fetus. Most pregnant persons can continue their prepregnancy exercise routine, but a new exercise regimen should not be started during pregnancy. Pregnant persons should expect to be tired during pregnancy, particularly in the first trimester.

The nurse also educates expecting parents about pregnancy warning signs and when to seek medical attention during pregnancy. The pregnant person should be taught to seek medical attention for vaginal bleeding, persistent headaches, or unusual swelling in the hands or face. Vaginal bleeding is a sign of miscarriage, while persistent headaches and unusual swelling are associated with preeclampsia.

Nursing Considerations for the Neonate Stage

Newborns and their parents need a lot of support and nursing care. In the neonatal stage, parents bond with the newborn through feeding and providing basic care. The feeding and bonding process can be stressful for both the neonate and the parents. Many new parents have difficulty breastfeeding or are stressed out by the responsibility of caring for a newborn. One of the primary roles of a nurse in this developmental stage is to facilitate bonding and ensure that the newborn is getting enough nutrition.

Facilitate Bonding

When a caregiver and a baby feel a strong attachment to each other, this is known as **bonding**. Many parents feel love, joy, and a sense of protection for their baby. However, this bond does not happen instantly for all parents. For many parents, bonding is a process. It can take days, weeks, or longer to fully bond with a newborn. This is especially true if the newborn is admitted to the hospital after birth or is adopted. Parents need to be supported through this process and be reassured that they are not bad parents if bonding takes longer than expected.

REAL RN STORIES

Unexpected Newborn Intensive Care Unit Admission

Nurse: Ripal, RN
Clinical setting: Newborn intensive care unit (NICU)
Years in practice: 5
Facility location: Large teaching hospital in Colorado

We are the largest level 1 NICU in the state. We serve patients from all over the Rocky Mountain region. Our patient population comes from all socioeconomic backgrounds. Our hospital has contracts with Medicare and Medicaid and with multiple private insurance companies.

One night shift, a newborn was transferred via Flight for Life from a town in Western Colorado. The neonate was born with a severe congenital heart defect that was not diagnosed in utero. The parents were devastated by the diagnosis and completely unprepared for a NICU admission.

Upon assessment, the newborn was intubated, sedated, and had both arterial and venous umbilical lines in place through which he was receiving sedation, antibiotics, and a continuous prostaglandin E infusion. The infant was stabilized prior to transfer, but the plan was for him to remain intubated and sedated until he could have neonatal heart surgery within the next seventy-two hours. The parents were at the bedside in a complete state of shock. They were both crying and did not want to look at their infant son.

After talking with the parents, I learned that they had tried for several years to have a child and were so excited when they found out they were going to be parents. The mother had received prenatal care and could not believe that her child could have an undiagnosed congenital heart defect.

I provided emotional support for both parents and discussed ways that they could bond with their child while he was in the NICU. We discussed skin-to-skin contact, and I encouraged the mom to pump breast milk. We reviewed the breast milk storage and administration policy in our unit. With the help of our social worker, we developed a parent visitation schedule that worked with the newborn's nursing care so that the parents could be present at the bedside and have as much contact with their child as possible.

In addition to providing information on parent-child interactions while in the NICU, I encouraged the parents to take time for themselves. There is no right or wrong way to be a NICU parent. Some parents want to be at the bedside all the time, while others find the unit stressful and want to stay away. Regardless of where parents fall within the spectrum, the newborn-parent bond will happen. I reminded the parents that the NICU staff is here to take care of their baby and support them.

The parents were still teary eyed at the end of the admission but were able to focus on the steps that would take place over the next couple of days. Both parents chose to leave the hospital, spend the night at a nearby hotel, and return the next day to meet with the medical team. I advised them to get some rest and reassured them that we would call with any changes in their child's clinical status.

Nutritional Support

One of the primary developmental tasks during the newborn period is to establish a feeding schedule. Not only does feeding provide a bonding opportunity, but it is also the sole source of nutrition for the infant. A preterm neonate needs 100 to 150 kcal/kg per day of nutrition, whereas a term neonate needs 100 to 120 kcal/kg per day (Patel & Rouster, 2023). If infants are breastfed, parents should be instructed that newborns feed approximately every two hours. Both breastfed infants and formula-fed newborns should have frequent weight checks to ensure that they are getting enough nutrition. Newborns should regain their birth weight by 2 weeks of age and then gain an average of 1.1 oz (30 g) per day (Desiraju, 2018).

Whether parents choose to breastfeed or bottle feed, nurses should provide guidance on best feeding practices. People who have given birth who breastfeed should be advised that breastfeeding can be a challenge. For many, it can take time for the milk to come in, and not all newborns learn to latch, suck, and swallow easily. The first three days after birth, the breast makes a thick, yellowish liquid called **colostrum**, a nutrient-dense liquid that also helps bolster the newborn's immune system. The person who gave birth may feel like their breasts are hard, full, and warm as the colostrum ends and the breast milk starts to come in. During this time, the person who gave birth may need to breastfeed more frequently. If parents have any concerns about breastfeeding, they should speak with a lactation consultant.

LINK TO LEARNING

Review the American Academy of Pediatrics policy statement on breastfeeding (https://openstax.org/r/77AAPbreast) for more information on the benefits of breast milk.

If parents choose to bottle feed, they should receive instructions on selecting an infant formula, safely storing and preparing formula, and determining how much and how often the baby should feed. The U.S. Food and Drug Administration (FDA) regulates commercial formulas to ensure they meet the minimum nutritional requirements. Most infants tolerate standard milk-based formulas. Infants should not be switched to a specialty formula without speaking to their pediatrician. It is also not recommended that parents use homemade formula. Parents need to be advised to follow the instructions to prepare the formula and to avoid leaving the formula at room temperature for more than two hours. Formula can be safely stored in the refrigerator for up to twenty-four hours.

Newborns have small stomachs and feel full after 1 to 2 oz (28 to 57 g) of formula. Parents should start by offering 1 to 2 oz (28 to 57 g) every two to three hours. Most formula-fed infants feed eight to twelve times in a twenty-four-hour period. If the baby shows signs of hunger, offer them more formula. However, infants who have distended

abdomens or frequently spit up may be overfed. It is important that parents consistently feed their baby when they show signs of hunger but avoid overfeeding (CDC, 2023d).

Health Promotion Screenings

There are several routine health promotion screenings for newborns. Newborns undergo a blood test to screen for genetic, endocrine, and metabolic disorders. Each state determines which disorders are included on their newborn screen. However, **phenylketonuria (PKU)**, a rare metabolic disorder that can cause intellectual disabilities but is highly treatable with diet modification, is tested for in all fifty states. Other routine newborn health screenings include hearing screens, vision screens, and congenital heart defect screens.

Nursing Considerations for the Infant Stage

As infants grow and develop, their nutritional needs change. If possible, it is recommended that infants be exclusively breastfed for the first six months. However, for various reasons, many mothers are unable to exclusively breastfeed. In this case, formula is a viable alternative to breast milk. No parent should be made to feel guilty for not breastfeeding their child. It is also important to note that breastfed infants may require vitamin D and iron supplements. Most pediatricians recommend giving 400 IU of vitamin D daily to exclusively breastfed infants (CDC, 2023a). Full-term infants have approximately six months of iron stores from birth. If infants are predominately breastfed after six months, they may need iron supplements. Parents should discuss this with their pediatrician. Standard formulas are fortified with both vitamin D and iron, so formula-fed infants should not require nutritional supplements.

According to the American Academy of Pediatrics (AAP), solid food should not be introduced until infants are at least six months of age (AAP, 2021). The first food that parents should introduce is rice cereal because it has a low allergy profile. New foods should be introduced one week apart to make it easier to determine whether there is a food sensitivity or allergy. Sweet foods, like pureed fruit, should be used in moderation so that infants develop a taste for nonsweet food. Although infants can start to eat solid food at around six months, breast milk or formula should be their primary source of nutrition until age 1 year. At age 1 year, children can transition from breast milk or formula to cow's milk. Cow's milk should not be introduced before age 1 year because it does not provide balanced nutrition and may not be tolerated by the infant (CDC, 2023e).

Vaccinations

Infants are at-risk for infections because their immune system is not mature. Giving recommended immunizations throughout infancy and childhood is the best way to protect infants from infection. Most infants receive their first hepatitis B immunization prior to leaving the hospital after birth. After that, multiple immunizations are scheduled at 2 months, 4 months, 6 months, and 12 months of age. Nurses should encourage parents to stay up to date on their child's vaccine schedule. Immunizing children against the most common diseases helps keep them healthy and safe (CDC, 2023b).

LINK TO LEARNING

Some parents may be hesitant to vaccinate their children. Nurses need to be knowledgeable about the risks and benefits of immunization to counter vaccine information (https://openstax.org/r/77vaccineinfo) and how to communicate with parents about vaccines.

Nursing Considerations for the Toddler Stage

Parents of toddlers need a significant amount of anticipatory guidance to help them adapt to the toddler years. During the toddler stage, children are becoming more independent but still require constant supervision. Finding a balance between fostering autonomy and providing a safe and secure environment can be challenging for many parents. It is also important to remind parents of the importance of language development. During this stage, children should be exposed to language, through conversation, reading books, and playing games, to help them develop their language skills.

Environmental Safety

The gross motor skills of toddlers develop rapidly, and toddlers are on the go. With the increase in their mobility

comes concerns with protecting them from harm. There are specific tasks that parents should do to protect their toddlers (Michigan Government, 2023):

- Place plug covers over electric outlets.
- Block stairs with a gate.
- Lock doors to hazardous areas like the garage or basement.
- Lock up medicines and household cleaners.
- Keep sharp objects in a safe place.
- Check toys for loose parts.

Supervised Independence

One of the primary developmental goals of toddlers is to gain a sense of independence. As they mature, children become less dependent on their parents. Toddlers love doing things for themselves and are very egocentric. Parents need to let toddlers try new things and master new skills, but they still need constant supervision. Toddlers do not have the cognitive ability to think through what might happen. If they see something up high that they want, they will climb up to try to get it without any regard to the possibility of falling. Parents need to give toddlers the space to explore their environment while constantly keeping an eye on them so they do not get hurt.

Language Development

During the first three years of life, the brain is still developing. During this time frame, children learn language easily. By age 2 years, children should have a fifty-word vocabulary and should use two-word sentences. As they continue to develop, their vocabulary grows, and they begin using plural words, saying things in the past tense, and adding inflection to questions. By age 3 years, their speech is usually understood well by their immediate family and caregivers. If parents are worried about a speech delay, they should speak to their pediatrician. Some children are slow talkers but catch up with their peers, while others may have a developmental delay or a hearing problem that makes it harder for them to learn to speak (NIH, 2022).

Nursing Considerations for the Preschool Stage

The preschool developmental stage is the period when many children start to spend a significant amount of time outside of their home. Nursing considerations for this age group include getting them school-ready, fostering independence, and providing parents with anticipatory guidance about appropriate levels of supervision. As children gain independence, it is important to remember the importance of dietary choices. Providing children with multiple healthy food options will promote good nutrition and weight throughout their childhood.

Healthy Eating Habits

Childhood obesity is a serious problem in the United States. Children with higher weight are more likely to become adults with higher weight and to struggle with chronic health conditions related to obesity. One of the best ways to prevent obesity is to establish healthy eating habits early in life. There are several techniques to help preschool children develop healthy habits to last a lifetime (Society of Behavioral Medicine, 2023):

- Stock the house with healthy food and teach by example. Children often develop the same eating habits as their parents.
- Encourage autonomy and healthy choices by offering two to three healthy food options each day.
- Focus on the health benefits of nutritious foods (e.g., “Eating veggies helps you grow big and strong”).
- No foods should be forbidden. Instead, encourage moderation, and set limits on unhealthy food.

Promoting Early Learning

Attending preschool is a great way to get children ready to start school. Children who attend preschool learn how to function in a group setting, follow rules, and learn basic academic skills. There are also specific parenting techniques that engage preschool children and help them get the most out of their preschool experience. Nurses should teach parents to talk to their children about their school experiences. The parents should ask questions, such as “What did you do in school today?” or “What is your favorite part of class?” It is important to give children time to respond and to add new vocabulary to the conversation. Parents can also promote early learning by reading to their children at home and reinforcing concepts that they learn at school (American Speech-Language-Hearing Association, 2023).

Environmental Safety

More than one-third of child injuries and deaths happen at home. Teaching parents how to make the home environment safe is crucial for keeping kids safe. Preschool children need less supervision than toddlers but should still be kept out of areas like the basement or the garage. Also, it is important to keep medicine out of the reach of children. Children in this age group should be supervised when playing around water or playing sports that could result in injury. Families that have swimming pools should use a pool fence with a gate that locks (National Safety Council, 2023).

Nursing Considerations for the School-Age Stage

School-age children face a unique set of developmental tasks that require the attention of nurses. During the school-age years, children develop study habits, form friendships, and build a foundation for life skills that will serve them in adolescence and beyond. However, there are challenges in the school environment that can make it difficult for some students to accomplish these goals. Nurses need to be aware of self-esteem and bullying issues and be able to provide parents with anticipatory guidance regarding these topics.

Positive Self-Esteem

One's self-esteem, or the feeling of self-appreciation, is an important building block in childhood development. Children with high self-esteem are more likely to do well in school, participate in school activities, and be willing to try new things. Encouraging self-esteem in school-age children will help them adapt to changes in adolescence and later in adult life. The home environment contributes profoundly to their self-esteem. A specific step to develop positive self-esteem is to give positive reinforcement. Also, children should be encouraged to try different extracurricular activities to develop a sense of what they are good at and what they like.

Anticipatory Guidance

To build healthy parent-child relationships, parents need practical strategies to meet their children's developmental needs and address the stressors children face at school. Nurses play a crucial role in advising parents and providing concrete solutions to conflicts that could affect their family. In this age group, many children have access to smartphones and computers. Cyberbullying is becoming more prevalent, and schools and school nurses need effective strategies to educate parents about the risks children may face and ways to help protect children with parental controls and open conversation.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: What to Do if a Child Is Receiving Online Threats

Disclaimer: Always follow the school's policies.

Steps	Description/Rationale
Meet with the parents and the child.	The first step in addressing cyberbullying is to listen to the child who is being bullied without judgment. Gather information about how long the bullying has been going on, and save any documentation the child has with regards to the bullying.
Contact the school principal or administrator in charge of discipline.	The school administrator in charge of discipline should provide parents with the school policy on bullying. Based on the school policy, develop a plan of action.

Steps	Description/Rationale
Implement the plan to stop the bullying.	The school should provide specific details about the disciplinary action that will be taken and have a follow-up plan. If parents are unsatisfied with the school's response, they should consider contacting the school's superintendent.
Consider contacting law enforcement.	Physical threats of harm should be reported to the police immediately. Laws vary by state, but many states have cyberbullying or computer trespassing laws. When in doubt, contact the local police department.

School Violence

School violence is violence that happens at school. It disrupts learning and has negative consequences for the students and the community at large. Examples of school violence include the following:

- bullying or cyberbullying
- fighting
- weapon use
- sexual violence
- gang violence

School violence is a serious social problem in the United States. According to the National Center for Education Statistics (NCES), approximately twenty students per 1,000 experience nonfatal school violence every year (NCES, 2023). There are specific steps schools can take to reduce school violence (National Associations of School Psychologists, 2023):

- Teach about the importance of resisting peer pressure.
- Encourage students to report potential school violence.
- Create an anonymous reporting system that students, teachers, and parents can use.

Nursing Considerations for the Adolescent Stage

The adolescent years can be tumultuous for both parents and teenagers. Nurses play a crucial role in helping families navigate the process of finishing high school and forming an adult identity. Adolescents may need counseling to help manage the emotions and stress associated with high school. The best approach is to provide factual education and engage with adolescents using open-ended questions that allow them to express their feelings.

Support Learning Needs

Adolescence can be a challenging time for parents and teachers. In this age group, students are caught between two worlds—childhood and adulthood. They strive for independence yet yearn to be part of a clique. During this development time, it can be difficult to support adolescents' learning needs. The best approach is to focus on their desire to form bonds with peers. School lessons should be structured so that teens can work in groups. Also, teachers should try and form a connection with students. For adolescents who are homeschooled, encourage participation in peer activities in the community. For example, adolescents could participate in social organizations like the 4-H club or in community sports programs. Although adolescents are trying to establish their own identity, they still value the opinion of adults, even if they do not always act like they do. Having teachers and coaches demonstrate a genuine interest in adolescents' unique talents will go a long way in supporting their academic success (Association for Supervision and Curriculum Development, 2004).

Healthy Eating Habits

Encouraging healthy eating habits is important during adolescence. Most adolescents in the United States eat a diet that is low in fruits, vegetables, and calcium-rich foods and high in fat. Skipping meals is also a common concern, especially among teenage girls. Also, many teens experiment with fad diets or become vegetarians. Various factors impact the dietary choices that teens make. Peer group association and familial cultural norms are the two biggest factors. Addressing dietary concerns is best approached by having an open mind about the teen's choices and

providing education about what nutrients might be missing. Special screening and education should be tailored toward this population regarding eating disorders. Also, healthcare providers should screen adolescents for anemia or other potential dietary deficiencies that are identified through their history and physical (Daly et al., 2022).

Behavioral Safety

Adolescents' interests in new experiences and their drive for independence are natural and help them mature. By pushing boundaries, teens learn to become self-reliant. However, pushing boundaries can lead to risk-taking behavior. Parents, teachers, and nurses need to help teens manage risks that threaten their behavioral safety. Although adolescents are maturing rapidly, they still need adult supervision. Parents should be aware of what their teens are doing and with whom. If the teen breaks the rules, there should be consequences. Also, parents should have high expectations for their teens, and they should openly discuss the importance of safety.

Support Mental Health

The number of adolescents reporting mental health issues is increasing. According to the CDC, in 2021 42 percent of high school students felt persistently sad, and 22 percent seriously considered suicide (CDC, 2023d). Schools and school nurses play an important role in overcoming this crisis. Having support programs in place at school can help teens form connections with other students and teachers. Preventing social isolation is an important tool in supporting the mental health of teenagers (CDC, 2023d).

PATIENT CONVERSATIONS

What if Your Teenage Patient Appears Sad and Depressed?

Scenario: Nurse walks into the school nursing office and finds PW waiting to see her. PW is a sophomore in high school and recently transferred from a different school out of state. She frequently comes to the nurse's office with vague complaints about abdominal pain and requests permission to call her parents to take her home because she does not feel well enough to stay at school.

Nurse: Hi, PW. It's nice to see you again. Can I help you with something?

Patient: Hi, Nurse Sarah. I'm not feeling well. My stomach hurts, and I want to vomit. [After saying this, the patient looks away and wipes a tear from her eye.]

Nurse: I'm sorry you're not feeling well. Why don't you come into my office, and we can talk?

Patient: Okay, but what I really want is permission to go home.

Nurse: Well, I need to know a little bit more about what is going on before I call your parents. You seem sad. Is everything okay? Did something happen at school today?

Patient: No, nothing happened. I just hate this school. I don't have any friends here, and people aren't friendly. I feel like an outsider. I just want to go home and sleep on the couch.

Nurse: Changing schools can be really hard. When you started here, did the principal give you a student liaison?

Patient: What's a student liaison?

Nurse: It's the student who helps you figure out the ropes at school. They give you information about school clubs and activities and help you feel welcome at school. School liaisons sign up to be part of the program.

Patient: No, I've never heard about that program.

Nurse: Okay, I'm going to contact the principal and see if I can set it up for you. Now, let's talk about your stomachache. Do you have a fever? Any vomiting or diarrhea?

Patient: No fever, no vomiting or diarrhea. I just feel like I want to throw up.

Nurse: Okay. Let's sit here for a minute and talk about how things are going. I'd like you to drink some juice and eat a few crackers while you talk to me. If you're not feeling better when we're done talking, I'll call your parents.

Summary

39.1 Growth and Development Stages

Growth and development start at conception and continue through adolescence. During conception and the prenatal stage, the genetic makeup and the basic physical structure of the child are determined. Immediately after birth, in the neonatal stage, the child learns to bond with their caregiver and develop a sense of trust. As they continue to develop through infancy, children experience rapid physical growth. When children enter the toddler years, their physical growth starts to slow down, and they rapidly develop gross motor and language skills. The toddler years are also characterized by the child's need for autonomy. As children enter the preschool years, they develop more fine motor skills and start to learn how to function in a group setting. During the school-age period, children tend to form strong friendships and enjoy being active. Their growth continues at a slow, steady pace. Once children enter adolescence, they go through a growth spurt and develop sexual characteristics. This final stage of child development is characterized by the child establishing a unique identity separate from their family.

39.2 Theories Related to Growth and Development

There are three theories of growth and development that are frequently discussed in pediatric nursing: Freud, Erikson, and Havighurst. Freud's theory is referred to as a psychosexual theory. It examines human development through the lens of sexual desire. According to Freud, *sexual* is a general term that refers to any pleasurable action or thought. Freud's theory is sequential, meaning children pass through a series of stages based on their age. If there is not appropriate resolution of the conflict in each stage, the individual could develop psychosocial problems later in life. Erikson's theory is similar to Freud's theory in that it is based on a series of stages that each child passes through, and there is a conflict that must be resolved in each stage. Not resolving each conflict could result in an unhealthy or maladaptive personality. Havighurst's theory of development is also sequential but does not have a conflict in each stage that needs to be resolved. In Havighurst's theory, there are specific tasks that need to be completed in each age group. Successful completion of these tasks leads to a healthy, happy individual.

39.3 Health Risks for Each Stage

Health risks are different for different population groups. Health risk for women of childbearing age who are considering having a family revolve around the ability to get pregnant, stay pregnant, and have a healthy pregnancy. A woman's general state of health impacts her fertility, but there are other genetic and physiological factors that must be addressed if she has had a hard time conceiving. Once a woman is pregnant, she needs lots of education about appropriate diet and self-care activities during pregnancy.

In terms of the health risks for children, they change as children progress through infancy and childhood. Newborns are at-risk for complications from exposure to toxins in utero, birth trauma, and congenital malformations. Infants are completely dependent on their caregiver and are at risk for child abuse and neglect that could result in FTT or accidental injuries. They are also at risk for SIDS. Parents must be educated on appropriate sleeping conditions to help prevent this.

As children enter the toddler years, they gain independence and mobility. This increase in mobility places them at risk for accidental trauma. Also, their quest for independence can be very frustrating for parents. The typical personality of a toddler combined with the milestones of this age group, like toilet training, make them at-risk of child abuse. Sometimes parents get frustrated and lash out at their toddler. This age group is also at risk for malnutrition. This is especially true when they transition from breast milk or formula to cow's milk at age 1 year. Parents need to be educated about providing a well-balanced diet and limiting consumption of milk.

When children enter preschool, their health risks continue to change. Most children in this age group are frequently in large groups with other children, which places them at risk for accidents and exposure to communicable diseases. As they enter school, they may be exposed to bullying or school violence. Also, previously undiagnosed learning disabilities could surface. Finally, the adolescent years bring a lot of changes that affect teens' health risks. This age group struggles with identity formation and frequently relies on their peer group for guidance and support. This can lead to risk-taking behavior, mental health issues, and problems adapting to a new adult role.

39.4 The Nurse's Role in Preventing Illness

Nursing considerations for the conception/prenatal stage, the neonate stage, and the infant stage focus on education related to family planning, pregnancy, and care of the neonate and infant. These stages are the foundation of development from infancy and beyond. Family planning education helps a person time when and if they have children. Prenatal education focuses on having a healthy pregnancy and minimizing the risk of congenital malformations and birth trauma. In the neonate and infant stages, parents need a considerable amount of support regarding bonding, feeding, and meeting the basic needs of the child.

The emphasis of nursing considerations changes as children enter the toddler years. Toddlers are quite a bit more independent than infants, but they still need constant supervision. The focus of nursing care is providing anticipatory guidance to help parents manage fostering independence while still constantly supervising their children. During this age group, parents should also be reminded about the importance of fostering language development.

Nursing considerations for preschool-age children focus on keeping them safe outside the home. During this age group, most children spend a significant part of their day with other children. Parents need guidance on promoting early learning and keeping children safe as they interact with others outside the home. Once children enter the school-age years, they are significantly more independent from their parents but still need guidance, especially if conflicts arise. Parents should have open conversations with their children about school violence and bullying. If children are being bullied, parents should involve the school administration to make it stop. This is also the time in life when children may be diagnosed with learning disabilities. Both nurses and parents should be aware of the signs of learning disabilities so that they can intervene early if there are concerns.

During the adolescent stage of development, nursing care focuses on helping teens develop a strong personal identity. This is a challenging time of development, and many teens experience anxiety and depression. Having an open mind and engaging teens may help them discuss their feelings. It may also be necessary to refer them to a therapist for help. This age group is also known to exhibit risk-taking behavior, especially if their peer group is engaged in risky behavior. Preparing parents for this possibility and providing them with resources may make this development period easier.

Key Terms

abstract thinking the ability to think through scenarios with different possible outcomes and evaluate which outcome would be best
bonding when a caregiver and a baby feel a strong attachment to each other
colostrum a nutrient-dense liquid that also helps bolster the newborn's immune system
conception the biological process of a sperm fertilizing an egg
congenital malformation any health problem or physical abnormality that is present at birth, otherwise known as a birth defect
developmental task a challenge the individual wants to solve that arises predictably at a certain period in life
embryonic period the period of development from approximately two weeks after conception to eight weeks after conception
failure to thrive (FTT) inadequate weight gain or sudden weight loss
fetal period prenatal development from week nine after conception to birth
high-risk pregnancy any pregnancy in which there are increased health risks for the pregnant person, the developing fetus, or both
menarche first menstrual period
milestones activities 75 percent or more of children can do by a certain age
morula mass of cells that develops three days after conception
ovum an egg
phenylketonuria (PKU) a rare metabolic disorder that can cause intellectual disabilities but is highly treatable with diet modification
pre-embryonic period the period of fetal development that occurs in the first two weeks after conception
prenatal development the development period that starts with conception and ends with birth
proximodistal development occurs closer to the midline first and then in the extremities

puberty the stage of development during which physical and sexual maturity occurs and individuals become capable of reproduction
separation anxiety a child's fear of abandonment when their primary caregiver leaves
shaken baby syndrome a serious type of abuse that usually occurs when a parent or caregiver shakes a baby out of anger or frustration
substance use alcohol or drug use
sudden infant death syndrome (SIDS) the sudden death of an infant that does not have an identifiable cause, even after a full investigation
teratogen any external force, such as a medication, chemical, alcohol, drug, or maternal infection, that can cause fetal abnormalities
zygote the product of conception or a fertilized egg

Assessments

Review Questions

1. During what stage of prenatal development is the developing child at greatest risk for birth defects due to a secondary teratogen exposure?
   a. pre-embryonic
   b. embryonic
   c. fetal
   d. pre-fetal

2. The nurse is developing a care plan for a hospitalized toddler. What nursing intervention is appropriate?
   a. Encourage the child to draw in a coloring book.
   b. Allow the child to walk independently around the unit.
   c. Encourage the child to feed himself finger food.
   d. Give building blocks to play with.

3. What comment from a parent would raise concern from the nurse about a school-age child's development?
   a. Billy has a stamp collection that he likes to show off.
   b. Billy is constantly changing his mind about which sport he wants to play.
   c. Billy hates school and is having a hard time making friends.
   d. Billy plays video games every day after school with friends that he met online.

4. What type of play is typical in the toddler years?
   a. solitary play
   b. parallel play
   c. group play
   d. cooperative play

5. What statement best describes typical development during the preschool years?
   a. Preschool children are egocentric and only see things from their perspective.
   b. Having imaginary friends is common during the preschool years.
   c. Preschool children enjoy playing board games like checkers.
   d. Playing on organized sports teams is common for preschool children.

6. A 2-month-old infant has a caregiver who does not always respond to the infant's hunger cues, but the infant is fed enough to grow adequately. According to Erickson, what could be the result of this behavior late in life?
   a. The infant will not suffer any long-term consequences.
   b. The infant will not trust others later in life.
   c. The infant will develop co-dependent relationships later in life.
   d. The infant will become hypercompetitive and aggressive.

7. According to Freud, what behavior is expected in a child aged 3 to 5 years?

a. The child bonds with the opposite-sex parent.
b. Preoccupation with the anus is common.
c. Many children are anxious about trying new activities.
d. The child frequently has imaginary friends.

8. According to Erickson's theory, what will happen if school-age children do not manage the demands of schoolwork and friendships?
a. School-age children become lonely and withdrawn if they do not have friends.
b. Failure to keep up with peers results in a sense of inferiority.
c. Not balancing the demands of school causes angry outbursts.
d. School-age children who lag their classmates develop depression.

9. What differentiates Havighurst's theory of development from Freud's and Erickson's theories?
a. Development is unique to each individual and does not follow a predictable pattern of milestones.
b. Failure to complete a developmental task can be overcome if that task is completed later in life.
c. Individual factors like environment and personal characteristics influence development.
d. An individual's intelligence determines the likelihood of completing developmental tasks.

10. According to Freud, what element of our personality is present at birth?
a. id
b. superid
c. ego
d. superego

11. At what time during fetal development is the unborn child at greatest risk for exposure to toxins in utero?
a. during the first ten weeks of pregnancy
b. in the second trimester
c. between 10 and 15 weeks' gestation
d. in the final trimester, between 28 and 40 weeks' gestation

12. What medical condition is screened for during the toddler years?
a. iron deficiency anemia
b. hypertension
c. scoliosis
d. congenital heart defects

13. Approximately what percentage of neonates are born with a congenital defect?
a. 10 percent
b. 4 percent
c. 2 percent
d. 7 percent

14. What parental advice would a nurse give to help prevent SIDS?
a. Place infants on their abdomen to sleep.
b. Use a firm mattress with only a tightly fitted sheet.
c. Place the infant in the crib with a bottle of milk.
d. Sleep with the infant in your bed until they are able to roll over.

15. What factor is a risk for obesity in school-age children?
a. not getting enough sleep
b. living in a single parent home
c. experiencing food insecurity
d. attending an after-school program

16. When providing prenatal education, what nutrition advice is the most important for the nurse to share with the patient?
    a. Consume at least 400 mcg of folic acid daily.
    b. Focus on eating iron-rich foods like lean meat.
    c. Avoid salty foods like potato chips and crackers.
    d. Try to drink eight glasses of water per day.

17. A nurse is obtaining informed consent from a mother for her child's newborn screen. What statement accurately describes what the newborn screen is?
    a. The newborn screen is a federally mandated health screen that is the same in all fifty states. It tests for genetic mutations that can affect newborns.
    b. Each state has its own newborn screen based on the health conditions that are more prevalent in their state. It is a simple blood test that looks for genetic, endocrine, and metabolic disorders.
    c. The newborn screen is recommended to parents who have a family history of genetic disorders. Individuals with no significant family history should not participate because there is a high rate of false positives.
    d. The newborn screen provides a complete analysis of all genetic disorders. It is recommended that infants are screened regardless of familial history.

18. What vaccine is given to infants prior to discharge from the hospital after birth?
    a. polio
    b. varicella
    c. pertussis
    d. hepatitis B

19. What speech pattern is expected in a 2-year-old?
    a. speaks using two-word sentences
    b. has a 200-word vocabulary
    c. correctly conjugates verbs
    d. communicates by pointing and grunting

20. What parenting strategy helps develop positive self-esteem in school-age children?
    a. Insist that the child participate in multiple after-school activities.
    b. Provide positive reinforcement when the child tries new activities.
    c. Encourage academic success by punishing the child if they do not get good grades in school.
    d. Choose the child's school clothes for them so that they look stylish at school.

Check Your Understanding Questions

1. A newborn weighs 7 lb 4 oz (3.3 kg) at birth. What does the nurse anticipate the infant will weigh at their one-year well child check?
2. Which reflexes does the nurse anticipate a full-term neonate will have at birth?
3. Explain the Oedipus complex, and identify the stage of development during which this occurs.
4. According to Havighurst's theory of development, what will happen if an adolescent does not complete all the tasks in the adolescent stage of development?
5. Describe how nurses should educate parents about introducing solid food to their infant.
6. Describe the process of language development during the toddler years.
7. Outline steps parents should take to foster healthy eating habits in preschool-age children.

Reflection Questions

1. Describe in your own words the primary psychosocial task of adolescence.

2. Describe why infants are at risk for child abuse and neglect.
3. Explain why preschool-age children are at an increased risk for exposure to communicable diseases?

What Should the Nurse Do?

1. AP is a 16-year-old female who presents to Planned Parenthood without her legal guardian and requests a prescription for birth control. She states that she is sexually active with multiple boys and does not consistently use a condom. Other than having unprotected sex, she denies other health problems. What do you think about providing birth control to a 16-year-old without her parents' consent? Is it legal to prescribe birth control to a minor? What other tests should this patient receive?
2. What should the nurse do if they notice that a 6-month-old infant does not respond to their name or make vowel sounds?
3. GD is a 16-year-old female student who recently broke up with her boyfriend. Since the breakup, she has stopped paying attention to her physical appearance and is neglecting her personal hygiene. In the past two months, she has missed class at least once per week and is no longer hanging out with her friends after school. What do you think about GD's mental health? Other than depression, what other health conditions is she at risk for?
4. PW is a 40-year-old female who would like to get pregnant. She has been having unprotected intercourse for six months and thus far has been unable to conceive. She is anxious and worried that she has passed her fertility prime and will never be able to conceive. Does PW's condition meet the criteria for infertility? What advice would you give her? What additional tests or diagnostic workup might be recommended for this patient?
5. What should the nurse do if a 6-year-old is having a hard time learning to read?
6. What should the nurse do if a school-age child is experiencing cyberbullying?

Competency-Based Assessments

1. Develop a fifteen-minute presentation defining the nurse's role in assessing whether infants are meeting their developmental milestones during the first year.
2. Prepare a fifteen-minute presentation that compares and contrasts Freud's and Erickson's theories of development.
3. Use the Internet to research prenatal health risks. Discuss how specific ethnic groups face different prenatal health risks. Identify how nursing education can help improve prenatal health outcomes for at-risk ethnic groups.
4. Use the Internet to research the mental health crisis among adolescents in the United States. Discuss which factors are contributing to this crisis and which school-based interventions have been effective in supporting those with mental health issues.

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CHAPTER 40
Young and Middle-Aged Adults

FIGURE 40.1 The time period spanning from young to middle-aged adults is a crucial time for developing good health and wellness practices. (credit: modification of "Diverse people using phones" by Rawpixel Ltd/Wikimedia Commons, CC BY 2.0)

CHAPTER OUTLINE

40.1 Growth and Development Stages

40.2 Theories Related to Growth and Development

40.3 Health Risks for Young and Middle-Aged Adults

40.4 The Nurse's Role in Preventing Illness

INTRODUCTION During adulthood, individuals pass through several stages of development, including early adulthood, middle adulthood, and older adulthood. Individuals in early adulthood are often referred to as young adults. During middle adulthood, also known as midlife, individuals are referred to as middle-aged adults. Individuals in early and middle adulthood make up most of the U.S. population (Statista, 2022). While age ranges for each category vary depending on beliefs and family constructs within cultural groups, combined early and middle adulthood typically ranges from approximately age 18 to 64 years (Committee on Improving the Health, Safety, and Well-Being of Young Adults, 2015). Young adulthood is typically considered as persons 18 to 35 years of age. For example, social norms and legal constructs such as the ability to seek health care independently often classify individuals as adults at age 18 years. Chronological age defines adulthood in some families and cultures. In others, the transition to adulthood is marked by marriage or a religious or spiritual ritual.

During these developmental stages, individuals progress through many physical, emotional, family, personal, and social changes. While significant change is expected during this forty-plus-year time frame, specific changes are not universally experienced. Each individual will progress in unique ways (Lachman et al., 2015). By identifying patterns in physical change and behavior during early and middle adulthood, nurses can tailor education, treatment options, and healthcare prevention strategies to maximize their benefit to the individual. The experience of early and middle

adulthood is guided by developmental changes, lifestyle choices, social circumstances, and disease.

A range of developmental theories encompass the changes experienced during early and middle adulthood. These theories relate to psychological transitions, identity development, social constructs, and physical changes. Understanding these theories prepares nurses to support adults during expected and unexpected changes in health.

Nurses encounter young and middle-aged adults in various settings, including college health centers, family planning clinics, obstetrics-gynecology clinics, fertility clinics, primary care offices, chronic disease specialty clinics, work-based clinics, mental health facilities, and hospitals. Providing individualized care requires nurses to understand the variety and complexity of the health issues that emerge during the adult life stage. However, health risks in early and middle-aged adults are not universal—rather, they are affected by an individual's lifestyle, age, and genetics. Since these risks affect long-term health, nurses should look for opportunities to discuss them, offer education, and promote change.

A nurse's role in preventing illness is crucial during the early and middle adult years, as this is when risk reduction will have the greatest effect on producing positive long-term health outcomes. Nurses are essential in promoting wellness for all patients, regardless of an individual's underlying or hereditary risk for chronic disease. Nurses can empower individuals to develop healthy habits to carry them through life.

40.1 Growth and Development Stages

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify growth and development patterns for the young adult stage
- Recognize growth and development patterns for the middle-aged adult stage

Individuals experience physical, physiological, psychological, and psychosocial changes during early and middle adulthood. Physical changes during this time are more subtle than the visible changes of growth during adolescence and are directly related to lifestyle choices such as physical activity level, nutrition choices, and substance use (Lawrence et al., 2017; Zheng et al., 2017). Physiological changes are also subtle and may even go unnoticed in early adulthood, though they become more pronounced as aging progresses during the later stages of middle adulthood. Physical changes refer to alterations in the body's structure or appearance, such as body shape, skin texture, or muscle mass, while physiological changes involve modifications in bodily functions or processes, such as metabolism, kidney function, and blood pressure.

Many physiological and physical challenges in early adulthood can be addressed with prompt lifestyle changes and treatment of acute illnesses. During middle adulthood, these changes may manifest as a decline in health. For example, unhealthy dietary practices and reduced physical activity beginning in early adulthood can contribute to weight gain and lipid metabolism changes that may result in a progression to atherosclerosis, glucose intolerance, and hypertension as the individual ages. Nurses can encourage patients to maintain healthy lifestyle practices in young adulthood to reduce health risks as they move into middle adulthood.

Any change in physical or physiological health, whether acute or chronic, may affect psychological well-being and social interactions. In addition, challenges associated with developing an identity, starting or maintaining a family structure, and sustaining a work-life balance can alter interpersonal (interactions between individuals involving communication, relationships, and social dynamics), intrapersonal (processes and experiences within an individual, such as thoughts, emotions, and self-awareness), and social interactions. The many changes individuals experience during early and middle adulthood are easier to navigate when personal health, resiliency, and prevention are prioritized.

Young Adult Stage

During the young adult stage, ages 18 to 35 years, individuals experience stabilization in **physical growth**, particularly changes in height and weight. While young adults may continue to increase muscle mass and bone strength, this stage is often considered the peak in physical development. In healthy young adults, many organ systems are at peak function. These physical attributes allow young adults to perform at maximum ability and are directly tied to their physiological development. Physical development of early adulthood is affected by **physiological change**, or bodily functions happening at a cellular level. Young adults experience significant brain

development, which continues up to age 30 years (Hochberg & Konner, 2020). This ongoing brain development in early young adulthood significantly affects the psychological and social development of the individual. Changes relating to the mind and emotions are called a **psychological change**. A **psychosocial factor** is related to interpersonal interactions, such as relationships, work communication, and cooperation in living situations. The ability of young adults to develop an awareness of psychosocial interactions and strategies for maintaining appropriate social interactions is both challenging and rewarding.

Physiological Development

Physiological and physical development changes continue throughout young adulthood. Body size and physical appearance are consistent with an adult stage, and growth velocity slows and stabilizes. In healthy young adults, organ systems are functioning at the highest capacity. Young adults can maximize energy output and have significant physical endurance. The following are some physiological processes that are at their peak in early adulthood:

- lung function
- cardiac function
- agility
- flexibility
- vision
- hearing
- reproduction

Health in young adulthood can vary significantly from one individual to another. Peak ability and physiological performance depend on underlying chronic health disorders, genetic factors, and lifestyle choices. The body is highly adaptable and may compensate to a certain degree for poor lifestyle choices during this stage. However, there is an epidemic of obesity and inactivity spanning the adolescent and young adult population. Lifestyle choices, such as unhealthy eating habits, lack of exercise, or substance use disorders, can have significant negative short- and long-term effects on health (Zheng et al., 2017). While young adults may have a certain level of resilience, chronic poor lifestyle choices can increase the risk of developing various health issues later in life, such as obesity, cardiovascular disease, and diabetes. It is important for individuals to prioritize healthy behaviors and habits from a young age to promote long-term health and well-being. While individuals may still experience their personal best health during their early adulthood, they may be in comparatively poor health due to the presence of chronic diseases such as obesity, type 2 diabetes, and depression. These increasingly prevalent disorders are often interrelated and associated with a sedentary lifestyle (Lawrence et al., 2017; Zheng et al., 2017).

In the later part of young adulthood, organ systems start a slow, gradual decline. By the mid to late 30s, young adults start noticing signs of aging. These signs may include a decline in immune function, sensory response time, agility in movement, and ability to recover quickly from physical exertion. For example, running or other physical exercise may cause individuals to feel winded longer after stopping an activity. While many physical changes occur and some physical decline is expected with age, individuals of all abilities can experience the benefits of maintaining physical activity throughout their life span. Finding joyful body movement that fits one's abilities, preferences, and lifestyle shows a commitment to maintaining health.

LINK TO LEARNING

A concise report on a study evaluating diabetes and obesity rates in young adults (https://openstax.org/r/77DiabetsObesty) is presented by NPR.

Psychological Development

During the stage of emerging adulthood, very young adults work through a process of emerging as adults. Significant brain development continues throughout this stage of adulthood, which occurs immediately after adolescence and typically lasts until around the age of 25 years (Wood et al., 2017). Young adults experience significant behavioral and social maturation during this time, during which they are expected to perform as adults. Brain maturation continues through early adulthood and includes increases in brain white matter and development and integration of the frontal and prefrontal cortex of the brain. Behavior changes associated with these brain developments include

the following (Hochberg & Konner, 2020):

- decreased aggression
- impulse control
- role changes

Many of these psychological changes occur in response to the development of the frontal cortex, which controls **executive functioning**—the ability to develop plans, focus attention, perform from working memory, maintain self-awareness, initiate and execute complicated tasks, control impulses, and manage emotions. As individuals progress through young adulthood, they typically experience significant improvement in executive functions that are based on both life experiences and the completion of brain development. Individuals may notice improved parenting skills, ability to function in a work environment, and coping skills to manage life stressors.

Young adults are highly capable of learning new and complex ideas and tasks. As the white matter in the brain develops, communication improves within and between brain regions. Therefore, young adults have a high capacity for integrating new information, generating new ideas, and synthesizing information (Harvard University, n.d.).

REAL RN STORIES

Screen Addiction

Name: Karen, RN
Clinical setting: University health clinic
Years in practice: 13
Facility location: Oregon

I've spent the last fifteen years of my nursing career working with students at a university health clinic. I have definitely noticed a significant shift in medical concerns in this age group during that time. While I care for students of all ages, most of my students are very young adults, usually 26 years old or younger. There has been a significant increase in depression, anxiety, sleep-related issues, and addiction. While each case is unique, screen addiction is a common thread linking many of these health concerns. When a patient in my care is experiencing any combination of these health challenges, I always bring up the difficult topic of screen use and addiction. I remember one patient in particular, Jason, a 24-year-old studying civil engineering. He had persistent struggles with insomnia, trouble concentrating in class, escalating anxiety related to tests, and spiraling depression related to these other stressors. He told me that he had to quit his intramural soccer team because he didn't have enough time to attend the games. During our discussion about his insomnia, I inquired about his screen use. Initially, he brushed off the question, stating he only used screens for studying, "fun," and communicating with friends. We discussed sleep hygiene habits, including limiting or stopping screen use within one to two hours before bed. After his second visit, with no improvement in sleep despite adhering to most of the habits except screen use, I asked him to keep a screen use diary. When he returned to the clinic, he was shocked by his screen use, telling me he didn't realize he was using some screen or device for up to twelve hours per day. He did not know the connection between screen use and dopamine production in the brain or that true addiction can occur. He'd try to limit his use but always found himself back at the computer or scrolling on his phone. At this point, we discussed the effects of excessive screen use on sleep quality, including the following:

- hyperarousal
- disruption in circadian rhythm
- altered sleep patterns
- trouble concentrating

After we created a plan to curb his screen use, he significantly improved his sleep duration and quality. He also reported back with considerable improvement in a variety of areas that he hadn't realized were connected to his screen use, including the following:

- resolution of neck pain
- reduction in headache frequency

- improved interactions with his roommate
- less anxiety about upcoming tests
- sense of relief when his automatic downtime engaged
- improved outlook on his success in college

Jason had success overcoming screen addiction, partially due to his motivation to finish college but also because he sought to understand the cause of his health challenges and sought professional help.

Young adult brain development is affected by stress, life chaos, physical or emotional threats, and unpredictable environments. In addition, habits like food choices, screen use, and substance use influence brain neurotransmitters, including dopamine. For example, in some cases, video gaming can positively affect reaction time and cognitive plasticity—the ability of the brain to adapt to new experiences. However, recent studies have shown that due to dopamine production and release during gaming, playing for more than three hours per day can increase the risk for attention problems, depression, and attention deficit hyperactivity disorder (ADHD) symptoms. These results apply to children and emerging adults whose prefrontal cortex is still developing (National Institutes of Health [NIH], 2022). Screen use of any type has been shown to affect sleep onset, duration, and quality of REM sleep, which is essential for activating memory and storing information. Variable reward systems are unpredictable psychological rewards that provide a dopamine surge in the brain and encourage individuals to pursue additional gratification (Haynes, 2018). Variable rewards are associated with social media and gaming and may challenge some young adults who lack the self-control needed to limit their screen use (Harvard University, n.d.).

Psychosocial Development

Young adults begin the transition to adulthood at approximately age 18 years. Following are some of the many social cues that mark the progression to adulthood:

- obtaining a driver's license
- becoming eligible to vote
- going to college
- joining the military
- reaching the legal drinking age

Cultural cues that indicate a progression toward or into adulthood vary widely among cultures or families but may include the following:

- buying a car
- moving out of their parents' home
- dating
- getting married
- having children
- buying a house

CULTURAL CONTEXT

Multigenerational Households

In the last fifty years, the number of people living in a **multigenerational household** with three or more generations living together in one home has increased significantly. The Pew Research Center indicates the number of multigenerational households in the United States increased fourfold since 1971. Up to 18 percent of individuals live in a multigenerational household, and the U.S. Census Bureau data indicate that 7 percent of family homes are multigenerational. Most individuals living in multigenerational households are Asian, Black, and Hispanic American. In some cultures, multigenerational living is a common standard. Still, multigenerational living is becoming increasingly prevalent in the United States. Recent trends show a significant increase in non-Hispanic White Americans living in multigenerational households. Reasons for multigenerational living across cultures include caregiving for older adults, caregiving for young children, financial stability, and convenience. While multigenerational living can be stressful, in most individuals' experience, the benefits outweigh the negatives (Vohn

et al., 2022).

These social and cultural guideposts are not universally experienced, and individuals who do not attain them can still progress through early adulthood. Since the timeline associated with reaching adulthood is highly individual, it has been proposed that there is a new stage of development between adolescence and early adulthood called "emerging adulthood." During this time, young people do not yet identify with adulthood. Therefore, they may wait longer to join the workforce, move out on their own, get married, and/or have children. However, by the end of early adulthood, most individuals will have accomplished the core developmental tasks of becoming more autonomous, taking care of themselves and others, committing to relationships and jobs/careers, getting married, raising families, and integrating into their chosen communities. Healthy lifestyle habits such as adequate nutrition, exercise, positive social interaction, and moderating digital and social media use during young adulthood affect health during the next stage.

LINK TO LEARNING

Understanding the link between the neurotransmitter serotonin, the gastrointestinal tract, and dietary choices (https://openstax.org/r/77Serotonin) is crucial for explaining the rationale for healthy eating to patients.

Middle-Aged Adult Stage

Around the time individuals reach their 40s, they enter middle adulthood, which extends to the mid-60s. Social and cultural overlap occurs between the end of young and early middle adulthood and is primarily based on lifestyle choices and social demands. For example, physical fitness in young adulthood may translate to a healthier physical body in middle adulthood. In addition, challenges experienced in middle adulthood depend on an individual's ability or choices regarding having children, work, money, and the consequences of their social decisions in young adulthood. During this time, middle-aged adults confront challenges related to common physical, psychological, and psychosocial changes. While these unique challenges are described in many developmental theories, the experience of middle adulthood is highly individual.

Physiological Development

During middle adulthood, individuals continue to notice signs of aging, although these may be more subtle or more pronounced depending on individual characteristics and life choices (Table 40.1). Expected changes occur in various organ systems, including the following:

- musculoskeletal
- cardiovascular
- integumentary
- gastrointestinal
- urinary
- sensory
- dental
- reproductive

Organ System	Physiological Change	Physical Sign or Symptom
Cardiovascular	• Reduction in blood vessel elasticity • Elevated cholesterol • Reduction in cardiac output • Reduction in exercise endurance	• Elevated blood pressure • Vessel plaques begin to form • Reduction in exercise tolerance depending on fitness
Respiratory	• Mild decline in lung compliance	• Decline from peak stamina

TABLE 40.1 Physiological Changes in Adulthood

Organ System	Physiological Change	Physical Sign or Symptom
Musculoskeletal	• Sarcopenia begins to develop • Early signs of osteoporosis • Decreased proprioception—perception of movement and position of body parts	• Reduction in muscle mass • Reduction in strength, dependent on physical fitness • Reduction in joint mobility • Joint pain • Reduced flexibility
Genitourinary	• Renal perfusion may decline • Bladder musculature weakens	• Reduced bladder capacity • Stress incontinence • Increased risk for urinary tract infection (UTI)
Gastrointestinal	• Reduction in GI musculature • Change in GI flora	• Reduction in GI motility • Digestive discomfort • Gastroesophageal reflux disease (GERD) • Constipation
Integumentary	• Reduction in subcutaneous tissue • Effects of ultraviolet (UV) damage arise	• UV-related skin cancers • Wrinkles • Thinning skin • Lesions such as seborrheic keratosis and skin tags
Endocrine	• Glucose intolerance, depending on metabolic function • Increased stress levels	• Weight changes • Reduced ability to adapt to stress • Onset of diabetes

TABLE 40.1 Physiological Changes in Adulthood

Organ System	Physiological Change	Physical Sign or Symptom
Sensory	• Eardrum damage worsens • Eardrum thickens • Decreased lens flexibility	• Reduced hearing • Tinnitus (ringing in the ears) • Presbycusis • Slow reaction to changing light • Presbyopia • Trouble with night driving
Reproductive	• Reduction in estrogen and progesterone (persons assigned female at birth) • Reduction in testosterone (persons assigned male at birth)	• Vaginal and breast atrophy • Vaginal dryness and irritation • Erectile dysfunction • Hot flashes (persons assigned female at birth) • Depression and irritability (persons assigned female at birth) • Thinning of vaginal tissue (persons assigned female at birth) • Erectile dysfunction (persons assigned male at birth)

TABLE 40.1 **Physiological Changes in Adulthood**

Musculoskeletal

One of the primary musculoskeletal physiological changes that occurs during middle adulthood, regardless of health status, is the loss of muscle mass. In **sarcopenia**, loss of skeletal muscle mass progresses throughout aging but begins showing pronounced effects during middle adulthood. Some studies show that people aged 75 years may have up to 30 to 60 percent fewer nerve endings in their leg muscles than they did in their early 20s. In 2018, the U.S. Centers for Disease Control and Prevention (CDC) assigned sarcopenia its own discrete medical code. Sarcopenia can be associated with various other physical changes, including a loss in overall muscle strength and a decrease in endurance and flexibility. These changes put individuals at risk for musculoskeletal injuries, including muscle, connective tissue, and bone injuries.

Sarcopenia and associated **osteosarcopenia**, the decline of muscle and bone tissue, pose significant physical change during middle adulthood. These changes are associated with alteration in mobility and strength and a higher risk for certain diseases. Human beings reach peak bone mass around 30 years of age (Mayo Clinic, 2022). In **osteoporosis**, a patient experiences a loss of bone mass. Osteoporosis is often associated with persons assigned female at birth (AFAB) because bone mass can deteriorate more quickly in persons AFAB during middle age due to estrogen loss in menopause. After menopause, persons AFAB can lose 5 to 10 percent bone mass annually. However, beginning in their 60s, persons assigned male at birth (AMAB) and persons AFAB lose bone mass at roughly the same rate. The CDC reports that 4.2 percent of persons AMAB and more than 18.8 percent of persons AFAB older than 50 years of age have osteoporosis (2022). Attention to lifestyle factors affecting bone health during this stage of life may bring pronounced health benefits for all, now and later.

Integumentary

The integumentary system changes throughout a person's life span; changes include decreased subcutaneous tissue thickness, hair graying, and reduced skin elasticity. Manifestations of skin cancer from earlier sun damage will also present during this time. Middle-aged adults may also notice some of the following changes:

- dry skin
- skin tags
- dark spots

- wrinkles
- delayed wound healing

Cardiovascular

An individual's underlying health influences the cardiovascular changes they may experience during middle adulthood. Some common cardiovascular changes during this stage include increased blood pressure due to blood vessels losing elasticity, decreased cardiac output, plaque buildup in the arteries, and thickening of the heart muscle. Many chronic diseases that affect the heart and vascular system, such as coronary artery disease and heart failure, begin to manifest in middle-aged adults. The presence of chronic diseases such as diabetes, high blood pressure, and obesity accelerate the aging process of the cardiovascular system through chronic organ stress and damage caused by vascular impairment. These negative physiological changes typically start in middle adulthood and progress to older adulthood unless significant lifestyle changes or treatment plans are implemented. This highlights the importance of managing weight, engaging in physical movement, and eating a nutritious diet. For example, focusing on lifestyle changes such as limited alcohol intake, daily physical activity, and treatment of high blood pressure with medications can reduce the long-term impacts of high blood pressure on cardiovascular and kidney health.

Gastrointestinal

Gastrointestinal (GI) changes in middle adulthood are primarily associated with the early stages of muscle loss, including the musculature of the intestinal tract and colon. These changes can contribute to slow digestive transit times, resulting in constipation. Stomach acid changes may also occur. In some individuals, slackening of the **esophageal sphincter**, the musculature closure between the esophagus and stomach, may contribute to **acid reflux**, in which gastric acid moves up the esophagus and causes mucosal irritation. The disorder **achlorhydria**, in which the stomach produces insufficient acid, may also occur. There also may be a change in the microflora in the GI tract that can affect carbohydrate metabolism, fat storage, vitamin uptake, serotonin pathways, and immunity (Olvera-Rosales et al., 2021). Therefore, this microflora environment plays a critical role in the development of disease and response to illness.

Urinary

Urinary physiology may also change during middle adulthood. Persons AMAB may begin to notice symptoms of prostate enlargement, such as urinary frequency, urinary urgency, incontinence, weak urinary stream, and urinary retention. Persons AFAB may start to notice signs of weakening pelvic floor muscles, which manifests in the urinary system as urinary frequency, incontinence, pelvic pain, and difficulty initiating urine stream. Both persons AMAB and persons AFAB may start to experience the early signs of loss of elasticity of the urinary bladder, including urinary frequency and stress incontinence.

Sensory

Sensory changes also begin to arise during middle adulthood, including hearing loss. Hearing changes can be influenced by genetics as well as be caused by long-term and repeated exposure to high-decibel sounds from machinery, music, or other environmental noise. The CDC (2022) reports that exposure to noise at 70 dB or higher can cause permanent ear damage and subsequent hearing damage. Hearing loss becomes more pronounced as an individual ages, and **presbycusis**, or age-related hearing loss, is a common condition. Presbycusis typically begins around age 60 to 70 years. The condition affects the ability to hear high-frequency sounds and can significantly impact communication and quality of life (Sherman, 2024).

LINK TO LEARNING

Understanding what noises cause hearing loss (https://openstax.org/r/77HearingLoss) helps nurses encourage patients to protect their ears and prevent hearing damage.

Visual changes associated with aging may emerge during the middle adult stage. In particular, reduced eye flexibility can cause trouble adjusting to light at night and create a glare. The rigidity also affects the eyes' ability to adjust focus on close-up objects. The condition **presbyopia**, the loss of ability to focus on close-up objects, can progress throughout middle age and stabilize in older adulthood as other eye changes arise.

Dental

Dental changes in middle adulthood include receding gums, cavities, and wear on teeth, which can lead to subsequent cracking and the need for dental work. Changing oral secretions leading to dry mouth can also negatively affect dental health. Lifelong dental hygiene practices also affect the long-term health of teeth and gums. Periodontal disease and poor oral health can lead to an overall inflammatory response in the body and a cascade of inflammatory markers, which increase the risk for other diseases (Luo et al., 2022).

Reproductive

The cessation of the menstrual cycle for at least twelve months is known as **menopause**. It is a period of transition during which the ovaries stop releasing eggs, and the level of estrogen and progesterone production decreases. Menopause typically occurs during middle adulthood, though some individuals experience abnormal early menopause in young adulthood. After menopause, menstruation ceases. Menopause primarily ends an individual's natural ability to conceive a child, but the hormonal changes also affect other organ systems (Figure 40.2). Changes during menopause and **perimenopause**, the stage preceding menopause, can include direct physical changes to organs and tissue, such as vaginal dryness and atrophy associated with estrogen reduction, lower libido, and hot flashes.

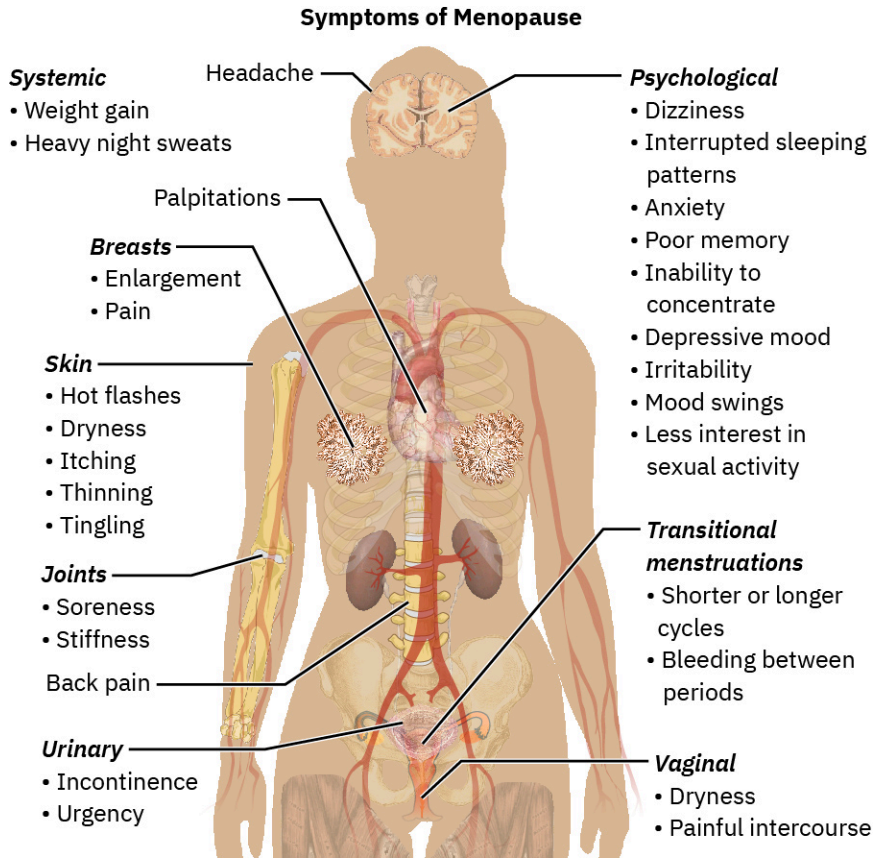


FIGURE 40.2 Persons assigned female at birth may experience a wide range of symptoms during menopause. (credit: modification of "Symptoms of menopause (vector)" by Mikael Häggström/Wikipedia, CC0 1.0 Public Domain)

Menopause is not seen as universally distressing (Brown et al., 2021). Changes in hormone levels are associated with hot flashes and sweats in some people; however, the intensity, duration, and frequency of these symptoms vary. Other symptoms like depression, irritability, and weight gain are not necessarily caused by menopause (Brown et al., 2021). The incidence of depression and mood swings is not greater among menopausal people than nonmenopausal people.

PATIENT CONVERSATIONS

Hormone Replacement in Menopause

Scenario: Jenell is a 50-year-old eighth-grade teacher who spends her free time traveling with her husband and two teenage sons, hiking and skiing with her dog, and studying history. She sees her primary care provider yearly for a wellness checkup. She has made an appointment with her provider to discuss unexpected weight gain and other menopausal changes. Anna works as a nurse in the primary care medical office, where Jenell is a patient. While Anna takes her vital signs, Jenell states, "I'm in menopause, so I guess it's time to start hormones." Anna remembers that only a small percentage of persons AFAB experiencing natural menopause take hormone replacement therapy.

Nurse: Are you still having a menstrual cycle? What symptoms are you experiencing with menopause?

Patient: My last period was fourteen months ago. I have noticed some weight gain, even though I'm pretty active. I have some irritability and feel down a lot. I have had a few hot flashes, but nothing really bothersome, not like what my friends tell me about. Another big concern is painful intercourse. I know some friends who are taking herbal supplements, but I thought it was just best to get on a hormone replacement.

Nurse: There are many ways to cope with menopausal changes, including hormone replacement therapy. Some people take a supplement for a short time, others only use topical hormone treatments, and some use no hormones at all. It all depends on your symptoms.

Patient: I want to hear my options. I'd rather not take a hormone if I don't need to.

Nurse: I'll let your provider know your symptoms, and you can discuss the options. For example, they might suggest medication that affects serotonin to help with emotional symptoms and hot flashes as well as a vaginal cream to improve vaginal lubrication and skin elasticity.

A reduction in testosterone production in males is called **andropause**. While the reduced hormone production does not affect their overall ability to reproduce, it may cause changes in libido, body hair, loss of muscle mass, and breast enlargement. Adult persons AMAB can experience erectile dysfunction at any age and for a variety of reasons, but it is more common as they age, due to factors such as stress, lack of physical activity, obesity, and chronic underlying health issues.

Psychological Development

Physiological changes may affect psychological health at all life stages, and vice versa. The psychological developments in middle adulthood relate to prior life circumstances, including childhood experiences and life choices made during young adulthood.

Middle-aged adults may experience significant daily stress related to family disputes, work overload, raising children, and caregiving for aging parents. Exacerbations of depression symptoms may be triggered by specific stressors, including death, divorce, job changes, or unemployment. Psychological well-being is also associated with lifestyle choices.

In the later part of middle adulthood, individuals may begin to experience mild cognitive impairment and memory loss. Hormones that affect sleep may worsen cognition and mental health management. Depression and anxiety early in life may be exacerbated during the middle-life stage due to increasing life and social stressors and worries about finances, health, and family (Brown et al., 2021). Middle-aged adults continue accumulating **crystallized intelligence**, the ability to draw and extrapolate from previously learned experiences (Perera, 2024). However, **fluid intelligence**, the ability to reason, transform, or generate new information, may decrease during middle age (Perera, 2024). The effects of knowledge, experience, and increased ability to regulate emotions can compensate for these losses.

Brain science is evolving and will provide new insights about cognition in midlife, such as the brain's capacity to renew, or at least replenish, itself (Mayo Clinic, 2024). The capacity to renew brain connectivity through new connections is called **neurogenesis**, while the capacity to replenish or strengthen existing connections is called

neuroplasticity. Disease states such as depression, high blood pressure, and sleep apnea; alcohol; as well as medication interventions such as opioids, benzodiazepines, antihistamines, and proton pump inhibitors may affect cognitive outcomes (Mayo Clinic, 2024).

Working memory, or the ability to simultaneously store and use information, becomes less efficient with age (Craik & Bialystok, 2006). The ability to process information quickly also decreases with age. The slowing of processing speed may explain age-related variations in the performance of different cognitive tasks (Salthouse, 2004). Some researchers have argued that **inhibitory functioning**, or the ability to focus on certain information while suppressing attention to less pertinent information, declines with age and may explain why performance on cognitive tasks tends to vary by age (Hasher & Zacks, 1988).

Psychosocial Development

Middle adulthood typically involves establishing one's career and contributing to others' development through activities like volunteering, mentoring, and raising children (Infurna et al., 2020). During this stage, middle-aged adults may begin contributing to the next generation, often through caring for others. Often, they also engage in meaningful and productive work that contributes positively to society (Infurna et al., 2020). During this time, adults also experience a range of interpersonal challenges, such as the following:

- coping with the death of parents and associated grief
- supporting children as they move on into their own lives
- adjusting to home life without children (often referred to as the "empty nest")
- supporting adult children who return to live at home (known as "boomerang children" in the United States)
- becoming grandparents
- preparing for late adulthood
- acting as caregivers for aging parents or spouses
- experiencing workplace satisfaction/dissatisfaction

Some psychosocial theorists believe that the early years of middle adulthood are a time for reappraisal or, perhaps, the reaffirmation of goals, commitments, and previous choices. It can be a time for taking stock and recalibrating what is important in a person's life. This new perspective on time brings a sense of urgency to life. A person focuses more on the present than the future or the past. They may grow impatient with being in the "waiting room of life," postponing doing things they have always wanted to do. A previous focus on the future gives way to an emphasis on the present. Neugarten (1968) notes that in midlife, people no longer think of their lives in terms of how long they have lived. Rather, life is thought of in terms of how many years are left. If an adult is unsatisfied at midlife, there is often a heightened motivation to make changes "before it's too late."

LINK TO LEARNING

Middle-aged adults may experience "empty nest syndrome" when their children grow up and leave home for the first time. In this video, suggestions for encouraging healthy coping with empty nest syndrome (https://openstax.org/r/77EmptyNest) are presented.

40.2 Theories Related to Growth and Development

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine Erikson's theory in relation to young and middle-aged adults
- Explain Levinson's theory in relation to young and middle-aged adults
- Examine Vaillant's theory in relation to young and middle-aged adults
- Explain Neugarten's theory in relation to young and middle-aged adults
- Examine Kegan's theory in relation to young and middle-aged adults

Many theories exist to explain the lifelong process of human development. These developmental theories explain the progression of human needs, physical abilities, and psychosocial dynamics throughout an individual's life span. Changing social and cultural norms affect the application of these theories in nursing practice. In theories describing

young and middle adulthood, nurses must recognize that the current developmental stage is affected by both previous and later stages. The way individuals experience life stages is not universal. The theories form a framework for understanding the range of social and physical developments across the life span. Development does not stop at a certain age; it is a continuous lifelong process.

There are many individual and group differences in patterns of development, with the influences of gender, cohort/generation, race, ethnicity, culture, socioeconomic status, education level, and time in history all influencing these patterns. Life span developmental theories give nurses a comprehensive perspective of individual developmental journeys. Nurses with a strong understanding of the psychosocial theories of aging have a unique ability to individualize care for patients in various clinical settings. They can see commonalities and differences stemming from their patients' diverse geographic and cultural backgrounds and incorporate these to enhance care.

Erikson's Developmental Theory

Erik Erikson was one of the first formal life-stage theorists. In his work published in 1963, **Erickson's psychosocial development theory** explained social aspects of human development from infancy through adulthood, including personality development through the life span. He described the idea that an individual's sense of self is affected by how they interact with others. Erikson believed that humans are motivated by a need to achieve competence during the eight stages of development. Competence at any stage is achieved by resolving a specific developmental task or conflict, which leads to a healthy personality. Conversely, failure to master the developmental tasks in each stage may produce an internal sense of inadequacy.

According to Erikson (1963), individuals progress through a predictable series of developmental stages, as summarized in Table 38.2. People in early adulthood are concerned with intimacy versus isolation. After developing a sense of self in adolescence, individuals are ready to share their lives with others. A strong sense of self and a positive self-concept are essential for developing healthy intimate relationships and avoiding feelings of loneliness and emotional isolation.

During middle adulthood, the social task is generativity versus stagnation. Generativity involves finding one's life's work and contributing to the development of others through productive activities. For some, this may include volunteering, mentoring, or raising children; for others, it may include making career choices or addressing societal needs. For example, someone who feels called to help marginalized or at-risk populations may pursue a career in social work. An individual may identify a societal need or problem and start their own business to address this need. Those who do not master this task may experience stagnation, having little connection with others and little interest in productivity and self-improvement.

Understanding Erikson's theory is key to developing a patient-centered nursing practice. The complex dynamics of human personality development through the life span directly affect health and wellness at each stage. For nurses, understanding the highly variable aspects of human development allows them to create individualized care plans regardless of the age or stage of the individual. Typically, progression through Erikson's developmental stages happens in a predictable sequence; however, individuals may revisit earlier tasks or work through multiple tasks simultaneously depending on their specific life circumstances. This is particularly true for the adult population, as it spans a wide range of ages. For example, a young adult living away from home of origin for the first time may struggle with identity versus role confusion while working to develop interpersonal relationships through the task of intimacy versus isolation. For young adult and middle-aged adult populations, nurses may incorporate stage-specific interventions, such as the following:

- encouraging physical activity based on specific hobbies and passions
- connecting individuals with in-person social support groups
- encouraging learning new activities or career changes as desired
- educating individuals on healthy eating for long-term disease prevention
- providing referrals for behavioral health support services for individuals and families
- showing respect for a wide variety of family structures

Levinson's Theory of Adult Development

Life span development theories have evolved over the years. In the 1970s and 1980s, psychologist Daniel Levinson suggested his theory on adult development. While he began with a study evaluating primarily males, he later

expanded his research and theory to include females. Like Erikson, **Levinson's theory of adult development** suggests that adults work through tasks as they progress through developmental stages. However, unlike Erikson's psychological theory, Levinson believed that life structure changes occurred due to changes in an individual's physiology, psychology, and societal roles (Agronin, 2014). He believed that transitions between these five stages include significant disturbance, which leads individuals to modify, build, or change their internal character or external life structure over several years. Levinson further breaks down the young and middle adult years into transition periods (Figure 40.3).

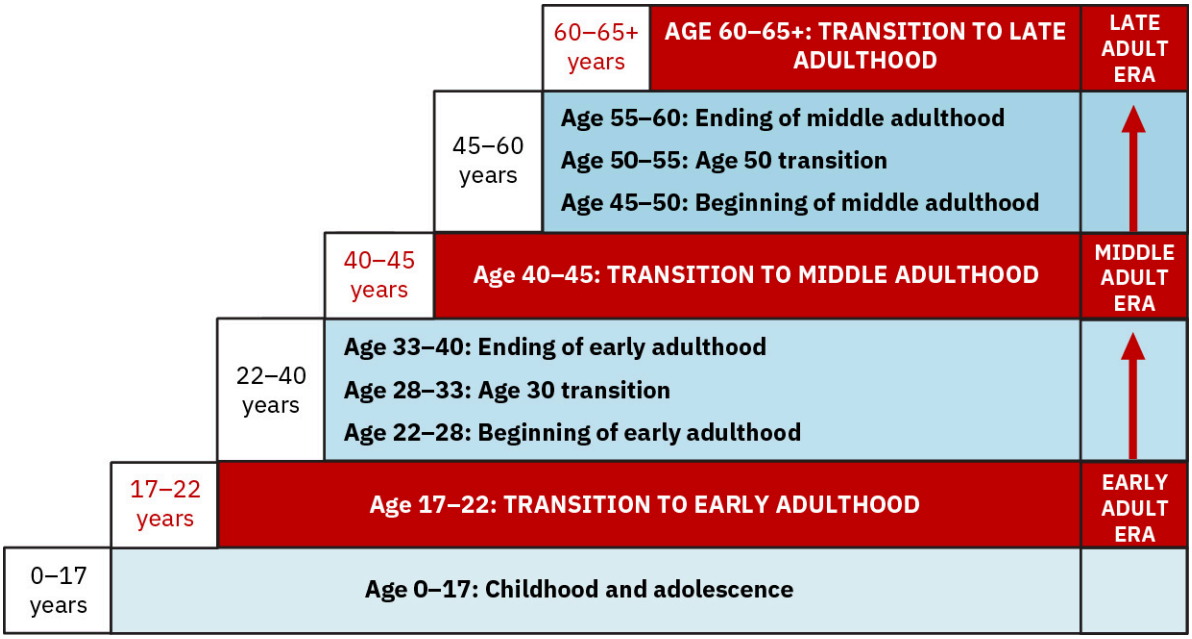


FIGURE 40.3 Levinson's model shows the alternation between transition and stabilization in adult development. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

In explaining these transitions (Table 40.2), Levinson focused on the concept of life structure. Life structure is how individuals interact with their social and cultural environment as well as how they see themselves within this structure throughout their lives. Levinson's theory is based on the idea that individuals move through periods of stability and transition during each stage of life.

Transition Period	Age Range	Tasks	Examples
Early adult transition	Ages 17 to 22 years	Young adults alter their life structure by making choices and creating goals.	• Move out of their parent's home • Support themselves financially • Become independent in decision-making • Question social norms present in their family of origin • Question family values • Identify core personal values • Create a desired social network • Develop plans to pursue dreams
Age 30 transition	Ages 28 to 33 years	Adults experience a time of reflection on early adulthood and planning for the future.	• Consider creating a family • Address past failures and create a plan for success • Settle down in family life or career • Envision a new identity that reflects their values in this stage

TABLE 40.2 **Levinson's Adult Transition Periods**

Transition Period	Age Range	Tasks	Examples
Midlife transition	Ages 40 to 45 years	The tasks in this stage are deep reflection and often alteration in life structure based on these reflections.	• Adjustments in family structure • Reassessment of career aspirations • Desire to set new personal goals • New sense of direction • Intense desire for change • Relationship crises
Late adult transition	Ages 60 to 65 years	Adults in this stage may reflect on successes and failures, make peace with prior life experiences, and create a vision for the future.	• Experience acceptance of life stage • Create goals for maintaining connection with others • Prioritize relationships and unfulfilled goals

TABLE 40.2 Levinson's Adult Transition Periods

For nurses, Levinson's theory gives insight into the many struggles experienced by young and middle-aged adults. Nurses can express compassion for individuals struggling in these stages by acknowledging the universality of change during this developmental period. Nurses can also encourage individuals to seek stability through internal reflection and maintaining healthy psychological and physical practices to maximize their well-being. Normalizing behavioral health services to help individuals through these transitions is also a crucial responsibility of nurses.

Vaillant's Theory of Adult Development

Another psychosocial theorist, George Vaillant, built on the established theories of Erikson and Levinson. Vaillant analyzed research data to support his theory about adult development. His theory begins with adolescence and intersects with and adds elements to Erikson's theory. **Vaillant's theory of adult development** is based on educational and physical health measures, proposing that higher education levels directly affect self-care and health monitoring over the adult life stage. Additionally, he proposed that these factors directly influence overall health and success in the aging process (Nolan & Kadavil, 2003). Vaillant's theory is often conceptualized as an expanding set of concentric circles as adults move to complete sequential tasks of development (Figure 40.4). He included six stages, two of which are additions to Erikson's theory:

- identity
- intimacy
- career consolidation
- generativity
- keeper of meaning
- integrity

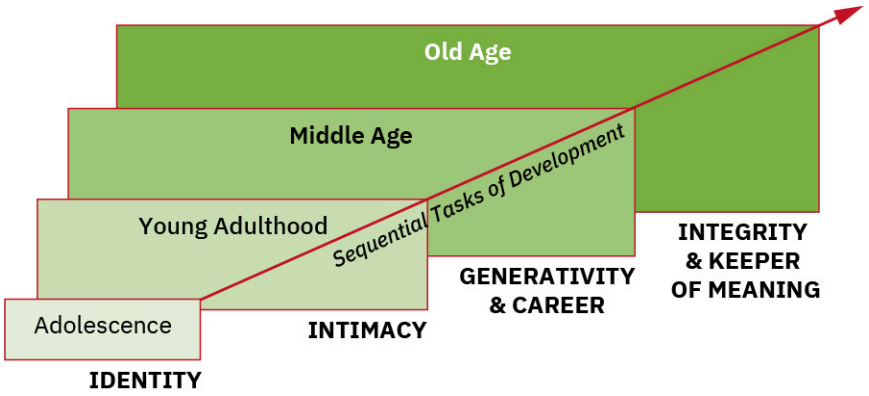


FIGURE 40.4 Vaillant's theory suggests concentric growth in the completion of developmental tasks. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Vaillant's additions to Erikson's theory include career consolidation (which falls just after the development of intimacy and before generativity) and becoming keeper of the meaning (which comes after generativity and before achieving integrity).

Vaillant's idea of career consolidation is essential in understanding young and middle-age development. Career consolidation involves the task of finding contentment and satisfaction in career aspirations. Vaillant used commitment, compensation, contentment, and competence to describe the goals in the career consolidation stage. This stage allows individuals to internalize lifetime learning and offer specific contributions to society and the next generation. Career consolidation is an individual's sense of well-being in their role and transitioning from a mentee to a mentor (Malone et al., 2016).

In caring for young and middle-aged adults, nurses should remember the importance of developing a sense of contentment and competence during these life stages. The application of Vaillant's theory in nursing care can be twofold.

Nurses can support individuals in their journey to maintain health in middle adulthood. Individual health can be considered an offshoot of career consolidation with a focus on commitment to both mental and physical health. This includes compensation as a response to unexpected changes and the ability to grow physically and mentally from these changes. It also includes contentment in life choices or continual work toward better life choices, competence in evaluating one's health, and deciding on changes and implementing them.

Nurses may also apply Vaillant's career consolidation theory to nursing practice in ways that improve their own and others' health. Nurses applying Vaillant's career consolidation theory will have continued and renewed commitment to promoting health in the populations they serve. They receive compensation for the intangible rewards of helping others. They show a sense of contentment in encouraging the newest generation of nurses and a sense of integrity in serving this population by offering education and mentorship. Their competence and expertise empower them based on their clinical experience, and they can adapt and expand their nursing knowledge from this strong base.

Neugarten's Theory of Adult Development

Contrary to the developmental theories proposed by Erikson, Levinson, and Vaillant, Bernice Neugarten, an American theorist, introduced a distinctive perspective in the 1960s centered on the concept of a "social clock." **Neugarten's theory of adult development** defines the "social clock" theory as a culturally determined timeline prescribing when individuals should achieve certain milestones and life events, such as marriage, parenthood, career advancement, and retirement. Neugarten's theory emphasizes how individuals' adherence to, or deviation from, these societal expectations can shape their developmental trajectory and psychological well-being. She suggested that individuals may experience stress or satisfaction depending on how closely their personal life timelines align with societal norms (Ferraro, 2014).

These age norms, as manifested through outward behaviors like dress, actions, family dynamics, and lifestyle choices, are subject to change based on cultural values and beliefs. The notion of the "social clock" encompasses diverse cultural values associated with gender, social class, spirituality, occupation, and ethnicity that shape individuals' life choices and behaviors. Neugarten viewed these norms as subtle forms of social control, influencing

individuals' major life decisions in accordance with societal expectations.

Questions remain around the effects of adhering to these cultural age norms on individuals' overall happiness and contentment throughout their lives. While these norms may evolve across generations, they remain entrenched in distinguishing between older and younger adults. Neugarten proposed that cultural age norms contribute to age grading within society, wherein individuals are categorized and judged based on their age, often resulting in the assignment of specific roles and responsibilities associated with particular age groups.

Neugarten raised critical inquiries regarding the appropriateness of these entrenched social norms, exploring strategies to challenge their influence and assessing their long-term impact on individual well-being, especially when one's life trajectory diverges from the conventional social clock. By questioning the rigidity of these norms, she sought to understand how they shape individuals' choices, opportunities, and sense of self over time. Neugarten explored strategies for challenging the influence of these norms, recognizing the importance of empowering individuals to navigate their own life paths rather than conforming to predetermined societal expectations. She also examined the long-term impact of adhering to or deviating from these norms on individual well-being. She was particularly interested in understanding how diverging from the conventional social clock might affect individuals' psychological adjustment, social relationships, and overall life satisfaction. By questioning whether strict adherence to age-appropriate behaviors might inadvertently limit individual development, Neugarten highlighted the potential for these norms to function as a form of social control, constraining individuals' autonomy and inhibiting their ability to pursue authentic and fulfilling lives.

Kegan's Constructive Developmental Theory

A contemporary theorist on adult cognitive development is Robert Kegan, a former Harvard psychologist. In 1982 and 1994, he developed the constructive developmental theory (CDT). While previous theories focused on action and responses to age-related stages and social norms, the CDT theory focuses on adult thought processes. **Kegan's constructive developmental theory** explains that individuals change their thought processes over time as their cognitive development progresses. The tiered structure of the CDT theory implies that individuals progress through various levels of cognitive development, with each stage representing a greater understanding of oneself and others. This advancement involves the capacity to reflect on one's thoughts and behaviors objectively, gaining insight into personal motivations and social dynamics.

Kegan's CDT focuses on the importance of adult thought processes in daily life, family life, work interactions, learning environments, and spiritual awareness. Higher cognitive thinking allows individuals to interact constructively by understanding themselves and others in a broader sense. The stages of Kegan's CDT assume that individuals progressively mature in their cognitive processes over time and derive meaning from experiences that also affect how they understand their lives and interactions with others (Table 40.3). Kegan used two critical definitions when explaining his theory. He explained that rather than adding new insight or learned tasks, adults progress through a **transformation** in which they change their thinking and understanding of the world around them. He also described a subject–object shift in which individuals move from simply understanding their character traits and interactions with the world (subject) to acquiring the ability to reflect on their traits and interactions and engage with themselves and others (object).

Kegan's Orders of the Mind Stages	Examples Related to Nursing Care
Impulsive mind—early childhood	• Understanding the fantastical and impulsive thinking of children • Focusing on safety and incorporating flexible thinking in planning nursing actions
Imperial mind—adolescence	• Focusing on supporting decision-making • Encouraging learning through asking questions and obtaining information • Explaining health promotion in terms of how actions directly affect the patient
Socialized mind—adulthood	• Involving family and significant others in decision-making • Allowing individuals to interpret and make decisions based on spiritual values • Maintaining flexibility and respect for varied values and beliefs • Supporting patients through internal struggles related to treatment options
Self-authoring mind—adulthood	• Empowering patients to be key players in their own care and treatment • Providing guided support rather than specific task-oriented treatment plans • Helping patients verbalize wishes to help family members understand treatment choices
Self-transforming mind—adulthood	• Empowering individuals to seek acceptance of changes and transformations

TABLE 40.3 Stages of Kegan's Constructive Developmental Theory

40.3 Health Risks for Young and Middle-Aged Adults

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify physiological health risks for young and middle-aged adults
- Recognize psychological health risks of young and middle-aged adults
- Explain psychosocial health risks of young and middle-aged adults

Health risks for young adults and middle-aged adults exist on a continuum. While some health risks are age related, all are influenced by long-term lifestyle choices, genetics, and social circumstances. Nurses must remember the physiological, psychological, and psychosocial differences between young and middle-aged adults, as this age spread significantly affects baseline health and health outcomes. Many health outcomes are related to individual circumstances. Disease prevention and health promotion can be maximized by understanding the wide variation in health risks for adults aged 18 to 65 years. The following are high-risk areas for young adults:

- nutrition
- safety
- healthy habits
- health maintenance
- mental health

For middle-aged adults, nurses can focus on high-risk areas, including the following:

- mobility
- cognition
- psychosocial factors
- mental health

Individualized care is crucial, as health and wellness depend on age, chronic disease, lifestyle choices, and genetics. The range of ages in this category challenges nurses to assess individuals based on the different factors that affect the health and wellness journey and make the experience unique.

Physiological Health Risks

Young and middle-aged adults experience the possibility of many **physiological health risks** that affect normal biological function. Common risks that develop in these age groups are those associated with metabolic syndrome, a constellation of disorders including high blood pressure, high blood sugar, increasing abdominal obesity, and high cholesterol levels. These conditions significantly increase the individual's risk of developing diseases such as type 2 diabetes, heart disease, and stroke. Because these conditions and disorders are interrelated, nursing interventions can be tailored to address multiple concerns simultaneously. As adults move through young adulthood into middle adulthood, their risk for various types of cancer also increases.

Malnutrition and Obesity

Adults of all ages are at risk for nutritional concerns, including obesity and malnutrition. In younger adults with poor nutritional habits, the body will counter with effective compensation. However, nutrient deficiencies can develop if individuals maintain a persistently poor diet or enter adulthood with poor nutrition and nutritional habits that began in childhood. Imbalances in nutrient intake can be referred to as malnutrition and encompasses deficiencies and excesses (World Health Organization [WHO], 2024). Malnutrition may occur from inadequate food choices or restrictive dieting, regardless of whether an individual appears underweight. This can include eating disorders such as bulimia and anorexia nervosa as well as other forms of disordered eating, such as binging, fasting, or restricting, that can affect nutrient absorption. Disordered eating can trigger micronutrient deficiencies in vitamin D, calcium, iron, and other important vitamins and minerals. Nutrient imbalances can contribute to or trigger chronic health disorders, such as obesity, diabetes, bone thinning, cardiovascular disease, and certain cancers (WHO, 2024).

To maintain health, the body must use essential nutrients from food and fluids for growth, energy, and bodily processes. Essential nutrients are those necessary for bodily functions. They must come from dietary intake because the body cannot synthesize or make them internally. Essential nutrients include vitamins, minerals, amino acids, and fatty acids. Adults require various protein sources, carbohydrates, and fats to maintain balanced nutrient intake.

Health risks develop when an individual's intake does not provide adequate nutrients and calories or their diet does not provide essential nutrients. Obesity is the most common type of malnutrition in the United States. The CDC defines **obesity** as a disorder in which an individual's weight is greater than the healthy maximum for their age and height (2022a).

By understanding the complex nature of the development of obesity and the metabolic shifts caused by obesity, nurses can provide focused care for patients. Factors that may increase the risk for obesity in otherwise healthy individuals include the following:

- overeating patterns
- poor food choices
- low physical activity
- sedentary lifestyle
- altered sleep routines
- poor sleep quality
- genetics
- low socioeconomic status

There are many health consequences of poor nutrition and obesity. Poor nutrition can lead to hair thinning, kidney failure, liver strain, and gastrointestinal disorders. Severe eating disorders can damage vital organs such as the heart, liver, and gastrointestinal tract (National Institute of Mental Health [NIMH], 2021). Obesity is by far the most

widespread nutritional disorder in the United States, with the CDC reporting a prevalence of 41.9 percent in 2017. Between 2000 and 2017, the obesity prevalence increased by 11 percent nationwide. Obesity is the strongest risk factor and predictor of other metabolic disorders, including heart disease, stroke, and type 2 diabetes (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2023). Increased mortality risk associated with obesity is due primarily to the many diseases that develop secondary to obesity, including metabolic disorders, liver disease, sleep apnea, and kidney disease, as well as those already mentioned (NIDDK, 2023).

Type 2 Diabetes

A disease defined by impaired glucose metabolism is **type 2 diabetes mellitus**. Type 2 diabetes is becoming increasingly prevalent in the adult U.S. population and is directly related to the prevalence of obesity in the nation. The CDC estimates that 38.4 million people have diabetes, whether they have been diagnosed or not. Up to a third of the adult U.S. population has **prediabetes**, a chronic abnormal elevation in blood sugar levels that is not elevated enough to be considered diabetes (NIDDK, 2024).

Prediabetes serves as the most potent indicator for the development of type 2 diabetes, yet its progression is not inevitable. Without substantial lifestyle adjustments, individuals diagnosed with prediabetes often transition to type 2 diabetes, although the timing varies from person to person. While type 2 diabetes involves chronically elevated blood sugar levels, it is not always permanent. Embracing a healthy lifestyle composed of regular physical activity, a well-balanced diet, weight management, and stress reduction can frequently enhance blood sugar management and potentially decrease or eliminate the necessity for medication in individuals with type 2 diabetes.

The development of diabetes puts individuals at risk for other health concerns that stem from damage to the vascular system. These risks include damage to tiny capillaries that supply organs and nerves. A complication associated with diabetes is **end-organ damage** caused by damage to vascular organ systems. End-organ damage can lead to or compound other metabolic disorders, significantly raising the risk of mortality in these individuals.

The most common end-organ damage and complications associated with diabetes include the following:

- kidney disease
- peripheral nerve damage
- retinal damage
- heart disease

High Cholesterol

High cholesterol is another component of metabolic syndrome often seen in individuals with diabetes and high blood pressure. Elevated blood lipid levels are highly prevalent in the adult population, with the CDC (2024b) reporting that up to 10 percent of adults have a total cholesterol greater than or equal to 240 mg/dL. Some elevated cholesterol is hereditary, but the single most significant factor affecting cholesterol levels for most people is lifestyle. Lack of physical exercise and high consumption of saturated fat increase total cholesterol. Lifestyle choices, including a high-sugar diet, also increase **triglycerides**, the most common lipids circulating in the body derived from food intake. As excess sugar is processed by the liver, it is turned into triglycerides that circulate in the bloodstream. All increased lipids put individuals at risk for vascular damage and heart disease. Specifically, fatty deposits, or **plaques**, develop on the inside of blood vessels. This deposition can happen throughout the body, particularly in the heart vasculature. These deposits slow the flow of blood and limit the oxygenation of heart tissue. The plaques can also break off and travel to distant smaller vessels, completely blocking blood flow. If blood flow is lacking to parts of the brain or heart, it can result in a heart attack or stroke.

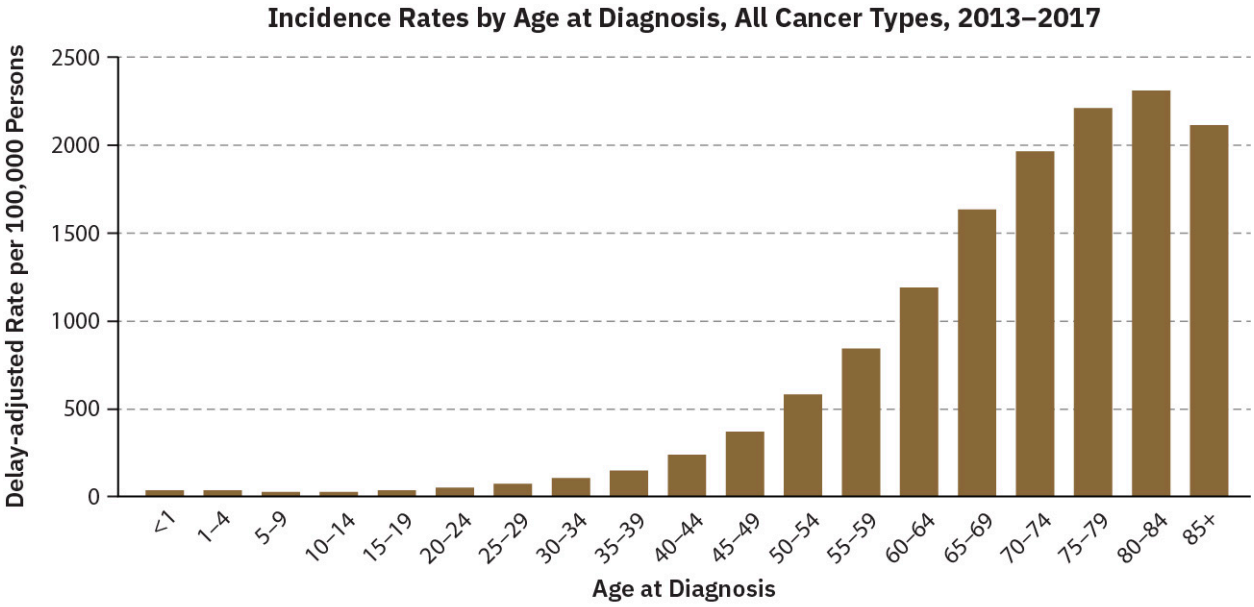
Hypertension

Hypertension (HTN) is another vascular risk factor associated with metabolic syndrome. A consistently elevated blood pressure is hypertension. Due to vascular muscle contraction, impaired fluid balance, or other chemical reactions, the blood vessels are less flexible and more rigid. This increases the diastolic blood pressure, the baseline pressure within the vessels. Consequently, the heart must exert more force to pump blood and oxygen to the body's organs. The **systolic blood pressure** is the pressure within the blood vessels when the heart contracts and moves blood peripherally. Untreated hypertension puts constant extra strain on the heart muscle, which can lead to a variety of other problems, such as kidney disease, vision loss, aortic aneurysm, peripheral artery disease, and congestive heart failure. Like diabetes, HTN is associated with end-organ damage, and the vascular pressure within the small vessels feeding organs damages the vessels. End-organ damage can be seen in the eyes, kidney, heart,

brain, and larger vessels in the chest. Heart enlargement can develop from persistently elevated and untreated HTN. People with HTN are at higher risk for stroke and heart attack.

Cancers

According to the National Cancer Institute, cancer risk steadily increases with age (Figure 40.5). Historically, cancer rates among young adults have been lower than for middle-aged and older adults. However, recent trends in cancer rates between 2010 and 2019 show a significant increase in cancers in younger adults (Koh et al., 2023; Zhao et al., 2023). Studies show that these "early-onset" cancers, particularly breast and gastrointestinal cancers, are becoming more prevalent (Koh et al., 2023). The median age for several common cancers, including breast cancer, lung cancer, and prostate cancer, is between 60 and 70 years old (National Cancer Institute, 2021). Although it is much more common to be diagnosed with cancer in later middle adulthood, cancer is still a risk for adults of all ages.



Source: National Cancer Institute/SEER. (2021). National Institutes of Health.

FIGURE 40.5 Overall cancer risk steadily increases throughout adulthood, with significant increases noted during middle adulthood. (credit: modification of work from *Lifespan Development*. attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

LINK TO LEARNING

Colon cancer is a common and often treatable cancer that typically arises during middle adulthood. New guidelines for colorectal cancer screening (https://openstax.org/r/77ColonCancer) were put out in 2021 by the U.S. Preventive Services Task Force (USPSTF). The new recommendations changed from initial screening at age 50 years to age 45 years.

Several known risk factors predispose individuals to certain types of cancer (Table 40.4).

Risk Factors	Cancer Type
• Older age	• Lung • Breast • Prostate
• Heavy alcohol use	• Mouth • Throat • Esophagus • Larynx • Liver • Breast
Environmental exposures: • Work environment • Mining • Air pollution • Water pollution • Foods	• Lung • Various other
Chronic inflammation: • Obesity • Chronic dental infections • Crohn disease • Ulcerative colitis	• Colorectal • Gallbladder • Breast • Liver • Prostate
Dietary: • Deficiencies • Excess sugar • Food additives	• Endometrial • Breast • Kidney • Prostate
• Estrogen dysfunction • Genetic mutations	• Breast • Uterine • Ovarian
• Immunosuppression after organ transplant • HIV infection	• Non-Hodgkin lymphomas • Lung • Kidney • Liver
• Obesity	• Breast • Colorectal • Endometrial • Esophagus • Kidney • Pancreas • Gallbladder

TABLE 40.4 **Cancer Risk** (Adapted from the National Cancer Institute, 2021.)

Risk Factors	Cancer Type
• Radon • Nuclear test or development sites • Excess CT scanning	• Lung • Leukemias • Others
• UV damage	• Skin cancer
• Tobacco	• Lung • Larynx • Mouth • Esophagus • Throat • Bladder • Kidney • Liver • Stomach • Pancreas • Colon • Rectum • Cervix • Acute myeloid leukemia

TABLE 40.4 **Cancer Risk** (Adapted from the National Cancer Institute, 2021.)

CLINICAL JUDGMENT MEASUREMENT MODEL

Recognize Clues: Lung Cancer Risk

When patients seek care for health screenings, nurses must be alert for their specific disease risk factors. Many individuals do not know the recommended guidelines for routine health screenings and rely on nurses and other healthcare providers to recommend screening tests at the appropriate times. In reviewing health history, a patient may inform the nurse that they "quit smoking a while ago." The nurse will recognize this as a cue to ask for additional information. The patient may then divulge that they made a New Year's resolution to quit smoking and stopped "cold turkey" two weeks ago. The nurse will have determined the patient had smoked one pack per day for the last twenty-five years. The nurse recognizes that this patient qualifies for a low-dose lung cancer screening CT per USPSTF guidelines. These screening criteria include the following:

- age 50 to 80 years
- twenty-pack-year smoking history
- currently smokes cigarettes or quit within the past fifteen years

Psychological Health Risks

The **psychological health risks** in young and middle-aged adults encompass many of the same risks as adolescents and older adults, including anxiety, depression, and suicide. However, underlying stressors, mental health challenges, and family dynamics differ significantly between individuals. Factors affecting psychological health for adults include work environment, family dynamics, changes in family structure, financial strain or stress, educational pursuits, social pressures, child-rearing, death of loved ones, and caregiver fatigue in caring for parents. While the causes and contributors can be different, the manifestations of mental health concerns are similar among adults.

Anxiety

According to the American Psychological Association (APA) (n.d.-a), anxiety is a general term used to describe an emotional state in which an individual experiences tension, nervousness, and worry. Common physical symptoms associated with anxiety include elevated blood pressure, sweating, dizziness, and tachycardia (elevated heart rate). Anxiety is typically worry focused on future events or anticipated threats that are not readily identifiable. Anxiety encompasses several mental health disorders, including the following:

- generalized anxiety disorder (GAD)
- panic disorder
- specific phobias
- agoraphobia (fearing places or situations that might cause feelings of being trapped)
- social anxiety disorder

According to the APA (2023), nearly one-third of individuals experience acute or chronic anxiety at some point in adulthood. Data from the CDC in 2022 indicated that 12.5 percent of adults reported experiencing anxiety (CDC, 2022c).

Anxiety may be related to specific life circumstances or develop with other mental health disorders, such as depression. Mild anxiety is more common than severe anxiety and can often be treated without medication, as interpersonal therapeutics and coping strategies are often effective. In moderate to severe anxiety disorders, individuals are limited in their ability to maintain normal daily function due to intrusive thoughts and worries that are out of proportion to actual or perceived threats. These **intrusive thoughts** are disruptive thoughts or mental images that are associated with anxiety triggers that interrupt normal thought processes. These thoughts, in turn, cause behaviors such as avoiding specific circumstances, individuals, or groups. Treatment is necessary when anxiety levels affect an individual's ability to perform work, take care of their family, manage daily tasks, or feel contentment.

The APA (2023) lists the percentage of adults who experience common anxiety disorders in adults:

- specific phobias (8 to 12 percent)
- social anxiety disorder (7 percent)
- panic disorder (2 to 3 percent)
- generalized anxiety disorder (2.9 percent)

While specific phobias are highly variable, social anxiety disorder is common among adults. It occurs when a person worries about experiencing embarrassment, humiliation, and rejection from others during social interactions. Common responses to social anxiety are avoidance of activities such as public speaking, participating in activities requiring meeting new people, and significant group situations (Mayo Clinic, 2018).

A **panic disorder** is characterized by anxiety associated with recurrent panic attacks (Mayo Clinic, 2018). Panic attacks are often associated with other mental health disorders, such as depression. A **panic attack** may look different for different individuals but typically includes a combination of physical symptoms that may include the following:

- chest pain
- sweating
- trembling
- tachycardia
- dizziness
- throat tightening
- tingling in the face or extremities
- chills
- nausea

LINK TO LEARNING

Differences between the symptoms of a heart attack and the symptoms of a panic attack (https://openstax.org/r/77HrtAttackSymp) are explained by the American Heart Association. Nurses can educate patients who experience panic attacks on how to read clues from their bodies to help differentiate these symptoms.

Depression

A mental health disorder known as depression is one in which individuals feel persistent and extreme sadness that leads to despair, interferes with normal daily activities, and disrupts sleep and energy patterns. The following are common symptoms experienced by adults with depression:

- trouble sleeping
- lack of interest in previously enjoyed hobbies and activities
- guilt
- low energy
- trouble concentrating
- change in appetite leading to weight loss or weight gain
- symptoms of anxiety or panic
- thoughts of death or suicide

Depression is highly prevalent, with the CDC (2023a) reporting that nearly 5 percent of adults in 2022 experienced depressive symptoms at some point in their lives. In that same timeframe, 11 percent of medical office visits were related to depression.

Anxiety and depression are commonly linked, with these disorders often occurring simultaneously or in succession. Nurses can help identify individuals experiencing depression by administering the Patient Health Questionnaire-9 (PHQ-9), a self-administered screening tool used to assess the severity of depression symptoms in individuals, per facility protocol, and monitoring for changes in patient affect. Monitoring for risk factors such as illness diagnosis, bereavement, significant life transitions, recent traumatic events, medication adverse effects, and substance use, which may exacerbate or precipitate depression, is another proactive approach nurses can take in identifying this mental health condition.

LINK TO LEARNING

The PHQ-9 Questionnaire (https://openstax.org/r/77PHQ9Questions) helps nurses and healthcare providers quickly screen individuals for depression whether or not they are actively seeking care for mental health.

Suicide

The National Institute of Mental Health (NIMH, 2023) defines suicide as the act of intentionally causing one's own death through self-inflicted injury with the intent to end one's life. Suicide is closely linked to depression, abuse, emotional trauma, and other mental health disorders. Suicide is prevalent in the adult population. Among various demographic groups, adults between 25 and 34 years of age have the highest number of suicide deaths (NIMH, 2023). After the age of 35 years, the suicide rate is similar across adult age categories. Suicide is nearly four times more common in persons AMAB than persons AFAB across all age and racial groups. The overwhelming majority of suicides in the United States occur in White males (CDC, 2023e).

LINK TO LEARNING

Nurses in all practice settings should be alert for signs of mental health crisis and encourage patients to use community services in times of crisis, such as the National Suicide Lifeline (https://openstax.org/r/77SuicideHelp) where help is available.

Psychosocial Health Risks

For young and middle-aged adults, psychosocial health risks are most prominently linked to home and workplace environments. Learning environments, such as college or university settings, are also related to psychosocial risks for adults of all ages. Physical activity and risk-taking are typically higher in younger adults; however, unintentional injuries are common in all adult age groups. Challenges with interpersonal violence can occur at various levels for adults, including domestic abuse, workplace hostility, verbal hostility, or physically violent interpersonal interactions. Substance use and misuse are common among adults and contribute to detrimental effects on mental health disorders, social interactions, mortality rates, and life satisfaction. It also puts individuals at risk for health disorders, both acute and chronic, associated with substance use disorders.

Unintentional Injuries

Unintentional injuries are common in adults (CDC, 2023c). The cause of unintentional deaths has changed over the last forty years, from motor vehicle accidents (MVAs) being the most common to unintentional overdose being the most common in 2021 (CDC, 2023c). Unintentional injuries include injuries and death from, in order of prevalence, unintentional overdose (poisoning), MVAs or traffic accidents, drowning, and falls. Unintentional injuries are accidental but may be related to specific lifestyle risks, including substance use, impaired driving, and activities involving physical risks, such as high-intensity and risky sports.

Interpersonal Violence

The intentional use of physical force or power against another person or group that results in or has a high likelihood of resulting in injury, death, psychological harm, or deprivation is **interpersonal violence**. It can be associated with both physical and emotional abuse and may be encountered in domestic relationships, the workplace, or altercations with strangers. Homicide has remained one of the five leading causes of death in adults between 1981 and 2021 (CDC, 2023c). The risk of homicide or other interpersonal violence is exacerbated by substance use and misuse.

Domestic or intimate partner abuse can include sexual violence, physical violence, stalking, and psychological aggression. Although this form of violence is more commonly experienced by persons AFAB, it can also be experienced by persons AMAB. Anyone, regardless of sexual identity, can be involved in an intimate relationship that becomes abusive or violent. In addition to intimate partner violence, the workplace is also a common place for individuals to experience violence or hostility.

The Occupational Safety and Health Administration defines workplace violence as the threat of violence or actual violence in the workplace. Workplace violence may include the following:

- physical violence (direct or indirect)
- verbal harassment
- sexual harassment
- threatening behavior or words

Workplace violence can involve coworkers, managers, supervisors, clients, and customers. The following are risk factors:

- exchange of money
- working with unstable individuals
- work environment where alcohol is served
- working alone
- working in isolated areas
- working late at night
- working in high-crime neighborhoods

The following are specific jobs or careers with a higher risk for workplace violence:

- delivery drivers
- healthcare professionals
- customer service agents
- public service personnel

- law enforcement personnel

Nurses can support patients by bringing awareness to workplace violence and ensuring that individuals know their rights to safety and how to seek assistance, when necessary.

LINK TO LEARNING

In cooperation with the National Institute for Occupational Safety and Health, the CDC offers a Workplace Violence Prevention for Nurses (https://openstax.org/r/77NurseViolHelp) course.

Alcohol and Drug Use

Alcohol and drug use is prevalent in the United States, and the widespread use and misuse of mind-altering substances are increasing. While moderate alcohol consumption may be safe for some individuals, it is essential to make informed decisions about alcohol use and consider individual circumstances and risks. Alcohol consumption in moderation may be safe for individuals without underlying health disorders such as liver disease, history of substance use or addiction, and mental health disorders. In addition, some medications have negative interactions with alcohol. Excessive alcohol use is associated with 20 percent of deaths in individuals between the ages of 20 and 49 years (Esser et al., 2022).

The CDC (2024a) reports that up to 16 percent of adults binge drink by consuming four to five or more drinks on one occasion; however, many consume up to eight drinks per occasion. The health effects of heavy and binge drinking include increased mortality due to health problems such as the following:

- hypertension
- heart disease
- stroke
- liver disease
- cancer (e.g., mouth, throat, larynx, esophagus, colon, liver, and breast)
- injuries (e.g., MVA, falls, drowning, burns)
- violence (e.g., homicide, suicide, sexual assault)
- poisoning (e.g., overdose with alcohol or combination with another substance)

Legal drugs associated with dependence and misuse include nicotine products such as cigarettes, vaping, and chewing tobacco. Illicit drug use or misuse involves the use of illegal or controlled substances. These include prescription opioids, marijuana, cannabinoids, cocaine, crack, hallucinogens, inhalants, and methamphetamine, among others. Excessive or improper use of drugs or alcohol that may result in physical, mental, and social harm is known as **substance misuse** or **substance abuse**. This category also includes the misuse of psychotherapeutic prescription drugs such as pain relievers, stimulants, sedatives, and tranquilizers. The National Institute on Drug Abuse (NIDA) defines **medication misuse** as using these medications in any way other than as directed by the prescribing healthcare provider (NIDA, 2020).

Between 1999 and 2022, opioid overdose deaths in the U.S. increased by 22 percent, with this significant rise attributable to the use of prescribed or illicitly manufactured synthetic opioids such as fentanyl (NIDA, 2024). While these drugs are commonly implicated in overdoses, drug combinations are frequently suspected in these cases. High-risk medications include other opioids, benzodiazepines, alcohol, psychostimulants, and antidepressants. Up to 40 percent of these deaths also involve stimulants.

Problematic drug use can encompass both prescription and illicit drugs. Illicit drug abuse includes substances such as cocaine, heroin, and fentanyl. The CDC (2023b) reports that between 2006 and 2016, the rate of death from drug overdose in the U.S. population increased by 72 percent (Figure 40.6).

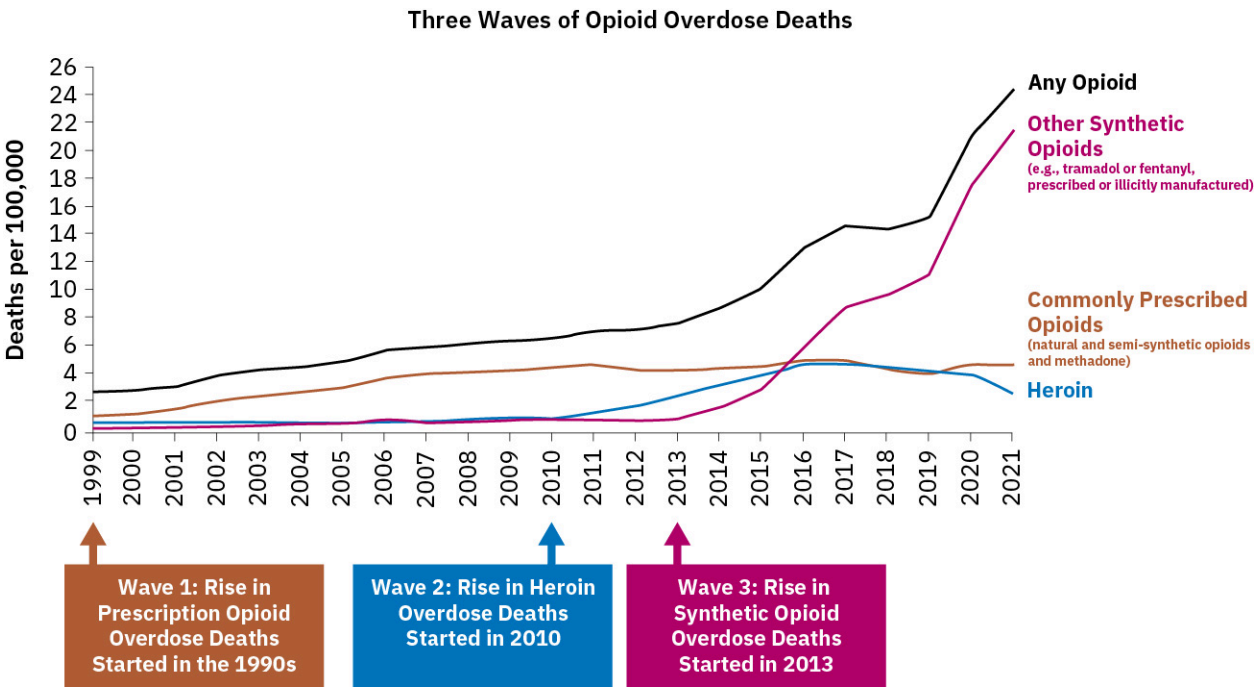


FIGURE 40.6 The number of opioid deaths from synthetic opioids has drastically increased in the last eight years, highlighting the cause of the opioid epidemic. (credit: modification of "3 waves of opioid overdose deaths. US timeline" by Centers for Disease Control and Prevention./Wikimedia Commons, Public Domain)

Nurses must consider the impact of the terms used to describe problematic substance use in their interactions with patients, families, and among other professionals. The term "abuse" is accepted and widely used in literature, research, education, and policies. However, the term can associate wrongdoing or blame with the patient, and may lead to explicit or implicit bias on the part of nurses as well as law enforcement, social workers, and others. While "abuse" and "abuser" need not be completely eliminated in the context of substances, they should be used with care, and replaced where possible with words like "misuse," which conveys the same meaning without the same negative stigma.

PATIENT CONVERSATIONS

Herbal Substance Use

Scenario: Candace is a 28-year-old patient who lives in a basement apartment of her parents' home. She moved into this apartment after losing her job as a barista and being unable to make rent payments. She has been looking for employment but is struggling to find a job close to her home because of limited transportation. She presents to her primary care provider's office to discuss her concerns about anxiety and ADHD. Candace becomes tearful as the nurse takes her vital signs, reporting that she feels out of control and like she can't get her life on track.

Nurse: How long have you been noticing these symptoms?

Patient: I started feeling anxious when I lost my job as a barista and had to move back in with my parents. Everything is going okay with my parents, they are supportive. But I feel overwhelmed. I wonder if I have ADHD because I just can't seem to concentrate, and I feel jittery a lot.

Nurse: Did you have any struggles with depression or anxiety when you were younger? Did you ever have to take medications for depression or anxiety?

Patient: No, I always did pretty well in school and was never a worrier.

Nurse: Are you using any legal or illegal drugs like alcohol, marijuana, or prescription medications?

Patient: I drink with my friends occasionally, maybe two drinks per week on average. I haven't been sleeping very well, so I have been drinking more energy drinks than usual, and I take an herbal supplement that is supposed to

help with energy.

Nurse: How many energy drinks do you have in a day? Do you know the name of the herbal supplement or what is in it?

Patient: I have one energy drink per day at the most. The herbal supplement is kratom; it is legal, and I buy it at the convenience store.

Nurse: I am concerned that if you have not struggled with ADHD or anxiety in the past, the kratom may be contributing to your symptoms. When kratom is digested, it affects the brain and body in a way similar to opioid drugs. It could cause you to feel symptoms ranging from jitteriness to alertness and sedation. The preparations available are not standardized, so it is difficult to be sure how much you are taking. Also, since these supplements work on opioid receptors in the brain, they can be hard to stop taking, and sometimes, you begin to feel that you need more to get the same effect. I will make sure your healthcare provider discusses alternatives for you and explains how you can stop taking this supplement without side effects.

Patient: Thank you for explaining this. I thought kratom was pretty safe since it is available everywhere. I hope my symptoms improve when I stop taking this.

40.4 The Nurse's Role in Preventing Illness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify nursing considerations for young and middle-aged adults
- Recognize interdisciplinary team referrals for young and middle-aged adults

Nurses are instrumental in preventing accidents and illnesses among typically healthy young and middle-aged adults, with health promotion standing out as one of their paramount responsibilities. Educating individuals on age-appropriate health screening and coordinating care at the first sign of illness are crucial for early disease detection and minimizing the health consequences of disease. Through rapport and nonjudgmental relationship building with patients, nurses can identify risks and prevent injuries associated with drug use, mental health disorders, and metabolic diseases. Education on health-supporting habits is one of the primary tasks for nurses caring for young adults, as forming healthy habits in young adulthood correlates with a longer, healthier life. By using screening tools for mental health and substance use disorders, nurses can ensure that patients have the support tools they need to make choices that support their wellness throughout life.

Nursing Considerations for the Young and Middle-Aged Adult

Nurses can lead education, health promotion, and risk prevention by understanding the biggest challenges for young and middle-aged adults. Nurses can strive to provide individualized and compassionate care in a nonjudgmental and inclusive environment, accepting each individual and the specific challenges they face. Essential aspects of nursing care in the adult population include self-care habits, such as healthy eating, exercise, and disease prevention. To address psychological challenges, nurses can recognize the need for mental health screenings. Nurses will also collaborate with specialists and ancillary healthcare professionals, including primary care providers, mental health specialists, disease-specific specialists, nutritionists, social workers, physical therapists, and occupational therapists.

Teach Self-Care Responsibilities

Young adulthood is an opportune time for nurses to focus on promoting adult self-care responsibilities. This is especially true for young emerging adults. One of the most basic self-care responsibilities is seeking appropriate health care for acute injuries or illnesses. Sleep hygiene is also of great importance, as chronic lack of sleep is associated with various health risks and conditions. Acute sleep deprivation results in poor judgment and coordination, which may result in injuries and poor work performance. Chronic lack of sleep is associated with many specific health consequences, including depression, anxiety, obesity, hypertension, and diabetes (Alexander, 2024). Nurses can encourage and teach simple sleep hygiene measures, such as limiting screen use within one hour of sleep, using meditation exercises, keeping a consistent bedtime, getting exposure to sunlight, not eating within two hours of going to bed, and managing caffeine intake.

Additional self-management practices that nurses can promote include time management, financial management, and unplugging from devices and screens. Nurses should freely offer patients advice on encouraging lifelong hobbies and finding a community with shared interests. Self-management also involves awareness of emotional well-being. Nurses can guide patients to recognize new or worsening mental health concerns and encourage them to seek professional care from a mental health specialist as needed.

REAL RN STORIES

Replacing Screen Time with Nature Time

Nurse: Roni, BSN
Clinical setting: Occupational health nurse
Years in practice: 18
Facility location: Arkansas

I've worked as an occupational health nurse for a large hospital for fifteen years. I work with healthcare providers, nurses, kitchen staff, maintenance staff, and others, helping them maintain health and recover after an injury or illness. In recent years, I have encountered many individuals who struggle to manage their screen time during and outside work. These patients report that this interferes with many parts of their lives, including work productivity, family time, and friendships. I've read a lot about including or reintroducing outdoor time and nature activities to improve a variety of health concerns, such as anxiety, feelings of stress, and interpersonal struggles. There has been a lot of research recently on the effect of nature on mental health and improving thinking and planning skills. I keep a list handy of the many benefits, including the following:

- increased mood
- sense of connection to place
- increased empathy
- improved ability to cooperate with others
- improved attention at work
- increased energy

(Weir, 2020)

There are many theories about why time in nature calms the brain and reduces stress. Regardless of the reason, the most important aspect that I discuss with my patients is that spending even small amounts of time in nature, and even if they live in urban areas, has a positive effect on their well-being. This is all based on up-to-date scientific evidence. Adding a walk that is a bit of exercise is an additional boost. I suggest a few quick ideas for engaging with nature, even during a stressful workday for my patients:

- Take a walk on your lunch break.
- Take your five-minute break outside without your phone.
- Do a five-minute breathing exercise outside before tackling a difficult task.
- Make note of nature sounds or smells outside as you walk to and from your car.
- Gaze at the stars instead of your phone during your break (for night shift workers).

Good health habits built in early adulthood set the stage for positive health habits throughout adulthood, which may help reduce the risk of disease over time. Nurses should encourage self-screening techniques, such as breast self-exams (BSEs) and testicular self-exams (TSEs). While these tests are not a replacement for mammograms or regular checkups with a healthcare provider, they encourage individuals to monitor their health and maintain an awareness of their bodies. Patients come to understand their body's norms and can immediately report changes to their healthcare provider. While focusing on building healthy habits in young adulthood is the most efficient way to help create lifelong self-care routines, adults of any age can be encouraged to learn and improve these habits.

LINK TO LEARNING

The BSE (https://openstax.org/r/77BSE) and TSE (https://openstax.org/r/77TSE) are essential aspects of self-care in disease prevention. Nurses can review techniques to make patients aware of these important self-exams and properly educate patients on how to perform them.

Provide Health-Related Screenings

A primary role of nurses in health promotion is to ensure that individuals know which health screenings are recommended for them and when. As individuals get older, additional health screenings will become important. The United States Preventive Services Task Force (USPSTF) provides screening guidelines based on research and healthcare organization specialty guidelines, such as the American Heart Association and the American Congress of Obstetricians and Gynecologists. These include blood tests, cytology, radiology, genetic counseling, and procedures (Table 40.5).

Screening Test	Young Adult Screening Recommendations	Middle-Aged Adult Screening Recommendations
BRCA genetic counseling	Brief familial risk tool, if positive, genetic counseling recommended	Brief familial risk tool, if positive, genetic counseling recommended
Breast cancer screening—mammography	• Mammography based on special circumstances, family history before age 40 years • Begin routine yearly screening at age 40 years	Once every two years between ages 50 and 74 years
Cervical cancer (persons assigned female at birth)—Pap smear cytology	Begin at age 21 to 29 years, every three years	Continue Pap smear cytology testing from ages 25 to 65 years, every three years
Sexually transmitted infection	Based on sexual activity and risk	Based on sexual activity and risk
Lipids—screening blood test	Begin screening at age 20 years	Continue yearly through age 80 years
Diabetes—screening blood test	Starting at age 20 years	Continue yearly through age 80 years
Colon cancer—colonoscopy	Earlier screening based on family or personal history	Start routine screening at age 45 years
Prostate (persons assigned male at birth)—PSA blood test	N/A	Start routine screening at age 50 years
Lung cancer screening—low-dose CT scan	N/A	Begin screening at age 50 years based on risks and smoking history

TABLE 40.5 Preventive Screening Tests by Age (Adapted from USPSTF, 2024.)

Screening Test	Young Adult Screening Recommendations	Middle-Aged Adult Screening Recommendations
Osteoporosis—dual-energy x-ray absorptiometry scan	N/A	• Persons assigned female at birth start age 65 years • Persons assigned male at birth based on risk
Abdominal aortic aneurysm (AAA)—AAA ultrasound	N/A	Begin at age 65 years based on risk
Hepatitis C/HIV	Begin at age 18 years; all adults screened once	Additional screening based on risk

TABLE 40.5 Preventive Screening Tests by Age (Adapted from USPSTF, 2024.)

CULTURAL CONTEXT

Cultural Beliefs in Breast Cancer Screening

The USPSTF recommends regular breast cancer screening for all persons AFAB beginning at age 40 years. A recent study found that the participation rate of Korean American persons AFAB in breast cancer screening is low in the United States. While access to care may explain part of the low screening rates, culture may also play a role. Cultural factors that affect whether individuals seek breast cancer screening can include the following:

- low level of family encouragement
- embarrassment
- lack of preventive health orientation
- crisis-oriented healthcare perspective
- language barriers
- belief in fatalism

Maintaining an accepting, nonjudgmental attitude toward patients' preventive care choices is crucial for nurses. Nurses can provide adequate, timely education on preventive screening, such as breast cancer screening. It may be necessary to include education on preventive screenings during visits for other health concerns, especially for individuals who do not actively seek preventive care.

Teach Disease Prevention

Nurses are vital sources of information about disease prevention. This includes education on health promotion and screening as well as preventing specific acute and chronic diseases, such as diabetes, cardiovascular diseases, sexually transmitted infections (STIs), and community-acquired diseases. These may include teaching about the following:

- physical exercise
- mental health coping strategies
- prevention of STIs
- vaccine recommendations for preventing disease
- nutritious food choices that may help prevent disease

While many individuals will not achieve or maintain prime health status, an essential part of nursing is educating patients about choices that will support their best possible health. That said, health looks different for each individual and is based on their genetic and lifestyle risk factors.

LINK TO LEARNING

Familiarize yourself with the CDC's STI fact sheets (https://openstax.org/r/77STIFactSheet) to help guide patient discussions on STI prevention, risks, and treatments.

Encourage Physical Activity

Physical movement is one of the most influential aspects of a healthy lifestyle and disease prevention. The benefits of physical exercise are well-known and include the following(WHO, 2022):

- reduces disease risk
- improves brain health
- increases muscle strength
- increases bone strength
- boosts mood and health neurochemicals
- relieves stress, anger, and anxiety
- reduces or maintains healthy weight
- improves sleep quality

Physical movement and exercise plans should be based on a patient's preferences and abilities and are not a one-size-fits-all plan. Adults of all ages should aim for 150 minutes of moderate-intensity physical movement per week, in addition to at least two days of muscle-strengthening activities (Table 40.6). While this goal is the standard recommendation, nurses can encourage each individual to create a physical movement plan according to their schedule and preferences. Many people find that mixing up activities within a predictable routine helps them consistently fit exercise into their daily lives. Gym memberships are one option; however, individuals should be encouraged to move their bodies even if a gym membership is not something they can afford or want to invest in. Modifications or individual health needs or limitations need to be considered to ensure an individual can stick with a movement plan over time. The goal of the plan should be health promotion and strength building.

Strength Training Exercises	Moderate Aerobic Exercises	Vigorous Physical Exercises	Mind-Body Exercises
Pilates	Swimming	Biking	Yoga
Weightlifting	Brisk walking	Uphill hiking	Tai chi
Body-weight training	Water aerobics	High-intensity interval training (HIIT)	Pilates
Resistance training	Dance	Running	Qigong
	Tennis	Lap swimming	
	Yard care	Basketball	
		Tennis	

TABLE 40.6 Physical Exercise Categories

Exercise is a powerful way to combat the changes associated with aging. Exercise builds muscle, increases metabolism, helps control blood sugar, increases bone density, and relieves stress. However, fewer than half of midlife adults regularly exercise, and only about 24 percent exercise frequently and strenuously enough to achieve health benefits (Elgaddal et al., 2022). The best exercise programs are those that can be engaged in regularly, regardless of the activity. However, a well-rounded program that is easy to follow may include activities such as walking and weight training. Having a safe, enjoyable place to walk can make a difference in whether a patient takes

walks consistently as part of their daily habits. Weightlifting and stretching exercises at home can also be part of an effective movement program. Exercise is beneficial in reducing stress in midlife. Walking, jogging, cycling, or swimming can release the tension caused by stressors. Learning relaxation techniques can also have health benefits. Exercise can be considered preventive health care. Promoting exercise can reduce healthcare costs by reducing chronic disease risk and incidence and improve quality of life on an individual as well as societal level.

Teach Coping Mechanisms

Nurses often encounter adults in the setting of acute illness or chronic illness, so teaching coping skills is another important task when providing care. Nurses can set an example by encouraging coping skills in themselves and coworkers. Nurses are subject to high levels of stress and **compassion fatigue**, which occurs when individuals in a caregiving role experience signs of burnout and emotional fatigue from caring for others. A state of emotional, physical, and mental exhaustion caused by prolonged stress and excessive workload is called **burnout** and is often associated with work-related responsibilities and caregiving roles. Coping mechanisms can help manage disorders such as depression and anxiety as well as have a bolstering effect when faced with acute stressors such as new medical diagnoses or injuries. Nurses can focus on teaching active and passive coping strategies to patients. Nurses should encourage adults to seek active coping strategies, such as support groups, calming techniques, yoga, meditation, social support groups, problem-solving, and active lifestyle change planning. Passive coping strategies refer to methods individuals use to deal with stress or difficult situations by avoiding or withdrawing from them rather than actively addressing or attempting to resolve them. Sometimes, engaging in passive strategies such as distraction, mindfulness, and relaxation is helpful before jumping into active coping.

REAL RN STORIES

Joyfulness as Self-Care

Nurse: Vi, BSN
Clinical setting: Outpatient oncology infusion
Years in practice: 20
Facility location: Pennsylvania

As a hospital nurse for fifteen years, I encountered many patients coping with acute illness who dealt with their diagnosis in a variety of ways, both positive and negative. Many of these patients were in acute crisis. I have worked in an oncology outpatient infusion center for five years now. It wasn't until I met Janine that I understood the importance of healthy coping strategies for maintaining health in the presence of disease. Janine is a 60-year-old grandmother who was diagnosed with recurrent breast cancer after a fifteen-year remission. She told me that during her first encounter with cancer, she felt high levels of stress, became emotionally depressed, and focused only on her disease treatment. She was determined to see her sons graduate high school. She also explained that during that time, she was given a lot of information on how to cope but was never really able to implement the "self-care" activities that others suggested. She explained that over time, she realized that the "best" coping strategy is the one that works for the individual. When she was diagnosed a second time, she made a conscious effort to keep her focus on her joys and gratitude. She continued seeing her grandchildren, taking long walks in the forest with her dog, and cooking nutritious meals with her husband. While the cancer treatment was necessary, she told me that her strategy for coping with stress was maintaining a balance between disease treatment and the joys in her life. I always keep this story in mind when counseling others on coping strategies. During infusions, I help patients identify coping strategies by discovering what is important to them, what activities bring them joy, and how they interpret health. We also talk about how health does not always mean the absence of disease—rather, it's a sense of well-being amid disease.

Interdisciplinary Team Referrals

Nurses ensure that individuals receive proper referrals from interdisciplinary team members. These referrals are needed to address many aspects of patient care. In young and middle-aged adults, specialty healthcare providers are necessary to address specific health disorders beyond the scope of a primary care provider. Nurses help facilitate referrals by ensuring proper screening and documentation are completed, scheduling appointments, and communicating with patients and office staff. Communication with the interdisciplinary team members can be by

phone, email, and internal communication networks in larger healthcare facilities. Nurses can also ensure that patients understand the reason for the referral, know what to expect during the referral process, and have a plan for continuity of care in the interim. Referrals to other interdisciplinary team members correlate with specific patient needs such as mental health treatment, nutrition guidance, and case management services to address socioeconomic impacts of health.

Mental Health

Screening with mental health questionnaires, such as the PHQ-9, guides nurses and healthcare providers through identifying individuals who need more specialized care. When caring for patients with mental health disorders, it is important to convey that they are not alone in their feelings and experiences. It is also critical to support appropriate medication adherence to help patients manage the symptoms of mental health disorders.

Depending on the mental health disorder, a specialist referral may be necessary. While depression and anxiety are frequently treated successfully in the primary care setting, a focus on behavioral health or mental health care is necessary for individuals with treatment-resistant disorders (such as depression) or complex disorders such as bipolar disorder, schizophrenia, and ADHD.

Screening for mental health and other behavioral conditions guides nurses in determining if a referral to a mental health specialist is indicated. Mental health specialists and psychiatrists are the key players in diagnosis and treatment. Other patients may need more assistance with counseling and adjunctive care, in which case referral to a counselor or cognitive behavioral therapist (CBT) is essential.

There is much research interest in developing more effective medications for mental health conditions, but individuals must have access to the newest treatments. Healthcare providers need to be skilled and knowledgeable in prescribing treatments. Even individuals who successfully manage their medications in the primary care setting may benefit from CBT or other types of counseling and therapy that require specially trained providers. The addition of CBT to pharmaceutical therapy significantly increases the likelihood of depression remission and sustained improvement (Gautam et al., 2020).

Nutrition

As individuals age, their caloric needs typically decrease. In response to weight gain, many Americans turn to dieting. However, simply reducing food intake does not guarantee a balanced diet, often resulting in vitamin and mineral deficiencies. Consequently, middle-aged individuals frequently encounter such deficiencies when restricting their calorie intake. To address this issue, providers often advise middle-aged patients to incorporate vitamin supplements into their diets.

Nurses play a key role in providing nutrition education. Nurses can help patients develop healthy eating habits that align with their preferences and health conditions, such as diabetes, hypertension, high cholesterol, or gastric disorders. Focusing on whole foods, fruits and vegetables, and whole grains and encouraging the limitation of processed, refined, and manufactured foods are general dietary recommendations that benefit nearly all patients.

Specialists

Specialists in many fields collaborate with nurses on the patient care team (Table 40.7). While many disorders in young and middle-aged adults are managed through a primary care provider, specialty physician consultation is often needed, particularly if the diseases are resistant to the usual treatment or require more advanced interventions or experimental therapies. In addition, consultation with experts in diabetes care, cancer care, and mental health is essential for providing optimal patient care.

Specialist Care	Diseases Treated
Endocrinology	• Diabetes • Thyroid dysfunction • Hormone dysregulation
Rheumatology	• Rheumatoid arthritis • Acute vasculitis
Hematology	• Leukemia • Anemia
Cardiology	• Hypertension • Heart disease • High cholesterol • Heart dysrhythmias
Dermatology	• Skin cancer • Mole changes
Gynecology	• Breast, uterine, ovarian, cervical conditions
Urology	• Urinary conditions • Prostate conditions
Infectious disease	• Chronic infection • Rare infections • Communicable diseases
Gastroenterology	• Celiac disease • Intractable gastroesophageal reflux disease • Crohn disease • Irritable bowel syndrome • Ulcerative colitis
Orthopedics	• Skeletal pain • Acute musculoskeletal injuries

TABLE 40.7 **Specialist Care**

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Teamwork and Collaboration

Definition: Function effectively in an interdisciplinary team, focusing on appropriate communication and individualized patient care.

Knowledge: Nurses working in various settings must collaborate with diabetes educators. This may include

collaboration for individuals with new-onset diabetes, treatment-resistant disease, and those struggling to cope with the disease. A team approach will provide the patient with the most up-to-date care options and foster relationships with specialized providers such as diabetes educators who focus exclusively on promoting health in this population.

Skill: Nurses can be alert for signs of a patient struggling with diabetes management. The nurse can lead by suggesting a referral to a diabetes educator to collaborate on treatment. The nurse will keep the patient at the team's center, always providing input and encouraging choices to empower them to feel a sense of control over their health.

Attitude: Maintain good communication between the healthcare provider, diabetes educator, and patient, particularly during treatment changes and follow-up.

Social Worker

Social workers are key collaborators for nurses, particularly in challenging cases. Social workers help guide care and resources for patients with substance use disorders, inadequate housing, financial distress, and life-threatening diseases. Social workers are also beneficial for adults with underlying mental health or chronic physical disorders that require long-term and complicated treatment plans. For example, nurses may work directly with social workers to create a long-term plan for a patient discharged from the hospital. In this case, the social worker evaluates the needs of the patient and family prior to discharge and helps the patient navigate community resources to meet their needs, such as financial relief, respite care, or nutrition services. Social workers will communicate with nurses working in inpatient, outpatient, long-term care, and specialty care settings and provide invaluable information about the ongoing and changing needs of the patient. Social workers and nurses work together to create care plans focusing on the whole person.

Summary

40.1 Growth and Development Stages

The adult life span stage encompasses adults aged 18 to 64 years. Adults experience many significant changes over that period but with great variation that the nurse must be aware of. While many developmental changes follow a timeline, the challenges are not universal. Nurses across all specialties need to be equipped to provide individualized and flexible care for adults of all ages.

Prominent growth and development patterns in the young adult years include psychological changes associated with increased independence, changing social networks, and continued brain development. Physical health in young adulthood is often at peak levels. However, lifestyle choices during this stage may predispose individuals to disease later in life. Lifestyle choices made in young adulthood may have long-term health consequences affecting the person's risk for cardiovascular disease, diabetes, and mental health disorders.

Growth and development patterns in middle adulthood are based on a multitude of physical changes. These may be physical changes in the skin, musculoskeletal, and urinary systems, as well as physiological changes such as menopause and atherosclerosis. Changes in this stage depend on current and previous lifestyle factors.

By understanding physiological and physical changes that progress through an adult's life, nurses can tailor care to promote wellness for each patient. Nurses must be alert for lifestyle choices and heredity factors that may affect adults' physiological, psychological, and psychosocial development. Nurses can empower adults to improve their health at any stage by understanding their bodies, improving lifestyle choices, and managing and preventing chronic disease.

40.2 Theories Related to Growth and Development

Understanding developmental theories about young and middle-aged adults gives nurses guideposts for creating individualized care plans. Young and middle-aged adults develop along a continuum extensively described in developmental theories. Using Erikson's psychosocial development theory, Levinson's theory of adult development, and Vaillant's theory of adult development helps nurses understand the psychological and psychosocial struggles that adults may encounter. Nurses can identify individuals' specific needs based on their progression through these developmental stages and provide education, interventions, and collaborative care that addresses them.

Neugarten's theory can help nurses understand social pressure that may affect the health of individuals. This is crucial when creating a care plan that considers the physiological changes adults experience, as well as the interplay between psychological and psychosocial norms and pressures. Keeping the social clock theory in mind will help nurses limit age grading in their practice. Incorporating Kegan's CDT gives nurses the chance to develop wellness plans that match each individual's view of health. By creating developmentally appropriate interventions, nurses promote positive patient outcomes.

40.3 Health Risks for Young and Middle-Aged Adults

Young and middle-aged adults encompass a range of ages, and the health risks that may emerge within these stages of life are varied and many. Some adults have few health concerns or risks, while others have multiple risk factors for different diseases. Nurses can create effective care plans for health promotion and improvement if they fully understand each individual patient's risks.

Health risks fall into three categories: physiological, psychological, and psychosocial. There is significant overlap in the categories, with many physiological health risks contributing to psychological or psychosocial risks, and vice versa.

Physiological health risks typically increase as adults transition from young to middle-aged adults. Depending on an individual's overall health status, significant physiological health risks emerge in later young adulthood and include metabolic and cardiovascular diseases as well as various types of cancer. Psychological risks are prevalent across the adult stage but may have different triggers. Psychological concerns in young adulthood can also make individuals more prone to similar disorders in middle adulthood. Individuals with psychological risks such as depression or anxiety may be at higher risk for psychosocial risks such as violence, injuries, and drug and alcohol misuse.

Conversely, individuals who use drugs or alcohol are at much higher risk for mental health disorders, such as depression and anxiety. Specific tools such as the PHQ-9 are available for monitoring patients' mental health. Recognizing depression, anxiety, and addiction gives nurses the opportunity to address these concerns at an early stage and guide patients to appropriate services for treatment.

Psychosocial risk factors in this age group include unintentional injuries and injuries related to interpersonal violence. Interpersonal violence and hostility can be encountered in the workplace and within intimate relationships. Psychosocial risks such as injury, substance use, and addiction are closely tied with psychological risks such as depression and anxiety. Physiological, psychological, and psychosocial risk factors in adulthood are interrelated. By addressing all risk types, the nurse can create holistic and personalized care plans.

40.4 The Nurse's Role in Preventing Illness

Nurses are partners in health promotion and disease prevention throughout the adult years. Nurses focus on specific patient physiological, psychological, and psychosocial factors to create a working wellness path. Health screenings are crucial for preventing illness, and nurse attitudes about preventive care and screenings can influence their patient's choices in seeking and following it. Routine assessment of mental health status, physical health, and psychosocial status allows nurses to adapt care plans for the needs of each patient.

Collaboration with other medical professionals and specialists expands the nurse's reach in providing comprehensive care. Referrals to medical specialists are necessary for many advanced and complicated health disorders. In making referrals, the nurse has an important role in educating the patient and ensuring a smooth transition to specialty care. Special support services tailored for specific treatment needs include diabetes educators and specialized support services for individuals with cancer. Nurses work closely with social workers to ensure continuity of care for patients with complex health needs. One of the primary roles of the nurse is identifying a specific need and leading the appropriate interdisciplinary team in providing care for each patient.

Key Terms

achlorhydria condition in which not enough acid is produced in the stomach
acid reflux condition in which gastric acid moves up the esophagus, causing irritation
andropause reduction in testosterone production in males
burnout a state of emotional, physical, and mental exhaustion caused by prolonged stress and excessive workload, often associated with work-related responsibilities and caregiving roles
compassion fatigue the emotional toll experienced by individuals caring for others
crystallized intelligence the ability to draw and extrapolate from previously learned experiences
end-organ damage a complication associated with diabetes; caused by damage to vascular organ systems
Erickson's psychosocial development theory theory explaining social aspects of human development from infancy through adulthood, including personality development through the life span
esophageal sphincter the muscular closure between the esophagus and stomach
executive functioning the ability to develop plans, focus attention, perform from working memory, maintain self-awareness, initiate and execute complicated tasks, control impulses, and manage emotions
fluid intelligence the ability to reason, transform, or generate new information
inhibitory functioning the ability to focus on certain information while suppressing attention to less pertinent information
interpersonal violence intentional use of physical force or power against another person or group that results in, or has a high likelihood of resulting in, injury, death, psychological harm, or deprivation
intrusive thoughts disruptive thought or mental image associated with anxiety triggers that interrupt normal thought processes
Kegan's constructive developmental theory theory explaining that individuals change their thought processes over time as their cognitive development progresses
Levinson's theory of adult development theory suggesting that adults work through tasks as they progress through developmental stages
medication misuse any use of medications other than as directed by the prescribing healthcare provider
menopause for persons assigned female at birth, the cessation of the menstrual cycle for at least twelve months
multigenerational household home with three or more generations living together in one household

Neugarten's theory of adult development the "social clock" theory describes a culturally determined timeline prescribing when individuals should achieve certain milestones and life events, such as marriage, parenthood, career advancement, and retirement
neurogenesis the brain's capacity to renew itself through the generation of new connections
neuroplasticity the brain's capacity to replenish itself through the strengthening of existing connections
obesity a disorder in which an individual's weight is greater than the healthy maximum for their age and height
osteoporosis a condition characterized by loss of bone density, making bones weak and prone to fracture
osteosarcopenia muscle and bone tissue decline
panic attack a combination of physical symptoms in response to anxiety that may include chest pain, sweating, trembling, tachycardia, dizziness, throat tightening, tingling in face or extremities, chills, nausea
panic disorder anxiety associated with recurrent panic attacks
perimenopause the stage preceding menopause
physical growth changes in height and weight
physiological change a bodily function happening at a cellular level
plaques fatty deposit that develops on the inside of a blood vessel
prediabetes a chronic abnormal elevation in blood sugar levels; however, the level is not elevated enough to be considered diabetes
presbycusis age-related hearing loss
presbyopia loss of near vision
psychological change relating to the mind and emotions
psychological health risks anxiety, depression, and suicide
psychosocial factor interpersonal interaction, such as a relationship, work communication, and cooperation in living situations
sarcopenia loss of skeletal muscle mass
substance abuse excessive or improper use of drugs or alcohol, leading to physical, mental, and social harm(also referred to as substance use or misuse to avoid stigmatization)
systolic blood pressure the amount of pressure within the blood vessels when the heart contracts and pumps blood out of the heart
transformation a transition in Kegan's constructive developmental theory in which individuals change their thinking and understanding of the world around them
triglycerides the most common lipid circulating in the body; derived from food intake
type 2 diabetes mellitus a disease defined by an impairment in glucose metabolism
Vaillant's theory of adult development theory based on educational and physical health measures; proposes that higher education levels directly affect self-care and health monitoring over the adult life stage

Assessments

Review Questions

1. A 20-year-old patient is struggling with screen addiction. You understand that this challenge stems from incomplete development of what part of the brain?
   a. occipital lobe
   b. parietal lobe
   c. temporal lobe
   d. frontal lobe

2. Although many young adults are at prime physical ability, strength, and health during early adulthood, which medical disorder is present at epidemic rates in young adults?
   a. sleep deprivation
   b. obesity
   c. multigenerational living
   d. cancer

3. Excessive video gaming and screen use is correlated with a variety of health consequences, including which mental health disorder?

a. vision problems
b. tendonitis
c. depression
d. drug use disorder

4. During late young adulthood and continuing into middle adulthood, strength and metabolism are affected by which condition that is characterized by a decrease in muscle mass?
a. sarcopenia
b. osteoporosis
c. inflammation
d. neurogenesis

5. While cognitive factors such as working memory, neuroplasticity, and neurogenesis may decline in middle adulthood, this age demographic maintains which type of intelligence that results in the ability to integrate new ideas by extrapolating from prior experiences?
a. executive functioning
b. fluid intelligence
c. crystallized intelligence
d. long-term intelligence

6. In what stage of Erickson's psychosocial development are most middle-aged adults?
a. trust versus mistrust
b. identity versus confusion
c. intimacy versus isolation
d. generativity versus stagnation

7. According to Levinson's theory, what situation marks the midlife transition (ages 40 to 45 years)?
a. beginning to think about starting a family
b. reassessing career aspirations
c. questioning social norms present in their family of origin
d. identifying core personal values

8. Which tasks are included in Vaillant's theory of adult development?
a. generativity, career consolidation, autonomy, keeper of meaning
b. intimacy, trust, autonomy, identity
c. generativity, autonomy, intimacy, integrity
d. autonomy, trust, identity, initiative

9. What developmental theory suggests that social norms influence a social developmental clock, driving individual choices in clothing, marriage, and family and contributing to age grading?
a. Levinson's theory of adult development
b. Vaillant's theory of adult development
c. Erickson's psychosocial development theory
d. Neugarten's theory of adult development

10. What does Kegan's constructive developmental theory suggest?
a. Adults develop according to a social clock.
b. Adults experience thought process transformations during their development.
c. Adults experience transition times at ages 30 and 40 years.
d. Adults must complete specific social tasks to progress to a higher level of development.

11. By different mechanisms, hypertension and diabetes affect the vascular system, resulting in damage to the heart, eyes, kidneys, and nerves. What is the term for this resulting damage?

a. peripheral damage
b. organ failure
c. end-organ damage
d. pain

12. What is the most common nutritional disorder in the United States?
a. anorexia nervosa
b. bulimia
c. micronutrient deficiency
d. obesity

13. A nurse administers a PHQ-9 questionnaire for a new patient as per clinic protocol. The patient notes concern in areas such as sleep, concentration, and energy level but not in areas of self-esteem or interpersonal interactions. What is an appropriate follow-up question for the nurse to ask?
a. Have you struggled in the past with depression or anxiety?
b. Are you suicidal?
c. Have you ever used your son's ADHD medications?
d. Is your sleep related to problems at work?

14. Health disorders such as diabetes, obesity, substance misuse, cancer, and anxiety put individuals at risk for what other mental health disorder?
a. bipolar disorder
b. depression
c. dementia
d. schizophrenia

15. In what work environments are individuals most at risk for workplace violence?
a. service jobs, health care, delivery driver, law enforcement
b. legal work, food preparation, grocery store, custodial
c. law enforcement, road construction, university professor, bartending
d. food preparation, preschool teaching, legal work, health care

16. What statement most accurately identifies the effects of acute and chronic sleep deprivation?
a. poor judgment, improved coordination, injuries, enhanced work performance
b. inability to concentrate, poor work performance, diabetes, high blood pressure
c. poor work performance, anxiety, depression, hypertension, obesity
d. depression, enhanced work performance, obesity, injuries

17. What aspects of a physical movement plan are important for *all* individuals?
a. The movement plan must include weight-training exercises and high-intensity cardiovascular exercise.
b. The movement plan requires at least 150 minutes of exercise each week.
c. The movement plan should be based on individual preferences and abilities and include a variety of exercises and movements to strengthen muscles.
d. The physical movement plan is best when implemented in a gym setting.

18. Nurses collaborate with social workers to create a care plan addressing what aspects of care?
a. a balanced diet
b. a mental health treatment plan
c. financial relief resources
d. a care plan for colon cancer

19. Up to 16 percent of adults binge drink. What health effects may they experience with continued binge drinking?

a. hypertension, heart disease, cancer, injuries
b. cancer, diabetes, kidney disease, injuries
c. heart disease, vision changes, hearing loss, liver disease
d. obesity, heart disease, kidney disease, violence

20. What medical specialty focuses on caring for individuals with treatment-resistant diabetes?
a. rheumatology
b. gastroenterology
c. cardiology
d. endocrinology

Check Your Understanding Questions

1. List three physiological processes that are at their peak in early adulthood.

2. List three symptoms associated with menopause.

3. Nurse Anne is taking care of Karen, who was recently diagnosed with type 2 diabetes. Based on her knowledge of metabolic syndrome, nurse Anne knows that Karen is also at risk for which other disease processes?

4. Explain the effect of heart contraction on systolic and diastolic blood pressure.

5. Describe ways in which nurses can watch for signs of depression and anxiety during interactions with patients.

Reflection Questions

1. How do lifestyle choices, such as diet, exercise, and sleep patterns, contribute to physical well-being during early and middle adulthood?

2. A nurse is caring for a 29-year-old patient who is struggling with depression. During their visit, the patient expressed concern about not yet being married and feeling she is running out of time to have children. The patient states that her family is putting her under a lot of pressure to "start a family." The patient is also struggling to decide if moving to a new city is the right choice. Explain the developmental stage this patient is experiencing based on Neugarten's and Levinson's theories.

3. Reflect on ways in which drug and alcohol use contributes to adults' risk for unintentional injuries and interpersonal violence. Create a diagram showing the relationship between these psychosocial risk factors in adults.

4. Reflect on societal expectations and pressures related to body image and physical health during young and middle adulthood. How might the nurse influence and support positive self-care choices within this age group?

What Should the Nurse Do?

1. Summer is a 48-year-old female who presents to a primary care clinic with concerns about her weight. She is noticing some weight gain, irritability, and changes in her menstrual cycle. She states, "I thought I still had a few more years before menopause." How should the nurse respond?

2. A 25-year-old male presents to a visit to "get a medicine for ADHD." As the nurse takes the health history, the patient reports up to seven hours per day using a computer or phone, primarily for gaming. He reports trouble concentrating and feels like he is just not motivated to do anything else. He is also having trouble falling asleep. How should the nurse respond?

3. Dacia is a 34-year-old single mom working full time as a restaurant server. Lately, she has been struggling with finances, interpersonal conflict with the father of her children, and mechanical car problems. She exercises daily and eats healthily but indulges in ice cream at night. She presents to a primary care clinic where Jessa works as a nurse. Dacia is worried about her heart and has wondered if she had a heart attack.

She tells Jessa that she almost went to the emergency room the other night because her heart was racing, but she felt better after talking with her mom. What additional questions should the nurse elicit from Dacia?

4. Dacia explains that she had similar symptoms during her divorce five years ago. She states that she usually feels better after talking with her family. Her main symptoms are a racing heart, the sensation of fear, throat tightening, chest tightness, tingling in the cheeks, and dizziness. Jessa knows that Dacia's symptoms are consistent with what mental health disorder?

5. During a routine wellness checkup for a 48-year-old female, the nurse noticed she had never had a mammogram. What is the best course of action for the nurse?

Competency-Based Assessments

1. Jeff is a 57-year-old school principal. He is visiting his primary care provider's office for a wellness exam. He reports that he is feeling well overall. He is satisfied with his life, and he shows no clinical signs of depression. He has friends who like to ice-fish together, and he spends a lot of time volunteering with his church. Jeff is exhibiting successful progression through which of Erickson's social tasks?

2. Reflect on how Vaillant and Erickson's theories intersect. Draw or re-create a diagram showing how Vaillant added to Erickson's theory. Which addition applies to young and middle-aged adults?

3. Research the rise in opioid use in the United States over the past ten years. Create an infographic displaying the trends in opioid use disorder, specifically the rise in misuse of synthetic opioids in the last ten years. Demonstrate the factors that are contributing to this rise. Show how this relates to the relative stability of other opioid use during the same period.

4. Cara is discussing nutrition with Mr. Callaway. His recent lipid panel showed elevated total cholesterol and triglycerides. Cara is explaining how limiting saturated fats and highly refined sugars can reduce these risks and his risk for heart disease. Mr. Callaway asks what his sweet tooth has to do with his cholesterol. How should Cara respond?

5. Using the internet, explore various fad diets and compare these to the Mediterranean diet. What are the main differences, and how do these affect health positively or negatively?

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CHAPTER 41
Older Adults

FIGURE 41.1 Nurses play a crucial role in supporting the well-being and longevity of older adults by promoting an active and vibrant lifestyle. The significance of preventive health measures is clear, ensuring the overall well-being of aging adults and allowing them to actively engage in enjoyable activities for as long as possible. (credit: "couple senior" by pasja100/Pixabay, Public Domain)

CHAPTER OUTLINE

41.1 Growth and Development Stages
41.2 Theories Related to the Older Adult
41.3 Health Risks for Older Adults
41.4 The Nurse's Role in Preventing Illness

INTRODUCTION Adults pass through several stages of development, including early adulthood, middle adulthood, and older adulthood. The American Psychological Association (2023) explains that older adulthood begins when an individual is approximately 65 years old. The number of older adults in the United States is steadily increasing. According to the United States Census Bureau (2023), the number of older adults in the United States increased by more than 38 percent between 2010 and 2020. As of the 2020 census, 55.8 million older adults comprise more than 16 percent of the U.S. population. Similar to other age groups, older adults experience predictable changes. Many common changes are associated with aging; however, the physical, psychological, and psychosocial transitions are not universal. Although individuals pass through these stages at their own pace, nurses can identify patterns in aging to guide the nursing care process. How older adults experience developmental changes depends on lifestyle choices, disease states, health conditions, social circumstances, and social determinants of health (SDOHs).

Nurses working across various specialties encounter older adults in their practice. Providing exceptional care depends on how well nurses understand the general changes associated with each life stage and how to apply nursing care during those stages. A range of developmental theories associated with aging inform day-to-day

practice for nurses, such as the psychosocial development theory, disengagement theory, activity theory, and the human needs theory. Theories related to the progression of psychological changes in adulthood help nurses prepare individuals for expected and unexpected health events and transitions.

Health risks in older adults are not universal and depend on lifestyle factors, age, and heredity. However, since some health risks are more common as individuals age, nurses can be attentive to opportunities for delivering care and education aimed at mitigating these risks through health promotion and disease prevention. A nurse's role in preventing illness is varied. Nurses are poised on the frontlines to promote wellness for all individuals regardless of their risk for chronic disease. Nurses can empower individuals to improve their health, even as they age.

41.1 Growth and Development Stages

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify growth and development patterns for the older adult
- Explain how individuals adjust to the changes of older adulthood

During older adulthood, individuals experience physiological, psychological, and psychosocial changes. Physiological changes often result in physical changes that **older adult** (adults 65 years of age or older) can feel and see. When physiological and physical changes manifest in declining health status or progression of chronic diseases, these changes also affect psychological well-being and social interactions. These individual changes may alter how older adults interact with others, function in the community, and maintain a sense of belonging. Older adults may struggle with discrimination based on one's age, new or progressive diseases, and cognitive changes. Adjusting to these many changes requires resiliency to maintain a sense of individual health.

Older Adult Stage

Older individuals undergo a range of physiological, physical, and psychological transformations. These may have little effect on older adults' day-to-day life or on how they function. For older adults, these developmental changes are often accentuated by underlying health problems and may contribute to worsening overall health. Changes that are physiological are those bodily functions happening at a cellular level, and the presence of chronic disease also plays a role in the psychological changes that older adults experience. Changes that are psychological are those relating to the mind and emotions. The psychosocial factors relate to interactions between individuals, such as relationship changes, financial issues, living situations, and SDOHs. These factors interplay with physical and psychological changes to create challenges and rewards for older adults.

Physiological Development

Older adults experience a wide range of **physical changes** that are outward expressions of change in the body during this developmental period. In addition to visible physical changes, older adults experience internal physiological changes that affect metabolism, energy level, hormone balance, and disease progression (Table 41.1). Physical developmental changes in older adults affect every organ system in the body. Nurses can anticipate many typical and expected physical changes in older adults; though, each individual progresses through physiological and physical changes at a different rate.

Organ System	Expected Physiological Changes	Possible Physical Changes
Cardiovascular	• Possible blood vessel thickening, narrowing, and loss of elasticity • Possible calcification of valves • Decreased peripheral circulation • Decreased cardiac output	• Elevated baseline blood pressure • Varicose veins • Heart murmur
Respiratory	• Decreased cough reflex • Increased chest wall rigidity • Decreased lung compliance • Fewer alveoli	• Reduced stamina (tolerance to physical exertion)
Musculoskeletal	• Loss of muscle mass • Reduced joint mobility • Loss of bone density • Decreased proprioception	• Reduced muscle strength • Joint pains • Changes in balance
Genitourinary	• Decreased renal perfusion • Decreased bladder capacity • Female: reduction in sphincter tone • Male: prostate enlargement	• Overactive bladder • Incontinence • Urinary frequency
Gastrointestinal	• Decreased salivary and gastric secretions • Decreased gut motility • Impaired rectal sensation	• Dry mouth • Changes in bowel patterns • Hemorrhoids • Constipation
Integumentary	• Decreased elasticity of skin • Slower nail growth • Sweat and oil gland atrophy	• Skin pigment changes • Graying hair • Dry skin • Lesions such as seborrheic keratosis and skin tags
Endocrine	• Altered hormone production • Reduced ability to adapt to stress • Decreased thyroid function • Insulin resistance • Decreased core temperature	• Weight changes • Glucose intolerance • Increased stress levels
Immune	• Decreased thymus size • Decreased T-cell function	• Increased susceptibility to infections

TABLE 41.1 Expected Physiological and Physical Changes in Older Adulthood

Organ System	Expected Physiological Changes	Possible Physical Changes
Sensory	• Thickening of eardrum • Deterioration of inner ear bones • Less sensitive cornea • Decreased pupil size • Decreased lens flexibility • Reduced eye muscle motion • Fewer taste buds • Smaller taste buds • Decreased saliva • Decreased smell receptors in the nose • Decreased blood flow to nerve endings • Thinning skin	• Reduced hearing • Alterations in balance • Tinnitus • Earwax buildup • Slow reaction to changing light • Clouding of the lens • Presbyopia • Trouble with night driving • Alteration in visualizing colors • Eye floaters • Dry eyes • Decreased taste sensation • Decreased sense of smell • Reduced appetite • Decreased temperature sensitivity • Trouble sensing skin injuries
Reproductive	• Female: decreased estrogen level; atrophy of uterus • Male: erectile dysfunction	• Vaginal and breast atrophy • Vaginal dryness and irritation • Erectile dysfunction

TABLE 41.1 Expected Physiological and Physical Changes in Older Adulthood

Psychological Development

Psychological changes vary widely in older adults. Psychological transitions relate to accepting the aging process, the development of acute or progressive cognitive impairments, and the occurrence of mental health disorders. According to the National Institute on Aging (2021), some cognitive impairments are related to acute medical issues, while others develop into progressive loss of brain function resulting in cognitive decline, known as **dementia**. Psychological problems may also develop in response to grief and loss. These include loneliness, anxiety, and depression. Other triggers for depression include changing body image, decreased social interaction, decreased physical activity level, loss of driving ability, chronic health conditions, and medications.

REAL RN STORIES

Dementia Versus Delirium

Nurse: Cara, RN, BSN
Clinical setting: Surgical department
Years in practice: 13
Facility location: Central Iowa

I've worked with postsurgical patients for six years, but I previously worked for five years in an assisted living facility with two additional years in a memory care unit. I'll never forget the time I witnessed a patient experiencing true delirium. During a three-day work week, I cared for Edith, a 77-year-old patient who had undergone a right hip replacement. Edith progressed as expected during the first day. Her pain was well controlled, she began ambulating as expected, and she tolerated the urinary catheter without problems. She had several visitors, including her grandchildren, and enjoyed talking with the nurses about her family.

Edith attempted to get out of bed without assistance on the second evening of her stay. She stated she was feeling strong enough to go home. I explained that she needed to call for help and that the surgeon would need to clear her

before she was released. The previous day-shift notes indicated that Edith had been slightly confused about the time of day; however, her family explained that she occasionally mixed up dates and times. Edith repeatedly called out as the night shift progressed, asking to go home, and seemed unaware of her recent surgical procedure. I felt Edith was becoming more disoriented. I remembered Edith did not exhibit any signs of severe confusion the day before. While Edith had a history of mild cognitive decline and forgetfulness, she did not have a history of dementia.

I brought up my concerns with the charge nurse, who encouraged me to discuss my concerns with the surgeon. The surgical wound was clean and without signs of infection. Edith had no fever, and her other vital signs were normal. I knew the new onset of confusion might be delirium, a sudden-onset confusion related to a physical illness or infection, rather than her mild cognitive decline. After hearing my concerns, the surgeon ordered blood work and urinalysis from the urinary catheter. Edith's test results showed an elevated white blood cell count, and her urinalysis was positive for infection. She was treated appropriately with antibiotics. Although Edith spent two extra days in the hospital for a urinary tract infection, her mental status cleared, and she resumed her baseline cognitive functioning.

Psychosocial Development

Psychosocial changes in older adults vary depending on health and social circumstances and relate to adjustments in changing family and community dynamics. Social factors that may affect psychosocial interactions include changes in living situations, death of family or friends, and the effects of **ageism** (a form of prejudice and stereotyping related to a person's chronological age) in the community. Health factors such as decreased mobility, chronic disease, and cognitive decline can negatively impact social interactions with others. Psychosocial changes can also be triggered by retirement. Worrying regarding retirement timing and long-term financial security is common in older adults. Retirement and changes in work abilities also correlate with ageism and societal retirement pressures.

As an individual progresses through adulthood, psychosocial factors also relate to relationships with children and significant others and may involve **role reversal**, a circumstance where children take on the role of caregiver, and older adults take on a more dependent role. Individuals with many health issues require frequent assistance from family and other caregivers for many years, while others live independently and without assistance until very old age. Role reversal can be challenging for the older adult and for the children who provide care. Role reversal is not a universal transition in older adulthood. Older adults without children or those with strained parent-child relationships may not have the option for direct family care. In many families, children may not have the time, resources, or proximity to provide individual care to their aging parent. In these cases, older adults do not experience role reversal but may experience strain regarding securing the necessary resources and care.

LIFE-STAGE CONTEXT

Role Reversal and the Aging Adult

The concept of role reversal between older adults and their adult children is complex and challenging. Role reversal is the idea that a child takes on a parenting role while a parent takes on a child's role. Caring for an aging parent, particularly one with dementia or other chronic illnesses requiring intense physical or emotional caregiving, may seem like a role reversal. While it might appear as a role reversal, with the child now taking on a caregiving role for their parent, some experts argue that this is not a role reversal. Instead, they propose the concept of a role shift, emphasizing the older adult's identity as a parent and the caregiver's identity as a child are maintained. In this way, it acknowledges a change in responsibilities without completely altering the fundamental identities within the parent-child relationship. Nurses must maintain caution when thinking of care in a role-reversal pattern, as it can inadvertently remove dignity and respect from the older adult who has lived a full and complex life. Think of this as providing respectful care rather than "parenting" the older adult.

Adjusting to Changes in Older Adulthood

Older adults make conscious and unconscious changes in their daily lives to cope with the physical, psychological, and psychosocial changes that face them. Some changes are progressive, requiring permanent alterations in lifestyle, while others are temporary, requiring in-the-moment coping mechanisms. Progressive changes, such as

muscle loss, pain, and cognitive decline, require individuals to make adaptations including using assistive devices in their home, relying on others for transportation, and using outside caregiver services. More temporary changes, such as an illness, injury, or death of a family member, may require short-term coping mechanisms, such as attending physical therapy, adjusting to facilitate the healing process, and coping with acute grief.

Strength and Mobility

Older adults can maintain strength and mobility through intentional, continued physical activity and strength training. However, many older adults experience a progressive decline in mobility related to joint pain related to arthritis, reduced flexibility, and changes in bone structure, which can increase their risk of falls. Older adults can adapt to these changes by recognizing early signs of mobility decline and maintaining daily physical movement, adapting physical exercise to fit their abilities. Maintaining bone health is also crucial and can be achieved through exercise and good nutrition. Weight-bearing activities such as walking, jogging, dancing, and resistance training stimulate bone remodeling and help prevent bone loss. Adequate intake of calcium and vitamin D is essential for maintaining strong and healthy bones. Dairy products, leafy green vegetables, fortified foods, and supplements can be valuable sources of these nutrients.

Older adults may experience varying levels of pain and fatigue. While pain may relate to prior injuries, joint deterioration, or chronic diseases, maintaining strength and mobility can limit the effect of pain in day-to-day life. A sedentary lifestyle either beginning in older adulthood or continuing through life leads to an overall loss of muscle strength and muscle mass that can in turn lead to generalized fatigue. Efforts to maximize mobility within their individual ability can help reduce pain and fatigue.

Nutrition

Many changes develop for older adults surrounding nutrition. Changes associated with older adulthood that affect nutrition include the following:

- decreased hunger sensation
- decreased appetite
- decreased taste sensation
- decreased thirst response
- change in nutrient absorption
- decline in oral health

Changes in dietary habits can have cascading effects on the functioning and health of multiple organ systems, such as the heart, kidneys, and liver. Older adults can focus on incorporating functional foods to boost nutrition, maintain vitamin and mineral intake, regulate elimination, improve skin integrity, and increase energy levels (Jones, 2002). These **functional foods** are nutrient-dense foods that benefit health and functioning in ways other than maintaining calorie and energy intake and include such foods as fruits, vegetables, yogurt, and nuts (Jones, 2002; Temple, 2022). For example, fruits not only provide simple sugars, fluid, and calories for nutrition, but they also provide additional benefits in the form of soluble fiber that promotes healthy digestion and elimination. Yogurt and other fermented foods provide healthy caloric intake but also provide probiotic cultures to help maintain healthy intestinal microbial balance (Leeuwendaal et al., 2022).

Cognition

Older adults must adapt to psychological and cognitive changes. Individuals experiencing **mild cognitive impairment (MCI)**, which is prevalent in older adults, present with forgetfulness, short-term memory loss, and thinking impairment, such as difficulty recalling names or words. Mild cognitive impairment affects self-esteem, independence, social interactions, and an individual's ability to perform self-care. It is often distressing to older adults. The National Institute on Aging (2021) explains that in some individuals, MCI may progress to worsening or progressive dementia, particularly in those with multiple chronic health conditions. However, not all MCI is progressive, and older adults in good health can minimize the effects of MCI by maintaining an active lifestyle, interacting in social situations, reading, and learning skills.

Retirement and Finances

As adults move through the aging process, they notice both social and financial changes that affect their daily lives. Retirement is a turning point for many adults that can significantly change how they see themselves and their

societal value. For some, retirement signifies the end of a career and a time to enjoy more time with family and hobbies. Others may find retirement lonely or need more direction and focus. This can lead to depression if older adults do not have a support system. Financial changes include modifying spending patterns, revising budgets to align with savings goals, and making adjustments to accommodate changes in tax situations. Many older adults struggle financially and depend on government aid to maintain their expected lifestyle. The cost of prescriptions may increase if chronic diseases progress, leading to the need for additional medications, or if newer, more expensive medications become necessary for the treatment of the disease. Some seniors may need to decide between food and medication purchases. As a result, they may cut pills in half to save money, only to worsen their disease/illness.

Relationships and Grief

Relationships change drastically during the later adult stage of life. Some older adults may find that they rely on their children for assistance. Others may find great joy in providing care for young grandchildren. In addition, as generations age, older adults experience more loss of same-age counterparts in their friend groups and extended family. The death of a spouse, friends, and family are often significant turning points for many older adults. Older adults must learn to cope with grief and learn the signs of depression to get help when needed.

Ageism and Stereotypes

Ageism is a form of prejudice and stereotyping related to a person's chronological age. Ageism can apply at any age but is most common in older and younger adults. Ageism has negative effects on the developmental changes of older adults and can lead to the following:

- anxiety
- increased mortality risk
- slower recovery time
- poor mental health
- depression

By respecting older adults and monitoring their behavior during interactions to avoid talking down to them or using oversimplified speech not required for them to understand, nurses create an environment of mutual respect between older adults and nurses. Experiencing a sense of respect within the community helps older adults maintain autonomy, independence, and a sense of belonging and purpose. Ageism can also be a self-directed sense of diminished self-worth due to aging. In this context, ageism is not just imposed by others; it can also manifest as an individual's own sense of reduced self-worth or value attributed to the aging process. It highlights the impact of societal attitudes and stereotypes about aging on an individual's self-perception and self-esteem, contributing to a negative view of one's worth as they grow older. Nurses can help individuals recognize their value, encouraging others to see them as functioning members of society.

PATIENT CONVERSATIONS

Addressing Ageism

Scenario: Jane is an active 73-year-old who enjoys swimming, hiking, walking her dog, and volunteering at the animal shelter. She follows up for her annual wellness exams and screening tests but takes no prescription medications. Darien works as a nurse in the primary care medical office, where Jane is a patient. While Darien measures her vital signs, Jane brings up a struggle she is experiencing.

Nurse: Do you have any specific questions for the healthcare provider today?

Patient: I have been struggling with some poor attitudes at my volunteer job lately. Some of the younger employees seem to think I can't properly care for the animals. They say I should not be outside on the walking trails with the dogs for fear of falling.

Nurse: I can understand why this is distressing for you, considering how active and strong you are. You are likely experiencing ageism, which is when someone is stereotyped based on their age. This is unfortunate, but there are a few things that you can do to help others understand that all people age differently, and older age does not mean

frailty.

Patient: Great, I'd love to hear your tips.

Nurse: First, by understanding your coworkers and their values, you can create a stronger bond, especially since you have a common bond of affection for animals. Second, putting yourself in the position of a mentor will significantly improve their respect for you. Give them great tips to help them interact with a difficult animal or the trick to get the shy cat to curl up in their lap. Another idea is to be very vocal about your active lifestyle and how walking the animals helps keep you strong and fit. By remaining positive and curious, you'll show by example that older adults are happy, open, and able to learn. You may also be able to connect with some of your youngest coworkers by being conscious of ageism toward younger adults and always showing respect for these younger individuals.

41.2 Theories Related to the Older Adult

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Explain the psychosocial developmental theory in relation to older adults
- Recognize the disengagement theory in relation to older adults
- Summarize the activity theory in relation to older adults
- Describe the human needs theory in relation to older adults
- Discuss the age stratification theory in relation to older adults

A variety of theories seek to explain the process adults experience during aging. These theories relate to basic human needs, activity levels, disengagement, and psychosocial development. Since the mid-1900s, theorists have developed and adapted theories about human development throughout the life span. Some theories remain relevant today with concepts that endure despite changing cultural and social norms, while others have been subsequently disregarded. Most theories attempt to make sense of how the aging process occurs. The most important aspect of the currently accepted theories is that while aging is universal, how individuals experience aging is individual and unique.

Nurses with a strong understanding of the psychosocial theories of aging have a unique ability to individualize care for patients in various clinical settings. They can see commonalities and differences stemming from their patients' diverse geographic and cultural backgrounds and incorporate these to enhance care.

Psychosocial Development Theory

Erik Erikson, a life-stage theorist, explained the **psychosocial development theory**, which emphasizes the social nature of human development from infancy through older adulthood. Erikson proposed that personality development takes place throughout the life span. Erikson suggested that how people interact with others affects their sense of self.

Erikson proposed that we are motivated by a need to achieve competence in certain areas of our lives. According to his theory, individuals experience eight stages of development over their life span, during which a conflict or task needs to be resolved. Completing each developmental task results in a sense of competence and a healthy personality, whereas failure to master these tasks leads to feelings of inadequacy. According to Erikson (1963), individuals progress through a predictable series of developmental stages (Table 41.2).

Stage	Erikson's Developmental Stage	Age Range per Developmental Stage	Description
1	Trust versus mistrust	0 to 1.5 years	Trust (or mistrust) that basic needs, such as nourishment and affection, will be met
2	Autonomy versus shame and doubt	1.5 to 3 years	Develop a sense of independence in many tasks
3	Initiative versus guilt	3 to 5 years	Take initiative on some activities—may develop guilt when unsuccessful or boundaries overstepped
4	Industry versus inferiority	5 to 12 years	Develop self-confidence in abilities when competent or sense of inferiority when not
5	Identity versus role confusion	12 to 18 years	Experiment with and develop identity and roles
6	Intimacy versus isolation	18 to 40 years	Establish intimacy and relationships with others
7	Generativity versus stagnation	40 to 65 years	Contribute to society and be part of a family
8	Ego integrity versus despair	65 years and older	Assess and make sense of life and meaning of contributions

TABLE 41.2 Erikson's Psychosocial Stages of Development

According to Erikson, the late adulthood task relates to ego integrity versus despair. He stated that during older adulthood, individuals reflect on their lives and experience a sense of either satisfaction or failure. People with few regrets and a sense of integrity often feel pride in their accomplishments. People who struggle with this stage may feel as if their life has been wasted. Focusing on how life experiences "would have," "should have," and "could have been" can lead to bitterness, depression, and despair.

In nursing practice, Erikson's theory allows nurses to understand the complex dynamics that shape an individual's health and wellness path throughout life. Nurses can provide highly individualized care by understanding that personality development continues to evolve and change even in older adulthood. Applying Erikson's theory in real-life nursing situations may look like this:

- encouraging physical activity based on ability
- connecting individuals with grief support networks
- recommending community groups based on interest
- referring to nutrition services to support healthy eating
- providing continuity of care between medical specialists and support services
- showing respect for clients in older adulthood

Disengagement Theory

The disengagement theory is one of the earliest theories on aging. It was proposed by Elaine Cumming and William Earl Henry in 1961. The disengagement theory suggests that withdrawing from society and social relationships is a natural part of growing old. There are several main points to the theory. First, because everyone expects to die one day, and individuals experience physical and mental decline as they approach death, it is natural to withdraw from individuals and society. Second, as older adults begin to withdraw, they receive less reinforcement to conform to social norms. Therefore, this withdrawal allows greater freedom from the pressure to conform. The theorists

described the experience of social withdrawal differently for men and women because traditionally, men focused on work and women focused on marriage and family. The disengagement theory states that when individuals withdraw, they will be unhappy and directionless until they adopt a role to replace their accustomed role compatible with the disengaged state (Cumming & Henry, 1961).

While the disengagement theory served as a springboard for ongoing research into aging, the foundations of the theory imply a negative connotation with aging. Historically, the theory was not well received due to this negative portrayal of older adults within society. Subsequent studies suggested that engagement and activity, rather than disengagement, is the basis by which older adults progress through the aging process. Additionally, some critics of the disengagement theory cite several concepts within the theory that tend to discredit it, including the following ideas:

- Disengagement in older adulthood is universal.
- Disengagement is involuntary.
- Disengagement is inevitable.

These ideas do not fit with the currently accepted cultural beliefs about aging. Adults have vastly different experiences with the aging process depending on social, physical, and emotional factors. Even as Cumming and Henry proposed the disengagement theory, other researchers worked to define aging in a more positive and individualized way. The focus shifted from disengagement to personal and community engagement.

Activity Theory

The social withdrawal that Cumming and Henry recognized (1961), and its notion that older adults need to find replacement roles for those they have lost, is addressed anew in the activity theory. According to the **activity theory**, activity levels and social involvement are critical to the process of finding replacement roles and keys to happiness (Havighurst, 1961; Havighurst et al., 1968; Neugarten, 1964). According to this theory, the more active and involved an older person is, the happier they will be. Critics of this theory point out that access to social opportunities for activity are not equally available to all. Moreover, not everyone finds fulfillment in the presence of others or participation in community activities. Reformulations of this theory suggest that participation in informal activities, such as hobbies, most affects later life satisfaction (Lemon et al., 1972).

The activity theory is highly adaptable to nursing practice because it considers the whole individual and assumes that engagement and activity improve quality of life. As nurses work to create care plans for older adults in a variety of settings, the activity theory informs specific actions. For example, maintaining physical movement through independent activity of daily living (ADL) or group activities is crucial for patients living in long-term care facilities. For older adults living in the community, nurses can tailor care to include community gatherings, social groups, and fitness activities depending on the individual's health status. The activity theory inherently focuses on wellness and how individuals can adapt to older age in healthy ways.

Hierarchy of Needs

Abraham Maslow (1943) proposed the hierarchy of needs, a commonly known concept that explains individuals' wide-ranging physiological and psychological needs throughout their life span. Physiological needs create the foundation for this theory, with other needs developing if physiological needs are met. These needs are often depicted as a pyramid (Figure 41.2).

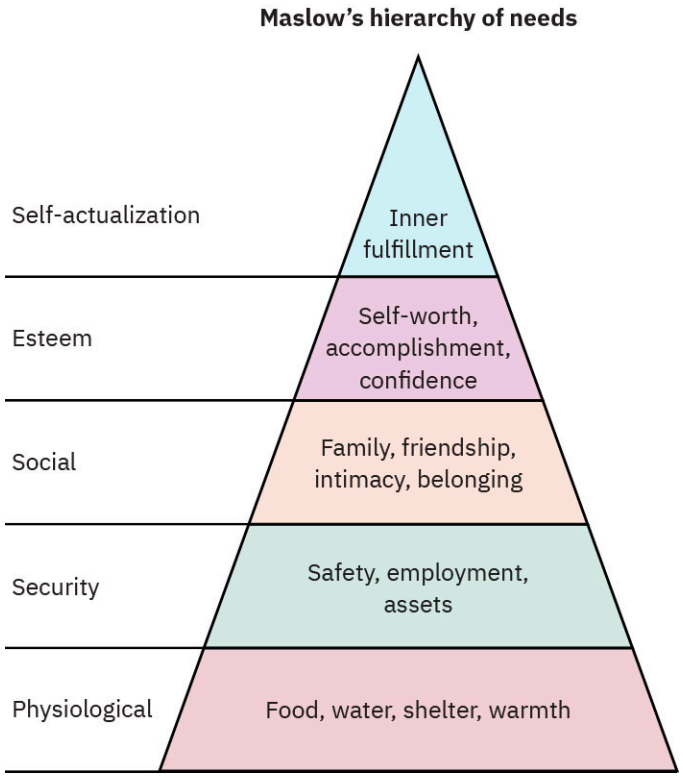

FIGURE 41.2 Maslow's hierarchy of needs remains relevant for older adults as they continue to require basic physiological necessities, seek safety and security, value social connections and belonging, strive for recognition and self-esteem, and pursue personal growth and meaning in their lives, highlighting the enduring importance of these fundamental human needs throughout the aging process. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

At the pyramid's base are all the physiological needs necessary for survival. Basic requirements for security and safety follow physiological needs. Next, the hierarchy focuses on the need to be loved and have a sense of belonging, and finally, the need to have self-worth and confidence. The top tier of the pyramid is self-actualization, which is a need that essentially equates to achieving one's full potential, which can only be realized when needs lower on the pyramid have been met. Maslow suggested that self-actualization is an ongoing, lifelong process and that only a small percentage of people achieve self-actualization (Francis & Kritsonis, 2006; Maslow, 1943).

According to Maslow (1943), one must satisfy lower-level needs before addressing those higher in the pyramid. So, for example, if someone is struggling to find enough food to meet their nutritional requirements, it is quite unlikely that they would spend an inordinate amount of time thinking about whether others viewed them as a good person. Instead, their energies would be geared toward finding something to eat. However, it should be pointed out that Maslow's theory has been criticized for its subjective nature and inability to account for phenomena that occur in the real world (Geller, 1982). Late in life, Maslow proposed a self-transcendence level above self-actualization to represent striving for meaning and purpose beyond the concerns of oneself (Koltko-Rivera, 2006). For example, people sometimes make self-sacrifices to make a political statement or in an attempt to improve the conditions of others. Mohandas K. Gandhi, a world-renowned advocate for independence through nonviolent protest, went on hunger strikes several times to protest a particular situation. People may starve themselves or otherwise put themselves in danger, displaying higher-level motives beyond their own needs.

The vital aspect of Maslow's hierarchy of needs for nurses is the understanding that older adults may need support in each area of the pyramid throughout the aging process. Table 41.3 lists nursing actions that support the most essential levels of need. Maslow's hierarchy is not a progressive process but a fluid motion of changing needs. Physiological needs, safety and security, and love and belonging are the most critical and action-based levels where nursing care is administered. However, nurses can also work to maintain self-esteem and the process of self-actualization for each patient. The needs portrayed in the pyramid can develop concurrently. For example, an individual may have a short-term increased physiological need related to an acute illness but still require love, belonging, and safety. Individuals receiving hospice care may require significant nursing care related to physiological needs. However, they may also require from nurses and spiritual leaders significant care focused on

self-esteem, security, and belonging at the end of life.

Maslow's Needs	Nursing Actions
Physiological needs	• Dressing • Bathing • Maintaining oral hygiene • Maintaining hydration • Managing chronic disease states • Administering medications • Managing acute illnesses • Promoting physical activity
Safety and security	• Implementing fall prevention protocols • Assisting with mobility • Monitoring for acute symptom changes • Maintaining adequate nutrition status • Assisting with hygiene to prevent illness • Managing medications • Screening for depression
Love and belonging	• Encouraging social interaction • Supporting family needs • Coordinating cross-specialty care • Encouraging connection with spiritual leaders
Self-esteem	• Avoiding ageism • Maintaining respect • Individualizing care • Encouraging independence
Self-actualization	• Focusing on patient dignity • Encouraging safe tasks that they "always wanted to try"

TABLE 41.3 Nursing Tasks that Fulfill Maslow's Hierarchy of Needs in Older Adults

LINK TO LEARNING

This interactive exercise (https://openstax.org/r/77mashier) will help you better understand Maslow's hierarchy of needs.

Age Stratification Theory

While we now have an increased awareness of the concept of ageism, the **age stratification theory** was the first to suggest that members of society might be stratified by age, just as they are stratified by race, class, and gender. Since age serves as a basis of social control, different age groups will have varying access to social resources such as political and economic power. Within societies, behavioral age norms, including norms about roles and appropriate behavior, dictate what members of age cohorts may reasonably do. These norms are specific to each age group, developing from culturally based ideas about how people should "act their age."

Thanks to amendments to the Age Discrimination in Employment Act (ADEA), which drew attention to how our

society is stratified based on age, U.S. workers no longer must retire upon reaching a specified age. As first passed in 1967, the ADEA protected against a broad range of age discrimination and specifically addressed termination of employment due to age, specification of age limits or preferences in advertised positions, and denial of healthcare benefits to those over 65 years old (U.S. Equal Employment Opportunity Commission, n.d.).

LINK TO LEARNING

More than 2.7 million children in the United States are being raised by grandparents and other relatives (Casey et al., n.d.). Learn more about the Grandfamily Housing Act (https://openstax.org/r/77granfamact) proposed by U.S. Senators Bob Casey (D-PA), Susan Collins (R-ME), and Sherrod Brown (D-OH) to support grandparents taking care of their grandchildren.

Nurses must also know that age stratification rarely explains behaviors and social norms. Factors such as gender, socioeconomic status, geographic location, and other cultural factors may play a role in the stratification of older adults.

LIFE-STAGE CONTEXT

The Evolving Role of Grandparenting

According to the American Association of Retired Persons (AARP) (2019), in the last twenty years, the number of adults in the United States who are grandparents has increased from 56 million to over 70 million. The AARP (2019) also suggests that up to 96 percent of adults over age 65 years are grandparents. The grandparenting role varies widely depending on age, culture, proximity to family, and values. Some individuals experience grandparenting in a traditional role of general family support and older adult status. Others have a much more complex grandparent-grandchild relationship. While this is a reciprocal relationship, it is often the choice of the grandparent to determine the extent of interaction and connection they have with their grandchildren. This intergenerational support promotes healthy growth and development for the next generation. AARP (2019) states that up to 10 percent of grandparents live in the same home with their grandchildren.

Due to the broad age range of grandparents, the United States Census Bureau reports that over 3 million grandparents remain in the workforce (Figure 41.3). More than 400,000 of these individuals over 60 years of age are responsible for the care of grandchildren they live with (United States Census Bureau, 2019). In addition, grandparents are core caregivers for many grandchildren while their parents work. Grandparent caregiving may be full time or part time, depending on the family's needs. Grandparents may step into a caregiving role at different times due to the shortage of caregiver opportunities for young children. In the changing economy, grandparents hold a significant role in early childcare and child-rearing. Regardless of the number of parents in the household, parents now work more hours than throughout history. This requires childcare, and the cost of childcare is steadily increasing. Since early childcare is not a federally required benefit for working families, families are turning to grandparents as a childcare option, particularly those parents with irregular work hours. Because up to 2.7 million children live in a household with grandparents, some of whom work to help raise the children, legislation has been proposed to provide financial and housing assistance (Casey et al., n.d.). One such bill, the Grandfamily Housing Bill, seeks to provide government funds to create stable and affordable housing for families headed by grandparents (Casey et al., n.d.).

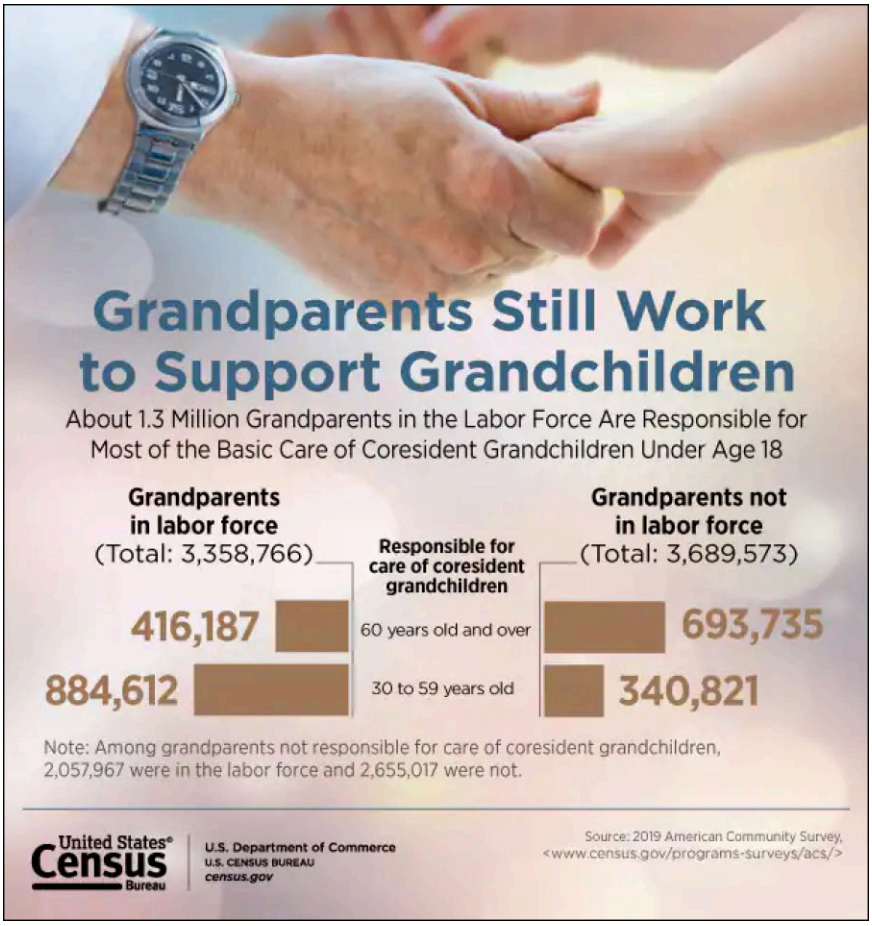

FIGURE 41.3 Over 3 million grandparents are in the labor force. Of those, over 1 million are responsible for most of the basic care of their coresident grandchildren. (credit: "American Community Survey" by United States Census Bureau, Public Domain)

Grandparents as caregivers can be a desirable circumstance for families. A robust intergenerational bond between grandparent and grandchild in healthy family relationships promotes health across these age groups. Strong relationships with grandchildren are also a significant benefit for older adults. This relationship can create rich multigenerational support for older adults. Healthy grandparent-grandchild relationships offer considerable benefits to grandchildren and grandparents, including the following:

- encouraging family values
- providing mentorship
- building self-esteem
- fostering respect
- dispelling fear of aging
- dispelling ideas related to ageism

41.3 Health Risks for Older Adults

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify physiological health risks for the older adult stage
- Discover psychological health risks for the older adult stage
- Recognize psychosocial health risks for the older adult stage

Health risks for older adults correlate with long-term lifestyle choices, heredity, social circumstances, and SDOHs. While health risks depend on individual circumstances, nurses must be aware of the range of health risks for older adults. By understanding health risks in older adults, nurses can manage and promote disease prevention and appropriate management of existing health conditions. Nurses can focus on high-risk areas, including cognition,

nutrition, mobility, and safety. In preventing illness in older adults, nurses across specialties can focus on physiological, psychological, and psychosocial health risks in caring for older adult clients. Because health status depends on age and coexisting illnesses, nurses must diligently provide individualized care, rather than generalized care, in this age group.

Physiological Health Risks

The physiological health risks are those factors affecting the normal biological function of the individual. These risks can range from acute to chronic illness, injuries, nutrition, and mobility issues. Many of these risks are interconnected. As individuals age, they face various physiological changes that elevate their susceptibility to specific health risks. The cardiovascular system undergoes alterations, heightening the chances of heart disease, high blood pressure, and atherosclerosis due to changes in blood vessels and the heart. Osteoporosis becomes a concern as bone density decreases, leading to an increased risk of fractures and falls. Arthritis, marked by joint cartilage degeneration and inflammation, contributes to pain and reduced mobility. Vision and hearing impairments intensify, affecting overall quality of life and increasing the likelihood of accidents. The aging process also involves a reduction in muscle mass and strength, contributing to frailty and a heightened risk of falls. Immune function weakens, making older adults more susceptible to infections and illnesses. Digestive issues, metabolic changes, respiratory problems, renal decline, and alterations in skin integrity further characterize the physiological health risks for older adults. Tooth loss introduces challenges like the use of dentures and the risk of malnutrition or choking from inadequately chewed foods. Elimination issues, including incontinence and constipation, present additional concerns.

Proactive measures, including maintaining a healthy lifestyle, regular exercise, a balanced diet, and consistent medical checkups, are essential to mitigating these risks. Additionally, staying socially active and mentally engaged contribute to overall well-being in aging individuals. Regular communication with healthcare providers is crucial for managing and addressing specific health concerns associated with the aging process. Nurses will find that by paying close attention to client needs, they can identify the interplay between physiological, psychological, and psychosocial risks to create a plan that simultaneously addresses multiple concerns.

Chronic Illness

A chronic illness can be described as a condition requiring medical attention or limiting usual daily activities for over one year (Centers for Disease Control and Prevention [CDC], 2022a). While chronic illness is not inevitable in older adulthood, it is prevalent. According to the National Council on Aging (NCOA) (2023), most adults older than 65 years of age have one chronic illness (95 percent), and a large majority have at least two chronic illnesses (80 percent). The NCOA (2023) also reports the most common and costly chronic illnesses are dementia, cancer, diabetes, and depression. Other high-cost, chronic conditions include hypertension, stroke, heart disease, lung disease, and arthritis. Chronic illness affects nearly all other physiological factors affecting older adults. Nurses must understand the distinct pathophysiology of specific diseases and the interrelationships between chronic illnesses that affect patient outcomes.

Accidental Injuries

Accidental injuries in older adults may include falls, burns, inappropriate medication ingestion, and transportation-related injuries. These injuries can range from mild to severe. Falls are one of the most common causes of injury in older adults. Falls are often linked to other health problems, such as high blood pressure, dizziness, poor mobility, weakness, and vision impairment. Identifying fall risk is crucial in protecting patients from acute injuries such as fractures, head injury, and skin injury, as well as sequelae of these acute injuries that may affect or worsen other health conditions.

LINK TO LEARNING

The CDC offers a fall risk prevention checklist (https://openstax.org/r/77fallrisk) to assist nurses, patients, and caregivers in evaluating fall risks in the home.

Functional Ability

Ramnath et al. (2018) describe functional ability as an individual's ability to effectively complete ADLs without

limitations related to pain or fatigue. Functional ability varies widely in the older adult population and is often related to chronic health conditions. Functional ability is related less to age than to overall wellness. Functional ability often determines an individual's ability to remain independent. The longer a person can remain independent, the better is their quality of life. Nurses can assess areas of declining functional ability and create care plans to address these problems before they impede overall daily functioning. This relates primarily to completing ADLs such as bathing, home care, hygiene, cooking, and cleaning.

CLINICAL JUDGMENT MEASUREMENT MODEL

Analyze Cues: Tuning in to Functional Ability

The nurse is caring for an older adult in an assisted living facility. The patient has returned recently from a hospital stay after a fall. Prior to the fall, this patient was independent in all ADLs except showering. The nurse notices that the patient has not finished dressing before it is time for breakfast. The nurse also finds that the patient's hair is ungroomed, and her dentures are still by the bathroom sink. The nurse considers possibilities for the change in patient ability to perform ADLs. The nurse remembers the patient had an injury to her shoulder from the recent fall. The nurse recognizes the patient will need assistance with more tasks that require upper body mobility until her injury completely heals.

Mobility

Mobility also varies widely in the older adult population. Some individuals continue to hike, bike, and engage in other strenuous physical activities, while others have severe limitations in mobility. Mobility is affected by lifestyle, weight, pain, and cardiovascular health. Focusing on maintaining the maximum mobility for an individual affects illness status, nutritional status, elimination status, and psychological status. Mobility changes are correlated with a higher risk for falls, changes in cognition, increased pain, increased symptoms of depression, and an overall reduction in quality of life (Musich et al., 2018).

Nursing interventions promote a patient's mobility and prevent the adverse effects of immobility. To avoid or minimize complications of immobility, mobilize the patient as soon as possible and to the fullest extent they are able to. Mobilization efforts, ranging from dangling on the edge of the bed, sitting up in a chair, and assisting with early ambulation, depend on the patient's unique circumstances. Encourage the patient to perform ADLs independently and participate in prescribed physical therapy. Encourage or perform active or passive range of motion exercises as the physical therapist prescribes. Maintaining mobility also promotes balance, flexibility, and strength. By helping older adults improve overall mobility, nurses help reduce individual fall risk and improve overall safety of their patients. Be aware that pain and fear of falling can deter a patient's willingness to ambulate or perform physical therapy.

Nutritional Imbalances

Nutritional status is also associated with various chronic health conditions, including dementia, kidney disease, heart failure, and chronic respiratory disease. In addition to the physical health of the individual, environmental and financial changes also affect the nutrition status of older adults. While up to 10 percent of older adults struggle with undernutrition, overnutrition and obesity are even more prevalent. Up to one-third of older adults experience the effects of overnutrition (Health in Aging, 2023).

Poor nutrition can contribute to health challenges for older adults, including the following (Norman et al., 2021):

- frailty
- fatigue
- increased fall risk
- worsening dementia
- increased fracture risk
- reduced skin integrity
- poor immune function

PATIENT CONVERSATIONS

Nutritional Supplement Safety

Scenario: Vicki is a retired 70-year-old who enjoys walking her dog, painting, and reading. She sees her primary care provider every six months for follow-up on her hypertension and hypercholesterolemia. Claire works as a nurse in the primary care medical office, where Vicki is a patient. While Claire records her current medication list, Vicki discloses a long list of supplements she has recently started on the recommendation of her daughter-in-law. Claire remembers the CDC (2021c) reported that more than 50 percent of adults take one or more vitamins, mineral, or herbal supplements.

Nurse: Vicki, I don't see these supplements in your medication history. About how long have you been taking these supplements?

Patient: I haven't been taking them for a long time, maybe a month or so.

Nurse: What is your goal with the variety of supplements you are taking?

Patient: My daughter-in-law thinks I am not active enough and had me start some of these to help with my energy, like the B-vitamin complex and the vitamin D supplement. Also, I am trying to manage my cholesterol naturally, so I have started the red rice yeast supplement and a probiotic. Sometimes I have trouble sleeping, so I take melatonin several nights weekly, which has helped. I also started an immunity vitamin and a multivitamin to help prevent illness this winter.

Nurse: I understand that there are many vitamin and supplement preparations to choose from. Did you bring your vitamin bottles in today, or do you remember what is in the combination supplements you mentioned for energy and immunity?

Patient: Yes, I did remember to bring in the bottles.

Nurse: That's great. We'll look at them together, and then you and the provider can discuss it further. I see that both the immunity and multivitamins contain vitamin D and calcium. There are also some B vitamins in the immunity preparation. Your provider will review the total amounts with you to determine whether the doses are safe. Another concern we'll want you to talk with the provider about is taking the red rice yeast supplement and your prescription cholesterol-lowering medication, as these can interact with each other and affect your liver.

Patient: I didn't realize that. Vitamins are natural and safe, right? Do I really need to worry about taking too much?

Nurse: Vitamins and other supplements should always be considered like a medication. Many vitamins significantly benefit immunity, bone health, and gut health. However, taking too much of some vitamins or supplements can cause problems with your prescription medications. You did the right thing by bringing these in to discuss so your provider can help you safely manage your supplements.

Fluid and Electrolyte Imbalances

As individuals age, hydration status can become a significant concern. In individuals with chronic illness, hydration status can be affected by illnesses, medications, overall nutrition, and mental status changes. Hydration is directly related to nutrition status since it affects taste, swallowing ability, elimination, digestion, and nutrient absorption. Some older adults develop a decreased sense of thirst, contributing to dehydration risk. Therefore, it is crucial to check on older adults more frequently during heat waves to ensure they are adequately hydrated and to prevent dehydration-related complications. Older adults who experience dehydration are at higher risk for falls, urinary tract infection (UTI), constipation, skin damage, electrolyte imbalances, altered mental states, and kidney injury. Healthy electrolyte balance is directly related to hydration status; however, it can also be affected by certain medications, such as diuretics and blood pressure medications.

Psychological Health Risks

The psychological health risks include cognitive and emotional responses to aging and life changes. Some are short-term responses and are related to life events; others are progressive and associated with factors such as the death

of family and friends, diagnosis of acute or chronic illness, debility from illness, loss of function or ability, and loss of independence. These factors may relate to emotional responses such as loneliness, hopelessness, and depression.

Dementia

Older adults are at high risk for cognitive impairment, including dementia. The CDC (2019) explains that dementia is a general term applied when an individual has trouble with daily functioning due to difficulty remembering, thinking, or making decisions. According to the National Institute on Aging (2022), various forms of dementia exist, such as vascular dementia, frontotemporal dementia, and Lewy body dementia; however, Alzheimer disease is the most prevalent. **Alzheimer disease** is a progressive disorder and general loss of cognitive function that presents with memory loss, behavior changes, and personality changes (National Institute on Aging, 2022).

The National Library of Medicine describes MCI as a decline in memory or thinking to a greater degree than expected for a person's age. This cognitive decline may include forgetfulness and trouble with word-finding. Mild cognitive impairment (MCI) is often associated with a higher risk of developing other dementias. According to the CDC (2019), 5.6 million older adults live with dementia. As dementia progresses, individuals develop a profound difficulty performing ADLs. All types of dementia put older adults at risk for injury, infections, social isolation, and reduced quality of life (Figure 41.4).

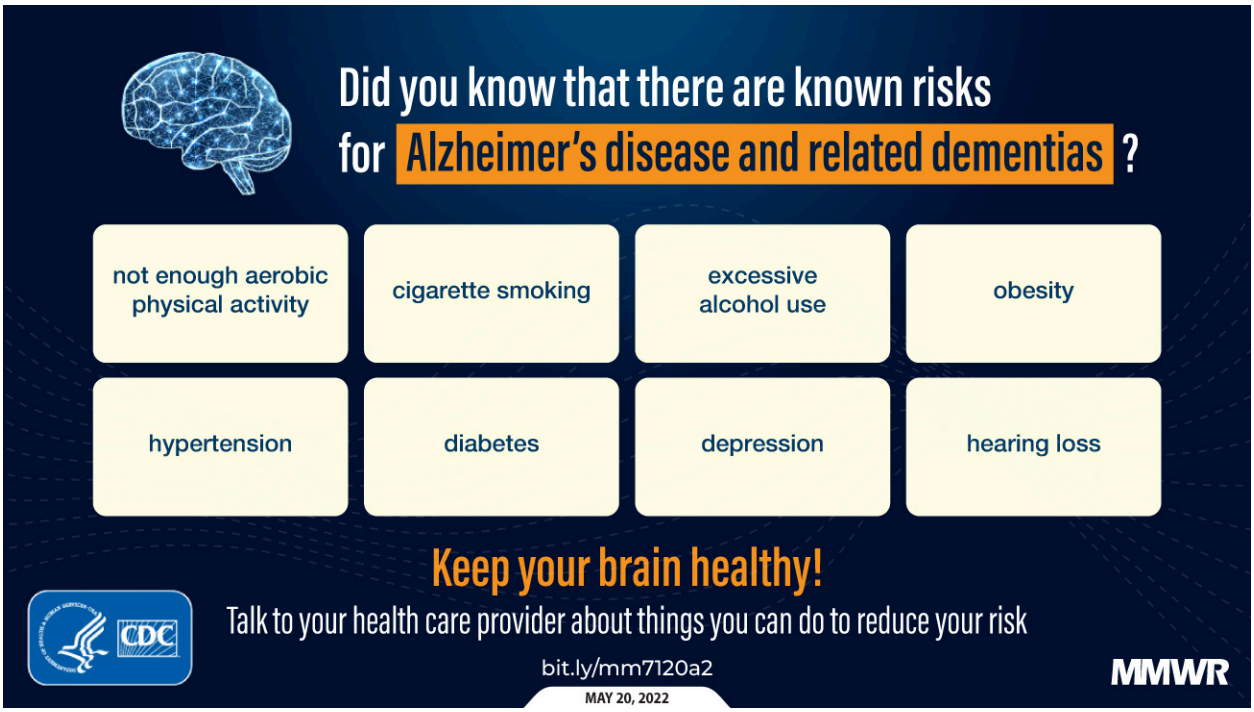

FIGURE 41.4 Take preventive action to help patients understand the risks of developing common types of dementia. (credit: "Did you know that there are known risks for Alzheimer's disease and related dementias?" by Center for Disease Control, Public Domain)

LINK TO LEARNING

Information about memory problems (https://openstax.org/r/77memprob) is provided in this quick video by the National Institute on Aging that clarifies the features of early dementia compared with simple forgetfulness.

Delirium

Older adults with chronic illnesses or those undergoing surgical procedures are at high risk for delirium. A sudden onset of confusion secondary to a physical illness is termed **delirium**. Medication metabolism in older adults changes due in part to changes in how the body excretes medications. Sometimes, delirium can occur because of issues related to hydration, kidney function, or medication metabolism. Often dose adjustments are required depending on age. Medication interactions are also a risk factor for delirium. In particular, anesthesia-associated medications can often trigger a state of delirium. Acute infections are also a significant risk factor for delirium. The

onset of delirium is a common sign of an infection, such as a UTI, in an older adult. Delirium can present as acute confusion in an adult with normal cognitive function or worsening dementia in an adult with an underlying cognitive disorder.

REAL RN STORIES

Strategies for Navigating Sundowning

Nurse: Jerelynn, RN
Clinical setting: Home Health
Years in practice: 20
Facility location: California

I've cared for individuals in their homes for fifteen years in practice; before that, I worked with individuals in a long-term care facility memory care unit. While many people with severe dementia reside in long-term care facilities, there is usually a period during dementia progression when they remain at home. Over the years, I've developed some tips for family members dealing with fluctuating levels of dementia and confusion. In sundowning, patients have increased confusion and agitation in the later afternoon or evening. I remember a patient named Bob as a good example. He was pleasant and spent his days visiting with his wife and watching television. During my home visits, his wife, Ruth, showed signs of anxiety and worry when I would leave later in the afternoons. Also, the personal care attendants documented increasing agitation during the afternoon and evening shifts.

Ruth explained that Bob would often get agitated with their television program, attempt to go outside in the middle of the night, or become angry with Ruth when she tried to explain they had already eaten dinner or that it was time to sleep. In listening to Ruth and reviewing Bob's daily documentation, I noticed several things:

1. He watched television most of the day.
2. He watched television in a dim room because the sunlight glared at the screen.
3. Bob would often doze during the day while watching television.
4. Bob and Ruth ate dinner at 4:30 p.m.
5. Bob complained of lower back pain.
6. Ruth had a recent foot surgery that did not allow her to take lengthy walks as they had done previously.

Based on these findings, I could attribute Bob's sundowning to several things:

1. He was overstimulated with the television throughout the day.
2. He did not have enough daylight exposure during daylight hours.
3. He was hungry later in the evening due to an early evening meal.
4. He had pain related to extensive sitting and minimal physical exercise.

I spoke with the personal care attendants and Ruth, and we developed some action items to help reduce Bob's sundowning syndrome. I recommended that Bob spend less time watching television, especially after lunch. I recommended audiobooks, crafts, folding laundry, visiting with family or friends, or reading magazines. During the evening, I recommended minimal stimulation from television and calming music. Since they are used to eating early, I recommended that the personal care attendants prepare a substantial evening snack that will remove the burden from Ruth and satiate any hunger that Bob feels. Also, the personal care attendants and Bob and Ruth's family created a daily activity plan, including a daily walk in the early afternoon. This helped reduce Bob's back pain and his overall agitation level.

While Bob's sundowning did not resolve completely, and his dementia did progress to a point where he moved to a memory care facility, I believe our interventions helped Bob remain active, independent, and living in his home for as long as possible.

Depression

Older adults are at risk for depression in similar proportions to younger adults. However, the American Psychological Association (2022) reports a significant increase in depression in older adults in the last fifty years. Despite this increase, the CDC (2022b) reports a low percentage (1 to 5 percent) of older adults with depression. For adults

requiring in-home or hospital care, the number increases significantly. Factors that put older adults at risk for depression include the following:

- chronic disease diagnosis or progression
- physical limitations
- reduced physical activity
- stress
- social isolation
- sleep disorders

Grief

Grief can play a significant role in the mental health of older adults (Figure 41.5). This grief may relate to the death of a spouse, friend, or other family member. Older adults may also experience grief over loss of function and independence. Understanding that the grief process is highly individual is crucial for nurses. Depending on the effectiveness of the individual's coping strategy, grief may progress healthily or progress to mental health concerns, such as depression.

FIGURE 41.5 Grief in older adults is a complex emotional response to loss that may manifest differently due to factors such as death, accumulated life experiences, health status, and coping mechanisms. (credit: "grief and loss" by Thomas8047/Flickr, CC BY 2.0)

The normal grief process, explained initially by psychiatrist Elisabeth Kübler-Ross (Figure 41.6), has a somewhat predictable pattern. However, the timeline for grief response is highly specific to each individual. Normal grief includes the common feelings, behaviors, and reactions to loss. Normal grief reactions to a loss can include the following:

- physical symptoms such as hollowness in the stomach, tightness in the chest, weakness, heart palpitations, sensitivity to noise, breathlessness, tension, lack of energy, and dry mouth
- emotional symptoms such as numbness, sadness, fear, anger, shame, loneliness, relief, emancipation, yearning, anxiety, guilt, self-reproach, helplessness, and abandonment
- cognitive symptoms such as a state of depersonalization, confusion, inability to concentrate, dreams of the deceased, idealization of the deceased, or a sense of the presence of the deceased
- behavioral signs such as impaired work performance, crying, withdrawal, overreactivity, changed relationships, or avoidance of reminders of the deceased

FIGURE 41.6 The Kübler-Ross grief cycle explains the normal grief process and can inform nurses when a patient is experiencing a form of complicated grief. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

The state of **complicated grief** is prolonged, delayed, or exaggerated in which individuals have trouble coping and progressing through the normal grief process. Complicated grief is seen in 10 to 20 percent of individuals experiencing the death of a romantic partner, with higher estimates for parents who have lost a child. Risk factors for developing complicated grief include sudden or traumatic death, suicide, homicide, a dependent relationship with the deceased, chronic illness, death of a child, multiple losses, unresolved grief from prior losses, concurrent stressors, witnessing a difficult dying process such as pain and suffering, lack of support systems, and lack of a faith system. Complicated grief may require professional assistance, depending on its severity. Factors contributing to complicated grief in older adults include lack of a support network, concurrent losses, poor coping skills, and loneliness. According to the End-of-Life Nursing Education Consortium, there are four types of complicated grief: **chronic grief** (normal grief reaction that does not subside), **delayed grief** (normal grief reaction that is suppressed or postponed), **exaggerated grief** (an intense reaction to grief), and **masked grief** (occurs when the survivor is unaware of behaviors that interfere with normal functioning due to the loss) (Table 41.4).

Grief Type	Patient Behaviors
Chronic grief: normal grief reactions that do not subside and continue over very long periods	Carol lost her son in a motor vehicle accident ten years ago. She has ongoing depression and rumination about the day of the accident. Nearly daily, she cries and feels hopelessness for the loss of her son. She has been unable to work since the accident.
Delayed grief: normal grief reactions that are suppressed or postponed by the survivor consciously or unconsciously to avoid the pain of the loss	James's wife died of colon cancer one year ago. Since that time, he has not discussed her death with friends or family and sometimes states, "it still feels like she might come through the door."
Exaggerated grief: an intense reaction to grief that may include nightmares, delinquent behaviors, phobias, and thoughts of suicide	Jana's sister died after contracting pneumonia two years ago. Jana continues to feel extreme fear about contracting an illness and rarely leaves her home even to shop.
Masked grief: grief that occurs when the survivor is unaware of behaviors that interfere with normal functioning due to the loss	Since the death of his wife, Gerald attends many social functions each day. By the time he arrives home, he is too tired to cook or care for his home. His family has noticed the decline in his physical appearance and his home.

TABLE 41.4 Identifying Complicated Grief

Loneliness

Grief is often tied to loneliness, particularly in older adults who have spent many years with a life partner. Losing close friendships or other familial relationships can also trigger loneliness. Loneliness can be a risk factor for and a

result of social isolation. The term **loneliness** is defined as a subjective feeling of distress related to being alone or separated from other people (Cacioppo et al., 2014). The National Institute on Aging (2019) reports that loneliness in older adults may be associated with a variety of health effects, including the following:

- high blood pressure
- obesity
- poor immunity
- depression
- anxiety
- dementia

Social isolation may be associated with loneliness and depression, but research has found that feeling lonely is possible even while among other people. The same research shows that individuals can live alone and not experience loneliness (Cacioppo et al., 2014).

Hopelessness

A severe psychological state that involves a deep sense of failure or despair is called **hopelessness**. In older adults, hopelessness may develop from untreated depression, grief, or loneliness. Other contributors to hopelessness may be chronic pain, loss of independence, and abuse. Hopelessness may also stem from long-term difficulty moving through life stages and may relate to Erikson's theory of integrity versus despair.

Psychosocial Health Risks

The psychosocial health risks encompass factors that affect both psychological and social well-being. Examples include chronic stress, social isolation, interpersonal conflicts, lack of social support, and exposure to adverse life events. Changes in living arrangements, limited transportation, and decreased financial resources may impede social interaction for some older adults. Older adults are at risk for health risks associated with a decrease in available and accessible resources. A decline in social interactions may lead to loneliness and depression. Role reversal is also a psychosocial issue for older adults as they navigate changing relationships with children and other caregivers. These factors can have a significant impact on mental health, emotional well-being, and the ability to cope with life's challenges. Addressing psychosocial health risks is crucial for promoting a holistic approach to wellness.

Living Arrangements

Older adults' living arrangements depend on physical independence, cognition, physical strength, financial security, and culture. A recent study reports that a similar number of older adults live with their spouse, children, or others compared to those living alone (Bolina et al., 2021). The same study concluded that while living arrangements significantly affect quality of life, each living arrangement has benefits and challenges for older adults. Some adults living with children, for example, experience less autonomy and social interaction. Adults who continue to live alone may experience continued autonomy; however, they may also experience less intimacy when not living with a significant other (Bolina et al., 2021). Loss of physical function is often associated with considering long-term care facilities, assisted living facilities, and cohabitation with adult children. Some older adults embrace a move that will afford them more assistance, while others grieve losing their home and independence.

Social Isolation

In older adults, **social isolation** refers to a condition where individuals experience limited social interaction and engagement. It can result from various factors, such as living alone, having few social connections, physical health challenges, mobility issues, lack of transportation, or the loss of friends and family. Social isolation is most prominent in older adults who live alone (Cacioppo et al., 2014). Social isolation can have detrimental effects on mental, emotional, and physical well-being, contributing to feelings of loneliness, depression, and a decline in overall health. Addressing social isolation involves fostering social connections, promoting community engagement, and providing support to enhance the social aspects of older adults' lives.

Decreased Resources

Financial hardship is a prominent risk for many older adults. The National Council on Aging (2021) reports that up to 47 million older adults face financial concerns or the risk of financial insecurity. Financial strain may result from planned retirement, reduced ability to perform previous work skills, or chronic health issues. Older adults are also at

risk for sudden changes in financial security, such as job loss, death of a spouse, acute illness, and injuries. Older adults may struggle to pay for monthly medications, long-term care, food, or basic living expenses. Nurses must also understand the concept of health resources and how this concept applies to healthcare access and health disparity (systematic differences in health outcomes and access to healthbcare between distinct groups, often associated with social, economic, or environmental disadvantages) among geographic and cultural groups.

Caregiver Role Strain

Caregiver role strain is a layered issue affecting many older adults. Individuals with declining health begin to rely on a spouse or partner for more intense care or assistance. Often, the care of older adults with increased frailty or progressive disease states falls to younger family members and children. Caregivers can experience stress from increased physical demands, increased responsibility in financial management, or reduced living space when an older adult moves in. Individuals taking on more caregiving tasks can quickly experience caregiver fatigue. Finding appropriate and consistent support is crucial for patients and their families. Nurses can support caregivers by acknowledging struggles and providing access to community and healthcare support services. This includes informing caregivers about adult day healthcare programs, which offer a way to keep a loved one at home while providing a much-needed break for caregivers.

CLINICAL JUDGMENT MEASUREMENT MODEL

Take Action: Caregiver Support

A home health nurse is providing in-home wound care for an 89-year-old male with dementia who lives with his son. The son is very attentive and attends each visit in order to learn the proper way to care for the wound between nurse visits. The nurse notices the son seems fatigued and opens a conversation to discuss how the son is feeling. He breaks down and expresses intense feelings of being overwhelmed with working at home, caring for his father, and performing household duties. He has felt more caregiver strain as his father's dementia progresses. The nurse expresses empathy in the moment and forms a plan for reducing the son's caregiver strain. During the next two weeks the nurse is able to secure additional in-home care for the patient, arrange transportation services for appointments, and arrange for a case manager to help manage ongoing resource needs. She also encourages the son to attend a dementia caregiver support group at the local community center.

Elder Abuse

The CDC (2021b) reports that up to 10 percent of older adults living at home experience some form of abuse, neglect, or mistreatment. This **elder abuse** encompasses all direct actions and neglectful actions by a caregiver that cause harm or risk of harm to an older adult. The CDC (2021b) explains that elder abuse can occur in a variety of settings, including the patient's home or long-term care facility. Several physical and psychological characteristics put an older adult at risk for abuse, including dementia, mental health disorders, and substance misuse. Psychosocial risk factors for abuse include social isolation, financial dependence, and low socioeconomic status. Forms of elder abuse identified by the CDC (2021b) include physical, sexual, psychological, financial, and neglect. Examples of elder abuse include inflicting physical harm through actions like hitting or restraining, engaging in nonconsensual sexual contact, causing emotional distress through threats or verbal abuse, illegally using an older adult's financial resources, and neglecting to provide essential care and support for basic needs like food and medical care. While older adults often experience a higher risk for injury, awareness of frequent injuries or patterns

can alert nurses to the possibility of abuse (Table 41.5).

Physical	Psychological
• Scratches • Bruises • Fractures • Sprains • Frequent falls • Repeated injuries • Poorly healing wounds • Medication overdose • Signs of physical restraint • Inconsistent injury patterns • Dehydration • Malnutrition	• New-onset anxiety • Emotional distress • Withdrawal from activities • Poor self-care • Trouble with communication • Fearfulness • Tearfulness • Depression

TABLE 41.5 Physical and Psychological Signs of Elder Abuse

41.4 The Nurse's Role in Preventing Illness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify nursing considerations for the older adult
- Recognize interdisciplinary team referrals for the older adult

Nurses are key to illness prevention and health promotion for older adults. Coordination of care is crucial for minimizing the health consequences of disease and ensuring that appropriate health screenings are completed on time. Primary prevention with available screening tools helps prevent illness and ensures early detection of disease. Nurses can help prevent injuries and falls with diligent safety awareness. By using screening tools for functional health and mental health disorders, nurses can ensure patients have the support tools they need to maintain a good quality of life throughout older adulthood.

Nursing Considerations for the Older Adult

Nurses working in a wide variety of clinical settings will encounter older adults. With a strong knowledge of the nursing theories relating to older adults, developmental changes, and health risks associated with aging, nurses can lead the care team for older adults. Nurses are critical in ensuring that older adults receive individualized care, including ancillary therapies (additional or supplementary therapeutic interventions that are used alongside primary or main forms of treatment), specialty medical evaluations, nutritional support, and screening tests. Nurses are often responsible for assessing functional health, nutritional status, and gaps in care requiring referrals.

While nurses working in most settings will care for older adults, it is important to note there is a specialized branch of nursing, **geriatric nursing**, dedicated to the comprehensive care of older adults. Geriatric nurses undergo specific training to understand and address the complex healthcare needs associated with aging. Their role encompasses a holistic approach that considers not only the physical health but also the psychological and social aspects of older individuals. They play a vital role in health promotion, educating and guiding older adults on practices that contribute to healthy aging. By tailoring care plans to the unique needs of older adults, geriatric nurses contribute significantly to promoting optimal well-being and improving the quality of life for older individuals.

Assess Functional Health

Nurses are vital in maximizing the quality of life for older adults, particularly those struggling with chronic illnesses. An individual's ability to complete necessary daily tasks is called **functional health**. By assessing functional health, nurses create a springboard for various treatment modalities to help older adults maintain their maximum quality of life. Mishra et al. (2020) lists several specific functional health patterns important for integrating nursing and other medical care. The patterns include the following:

- health perception
- ADLs
- cognitive ability
- self-perception

Nurses can utilize various assessment tools aimed at older adults for evaluating the baseline functional health of older adults (Table 41.6).

Assessment Tool	Nursing Application
Activities of daily living (ADLs)	• A wide variety of tests to evaluate a person's ability to perform common self-care tasks • Assesses tasks such as bathing, oral care, dressing, grooming, and toileting • Can give clues to level of independence, fall risk, safety, and quality of life
Instrumental activities of daily living (IADLs)	• Tools to assess the ability of individuals to live and function independently within in the community • Evaluates more complex tasks such as making phone calls, cleaning, preparing meals, managing medications, managing finances, and mode of transportation
Mini-Mental State Exam (MMSE)	• Assesses for mild cognitive impairment, cognitive decline, and early dementia
Geriatric Depression Scale (GDS)	• Assesses for signs of depression • A screening tool only, does not take the place of an evaluation by a mental health professional
Short Form 12 (SF12)	• Assesses the effects of health on everyday functioning • Includes measures of pain, social and physical activity, mental health, energy, and health perceptions • Strong indicator of quality of life

TABLE 41.6 Assessment Tools for Functional Health

LINK TO LEARNING

The Geriatric Depression Scale (https://openstax.org/r/77gerdepress) and Geriatric Depression Scale (short form) (https://openstax.org/r/77gerdeprsrt) can help nurses understand a patient's baseline mental health status.

A **comprehensive geriatric assessment** (CGA) is a detailed assessment that includes many health indexes. A CGA evaluates ADLs, IADLs (activities that allow an individual to live independently in a community, such as cooking, cleaning, and managing medications), mental health, fall risk, pain, **polypharmacy** (simultaneous use of multiple medications), nutrition, sensory issues, dentition, and advanced care preferences. Nurses work with primary care providers and social workers in developing an individualized CGA.

REAL RN STORIES

Risk Assessment: SPICES Tool

Name: Vivian, BSN
Clinical setting: Surgical Department

Years in practice: 17
Facility location: Minnesota

I've spent all seventeen years of my nursing career working with inpatients recovering from surgical procedures. The surgical procedures include gynecological procedures, orthopedic joint replacements, traumatic surgical repairs, and cancer-related treatments. When I work with nursing students and new nurses, I always refer to the SPICES tool for understanding individual patient risks. SPICES stands for these conditions:

S—Sleep disorders
P—Problems with eating
I—Incontinence
C—Confusion
E—Evidence of falls
S—Skin breakdown

This helps both new and experienced nurses maintain awareness of complication risks and adapt care plans to keep patients safe and help them recover quickly. I recall an 85-year-old patient named Julie who received a hip pinning after a fall in her home left her with a broken hip. Before her fall, she lived independently. She had one daughter who lived an hour away. She had medical diagnoses of high blood pressure, hypothyroidism, and osteoporosis. Julie had difficulty arousing from anesthesia and spent several more days on the surgical unit than expected. During my time caring for her, I applied the SPICES tool.

S—Julie had trouble regaining her sleep-wake pattern after anesthesia. This was related to confusion and medication interactions. While caring for Julie, I discussed a sleep aid with her surgeon, who felt this was appropriate to help her maintain adequate sleep for healing. Because of the nature of the sleep aid, a bed alarm was employed to maintain her safety.

P—Julie did not have a specific problem with eating, but she did have trouble with elimination. Stool softeners and laxatives were required to resume her bowel function before discharge.

I—Julie did not struggle with incontinence. However, she had urinary retention after removing her urinary catheter, which required another call to the surgeon for straight catheter orders. As she became more mobile, Julie resumed her usual urinary patterns.

C—Julie did have significant confusion the first twenty-four hours after her procedures. She required a bed alarm and close monitoring to prevent falls.

E—Julie had many risk factors for falls, and her entire care plan focused on preventing another fall.

S—Since Julie experienced confusion after her procedure, she could not begin mobility work as soon as planned. Due to a decreased ability to move in bed and safely move her hip, we implemented a turning and toileting schedule. During these scheduled turns, I assessed for any skin breakdown.

Overall, Julie was a high-risk individual, and keeping the SPICES in mind helped me create a care plan that prevented further falls and complications. Julie was discharged to a rehabilitation facility and, after three weeks, was released to live with her daughter.

Provide Health Screenings

Nurses can help manage health screening in older adults. Awareness of age-appropriate health screening is essential for creating a comprehensive nursing care plan that promotes disease prevention. Some health screenings are offered at the community level, such as cholesterol screenings and nutritional assessments. Other screenings require healthcare provider input to determine appropriateness and test ordering. The U.S. Preventive Services Task Force (n.d.) is an excellent source for determining the screening tests recommended for older adults of varying ages. For older adults living in long-term care facilities, some health screenings are done routinely for all individuals. Health screenings may involve comprehensive functional assessments, lab values, and specialty tests such as ultrasounds, mammograms, computed tomography scans, and colonoscopies. Screening test standards for older adults may include the following:

- colon cancer screening

- mammograms
- prostate-specific antigen testing
- cholesterol testing
- osteoporosis screening
- abdominal aortic aneurysm (AAA) screening
- fall risk evaluation
- comprehensive geriatric assessments
- nutritional assessments
- functional assessments

LINK TO LEARNING

The U.S. Preventive Services Task Force offers comprehensive graded recommendations for screening tests (https://openstax.org/r/77screentest) across the life span.

Pain Management

As with individuals of all ages, older adults may experience acute pain from injuries, procedures, or medical treatments. Chronic pain is also prevalent in older adults and can range from minor to severe. Common causes of chronic pain in older adults include arthritis, degenerative spine disorders, cancer-related pain, and neuropathy. The pain threshold in older adults may be lower due to changes in circulating neurotransmitters (Ali et al., 2018). Pain management in older adults may be complicated by the following factors:

- cognition
- medication interactions
- kidney function
- fall risk
- sleep disturbance
- depression

Pain management in older adults can be complex due to various factors that contribute to the challenges of assessment and treatment. One significant factor is cognition, as many older individuals may experience cognitive decline, including conditions like dementia or Alzheimer disease. This decline can impede effective communication about pain symptoms, making it difficult for healthcare providers to accurately assess and address pain levels. Additionally, the use of multiple medications to manage various health conditions can result in interactions that impact the effectiveness or safety of pain medications. Kidney function, which tends to change with age, is another consideration, as it can influence the choice and dosage of pain medications. Furthermore, pain itself may contribute to a higher risk of falls, impacting mobility and balance. Sleep disturbances, depression, and other mental health factors can further complicate the overall picture of pain management in older adults. Healthcare professionals must carefully navigate these complexities to develop tailored and effective pain management strategies for this population. One effective strategy is to assess pain levels before and after pain medication administration by observing facial expressions and other indicators of discomfort using the Wong-Baker FACES Pain Rating Scale, especially considering the challenge some patients face in describing their pain.

The American Geriatrics Society offers specific guidelines on pain management in older adults (Table 41.7). Medications are classified as low to high risk based on the side effect profile and risk-benefit analysis. There is a balance between safe treatments for pain and untreated pain. Low-risk medications typically exhibit few interactions with other medicines and do not produce side effects that may increase fall risk or affect kidney or liver function at proper dosing.

Low-risk pain medications (used as first-line treatments)	• Tylenol • Oral nonsteroidal anti-inflammatory drugs (NSAIDs) • Topical NSAIDs • Topical lidocaine • Capsaicin • Serotonin-norepinephrine reuptake inhibitors (SNRIs) • Tricyclic antidepressants (TCAs)
High-risk pain treatments	• Opioids • Benzodiazepines • Muscle relaxants • Cannabinoids

TABLE 41.7 American Geriatrics Society Pain Medication Guidelines

In addition to medication, pain management modalities may include the following:

- physical therapy
- occupational therapy
- physical exercise
- chiropractics
- procedural injections
- stress management
- meditation

PATIENT CONVERSATIONS

Managing Arthritis Pain

Scenario: Raelynn is a 67-year-old who lives in an apartment attached to her daughter's home and spends significant time caring for her three grandchildren. She has osteoarthritis in multiple joints and degenerative disk disease in her lower back. She has had one knee replacement that resulted in a postoperative infection. This has healed, but she is too nervous to undergo a knee replacement on the other leg after her experience. She needs to remain active and spend time outdoors with her family. Josiah is an RN in the pain specialty clinic where Raelynn is a patient. While Josiah records her vital signs, Raelynn explains her pain symptoms and expresses frustration with not being able to do small hikes with her young grandchildren. Josiah initiates a conversation about Raelynn's pain to facilitate a productive treatment discussion with the orthopedic specialist.

Nurse: How would you describe the pain you experience in your knee? Please rate your pain between zero being no pain and ten being the worst pain you've experienced.

Patient: I've had knee pain for years. It just keeps getting worse, and I can do less and less of the things I like to do with my family. I have tried topical creams like lidocaine over the counter. And I take acetaminophen regularly, as my primary care provider suggested. When I first get up, my pain can be as high as an eight, but it hovers around a four once I get moving. I do use some topical cannabis ointment that does give me some relief, but it doesn't last long.

Nurse: It sounds like you've tried several things to improve your pain. Does any physical exercise seem to help?

Patient: Well, I was doing yoga for a while, which did help, but I can't afford the gym membership now.

Nurse: Yoga is great; we work cooperatively with a wellness center to provide low-cost movement classes, like yoga, to our patients. Would this be something you would be interested in?

Patient: Yes, I'd like to try this option. I would also like to get back in with a physical therapist, as this has helped me in the past as well. I want to avoid any medications that will make me tired. I care for my grandchildren while my daughter works, and I need to be alert and interactive.

Nurse: I'll note your interest so the provider can discuss options with you, and we can get these referrals processed. The provider will also discuss other medication options with you that are nonsedating. The provider will also be able to tell you if any injections in your joint might be helpful for a more extended period.

Promote Physical Activity

Physical movement is crucial for older adults. High- and low-intensity activity helps maintain muscle mass, improve balance, improve circulation, and minimize fat deposition. Group exercise in community settings or long-term care facilities promotes mental functioning. By focusing on physical activity, nurses can promote healthy elimination and digestion. The CDC (2021) explains that even short-duration physical activity, such as brisk walking, can help manage symptoms of most chronic illnesses. Physical exercise also improves alertness and plays a role in reducing anxiety and depression. Nurses in various clinical settings can help clients resume or begin physical activity after setbacks due to illness or injury (Table 41.8). Nurses can guide clients to community exercise groups, outdoor walking groups, and senior centers offering gentle motion classes. The CDC recommends 150 minutes of moderate-intensity exercise weekly for older adults and muscle-strengthening exercises at least two days per week.

Fall Risk Factor	Nursing Interventions
Altered mental status	• Assess for delirium. • Delegate additional trained supervision for patients showing signs of agitation. • Consider the use of safety measures such as low beds, mats for each side of the bed, nightlight, gait belt, and a "STOP" sign to remind patients not to get up.
Impaired mobility	• Provide direct assistance with mobility as indicated by the patient's condition. • Ensure assistive devices for mobility are within safe reach.
Frequent toileting needs	• Create a regular toileting schedule. • Ensure safety handles are in good repair to assist with toileting.
Visual impairment	• Maintain clean corrective lenses. • Ensure corrective lenses are within reach. • Remind patient to wear corrective lenses when walking.

TABLE 41.8 Nursing Interventions Based on Fall Risk Factors

Fall Risk Factor	Nursing Interventions
High-risk medications	• Be aware of medications that have the potential to increase fall risk. • Consult with healthcare provider and pharmacist regarding medications that may increase fall risk. • Check orthostatic blood pressures routinely. • Educate the patient and their caregivers about fall risk and steps to prevent falls when the patient is taking these medications.
Frequent falls	• Assess ongoing fall risk related to disease and medications. • Evaluate the environment to ensure safety and reduce fall risk obstacles.

TABLE 41.8 Nursing Interventions Based on Fall Risk Factors

Medication Education

Medication education is vital during several key patient interactions. Nurses have opportunities to explain medication treatments during admission assessments, medication administration, discharge planning, patient education sessions, outpatient clinics, follow-up visits, and home health visits, ensuring patients understand the purpose, potential side effects, and proper administration of their medications. Nurses work directly with pharmacists and prescribers to maintain patient safety with medication treatments. During hospital stays, nurses administer medications routinely. In addition to the five rights, medication administration involves educating patients on the purpose of the prescribed medications. Medications for pain are tailored specifically for each patient's level of pain.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Safety

Definition: Reducing a patient's risk of harm by incorporating individual quality performance standards and system effectiveness.

Knowledge: Chronic disease prevalence in the older adult population increases the risk of polypharmacy and associated complications in this age group. Polypharmacy refers to using multiple medications simultaneously to treat one or more medical disorders. Typically, polypharmacy refers to the use of five or more medications. With each addition of medication, the risk for drug-drug interactions significantly increases. There is a risk for compounded side effects and a risk to organs such as the kidney and liver.

Skill: Nurses can always be alert for polypharmacy, monitor for any medication indication duplication, and be aware of when medications can be stopped. It is appropriate to bring concerns about polypharmacy to the attention of healthcare providers, particularly in long-term care settings where several patients' medications are stored.

Attitude: Polypharmacy is common; nurses also play a role when new medications are added, understanding and being proactive about checking medication interactions, discussing medication management with patients, and keeping open communication with pharmacists about minimizing side effects and interactions.

The AGS Beers Criteria, formulated by the American Geriatrics Society, serve as a crucial reference tool for healthcare professionals in identifying potentially inappropriate medications for older adults (Cleveland Clinic, 2023). Among the medications commonly listed are benzodiazepines like diazepam, lorazepam, and alprazolam, frequently prescribed for anxiety or insomnia. The caution arises from the heightened risk of falls, cognitive impairment, and other adverse effects associated with the use of these drugs in older individuals. Additionally,

nonbenzodiazepine hypnotics, such as zolpidem, commonly prescribed for sleep-related issues, are flagged due to their potential contribution to drowsiness, falls, and impaired cognitive function.

The role of a nurse becomes pivotal when medications listed on the AGS Beers Criteria are identified during patient care. The nurse's responsibilities encompass a comprehensive assessment of the patient's medication history, with a keen focus on prescriptions and over-the-counter drugs, and diligent documentation of any medications flagged by the Beers list. Effective communication with pharmacists, prescribers, and the broader healthcare team is paramount, fostering collaborative discussions to explore safer alternatives. Patient education becomes a crucial aspect, with the nurse providing clear explanations of potential risks associated with identified medications and actively involving the patient in decisions about their health care.

LINK TO LEARNING

The American Geriatrics Society updates the AGS Beers Criteria (https://openstax.org/r/77AGSBeers) every three years (Cleveland Clinic, 2023). At this website, you can learn more about the AGS Beers Criteria, including the medication classes that are not recommended for use in the older adult population.

Assess for Neglect or Abuse

Nurses must always remain diligent in monitoring for signs of abuse and neglect in older adult populations. This is especially true for individuals with dementia, those who live alone, and those with financial strain. Nurses can employ a variety of abuse screening tools, such as the Elder Abuse Suspicion Index and the Vulnerability to Abuse Screening Scale, in the event of abuse suspicion (National Center on Elder Abuse, 2016). These assessment tools focus on physical care, medical management, emotional abuse, sexual abuse, financial abuse, and neglect. It is important to note these tools are not diagnostic but serve as indicators for further assessment and intervention. Professionals using these tools must follow appropriate protocols and ethical guidelines when suspicions of abuse or neglect arise, involving appropriate authorities and support services as needed.

CLINICAL JUDGMENT MEASUREMENT MODEL

Fall Risk Assessment in Clinical Practice

In caring for older adults, nurses can rely on the Clinical Judgment Measurement Model (CJMM) to guide client assessment, individualize care based on clinical cues, and evaluate the effectiveness of nursing interventions across practice sites. Fall risk assessment offers a clear example of application in clinical practice (Table 41.9).

CJMM Step	Clinical Application
Recognize clues	The nurse notices a patient has an uneven gait, shows physical weakness, and expresses dizziness. The nurse witnesses a near fall and sees several bruises on the patient's forearms.
Analyze clues	The nurse determines the patient is at high risk for falls. The nurse understands that medications, general weakness, floor rugs, and lack of assistive device are playing a role in fall risk.
Prioritize hypotheses	The nurse prioritizes the need to improve the physical environment of the client and then reporting physical symptoms of dizziness, weakness, and possible medication effects to the healthcare provider.
Generate solutions	The nurse creates a plan with the patient, family, and other caregivers to improve the physical environment by removing floor rugs, obtaining a walker, and creating a plan for toileting to avoid rushing.

TABLE 41.9 **Clinical Judgment Measurement Model in Independently Living Older Adults with Fall Risk**

CJMM Step	Clinical Application
Take actions	The nurse requests an order for a walker and enlists family to help keep floor areas free of debris.
Evaluate outcomes	The nurse notices a reduction in injuries over the next several months. The patient vocalizes a sense of safety when moving around the home.

TABLE 41.9 Clinical Judgment Measurement Model in Independently Living Older Adults with Fall Risk

Interdisciplinary Team Referrals

Working within the medical community means nurses must work closely with colleagues in other specialties. In caring for older adults, nurses will frequently collaborate with nurses and other healthcare providers in specialties such as orthopedics, endocrinology, cardiology, pulmonology, and dermatology. Additionally, ancillary specialty services play a key role in the health of older adults, and nurses will frequently interact with physical therapists, occupational therapists, cardiac rehabilitation specialists, and mental health professionals, among others. Collaborative care is essential for quality and streamlined patient care. Nurses may work in formal interdisciplinary teams or document and forward referrals to specialists for additional care. When a patient requires specialty care, a nurse will provide a **referral** for these services by forwarding appropriate records, arranging appointments, and coordinating care.

Nutritional Support

Nutritional support may relate to general health eating or may focus on specific disease management. Nutritional support is necessary for many common chronic disease states, including the following:

- diabetes
- heart disease
- colitis
- celiac disease
- obesity
- high cholesterol
- hypertension

Nurses rely on nutritionists to educate older adults with diabetes on proper nutrition to manage the disease and minimize complications. Nutrition services are essential in long-term care facilities and for individuals living at home. Some older adults struggle with financial strain and may struggle to afford food. Nurses can guide these clients to community resources, such as meals-on-wheels and the Older Americans Act nutrition programs, to minimize hunger in the adult population.

LINK TO LEARNING

At this website, facts about the Older Americans Act Nutrition Programs (https://openstax.org/r/77oldamact) are available.

Specialty Referrals

Specialty referrals are common for patients discharged from the hospital and those seeking care through a primary care provider (Table 41.10).

Physician Specialties	Indication for Referral
Allery and immunology	Asthma, allergies, hives
Behavioral health	Depression, anxiety, bipolar disorder
Cardiology	Heart attack, heart murmur, chest pain, heart palpitations, stroke
Dermatology	Skin cancer, rash, cysts
Endocrinology	Diabetes, thyroid dysfunction
Gastroenterology	Diarrhea, constipation, rectal bleeding, gastroesophageal reflux disease (GERD), abdominal pain
Hematology	Blood cell abnormalities, anemia, leukemia
Neurology	Cognitive decline, neuropathy, carpal tunnel
Oncology	Any cancer diagnosis
Ophthalmology	Acute or chronic vision changes, eye pain, temporal arteritis
Orthopedics	Arthritis, degenerative disk disease, traumatic injuries, joint pain
Pulmonology	Chronic obstructive pulmonary disease, chemical lung exposures, sleep apnea
Rheumatology	Joint pain, elevated arthritis markers
Urology	Prostatitis, elevated prostate-specific antigen test, hematuria, prostate enlargement, overactive bladder

TABLE 41.10 Indications for Specialty Referrals

For older adults, accessing a range of ancillary specialty services can significantly contribute to their comprehensive health care. These specialized services cater to diverse aspects of health and functional well-being. Physical therapy focuses on enhancing mobility and strength, while occupational therapy addresses daily living skills. Speech therapy becomes crucial for managing communication disorders and swallowing difficulties. Respiratory therapy specializes in improving lung function and managing breathing difficulties, particularly beneficial for individuals with conditions like chronic obstructive pulmonary disease. Wound care specialists play a vital role in assessing and treating wounds to prevent complications and promote healing. Nutritionists offer guidance on dietary habits, diabetes educators provide support for managing diabetes, and weight management specialists address weight-related concerns. Pain management specialists assess and treat chronic pain conditions, aiming to improve the overall quality of life. This collaborative approach involving various ancillary services, alongside primary care, ensures a holistic and tailored care plan for older adults, addressing their unique needs and enhancing their overall health and functionality.

Community Resources

Community resources for older adults play a crucial role in enhancing their well-being and overall quality of life. While community resources vary by location and size of the city, many communities have volunteer services for older adults, such as senior centers, exercise classes, meals, library book delivery, and read-aloud services. Senior centers serve as social hubs, offering a range of activities, educational programs, and wellness services to promote

engagement and connectivity among older community members. Meals-on-wheels programs provide a valuable service by delivering nutritious meals to seniors at home, addressing concerns related to food preparation and ensuring they maintain proper nutrition. Transportation services designed for older adults help address mobility challenges, ensuring they have access to essential services, medical appointments, and community activities. Other community resources might include grief support groups, disease-specific support groups, and hobby groups. These resources collectively contribute to creating an age-friendly community that supports the independence, health, and social connections of older individuals. It is important for seniors and their caregivers to be aware of and utilize these community resources to enhance their overall well-being.

Caregiver Resources

Nursing care for older adults often involves caring for the family and other caregivers. For individuals caring for older adults, there are various caregiver resources available to provide support and guidance. Local aging agencies often offer assistance in the form of information, counseling, and respite services. The term **respite** refers to a short period of rest or relief, typically provided to caregivers who are responsible for the continuous care of individuals with special needs, disabilities, or chronic illnesses. During respite, caregivers can take a temporary break from their caregiving duties to recharge, attend to their own needs, or engage in activities that promote their well-being. Support groups, whether in-person or online, provide caregivers with opportunities to connect, share experiences, and receive emotional support from others facing similar challenges. Educational programs and workshops help caregivers develop essential skills for managing the physical, emotional, and logistic aspects of caregiving. Additionally, online platforms and helplines offer information on specific health conditions, legal matters, and financial planning related to caregiving. Accessing these resources empowers caregivers with the knowledge and assistance needed to navigate the complexities of providing care for older adults and maintain their own well-being in the process.

Caregivers may find valuable support from organizations such as the Family Caregiver Alliance, Caregiver Action Network, and various support groups, including those focused on grief. The Caregiver Action Network, in particular, offers comprehensive resources to assist family members in their caregiving responsibilities. Nurses can play a vital role in supporting caregivers by facilitating access to these support services, attentively listening to their concerns, and ensuring that caregivers are informed about where to seek assistance for any questions or challenges they may encounter. This collaborative approach helps create a supportive network for caregivers, enhancing their ability to provide effective care while prioritizing their own well-being.

LINK TO LEARNING

The Caregiver Action Network provides a comprehensive family caregiver toolbox (https://openstax.org/r/77famcaretool) that provides resources for families, caregivers, and nurses alike.

Summary

41.1 Growth and Development Stages

When providing care for older adults, it is crucial to understand how your patients develop and change over time. Older adults experience many challenges with their physiological, psychological, and psychosocial environment. Developmental changes and challenges are common but are not universal. Nurses across all specialties must provide compassionate and individualized care for older adults.

Physical changes in older adulthood affect all organ systems. By understanding physiological and physical changes that develop with age, nurses can tailor care to promote wellness for each patient. Nurses must diligently monitor for psychological changes that may signal mental health disorders or cognitive decline in older adults.

With a strong understanding of the older adult developmental stage, nurses can empower their clients with positive coping strategies. Patients must adapt to physical, cognitive, emotional, and social changes, and nurses are an excellent resource for maximizing older adult wellness.

41.2 Theories Related to the Older Adult

Clearly understanding theories of aging puts nurses at an advantage when caring for older adults. Older adults' physical abilities, disease burden, and cognitive functioning vary significantly. This variation may be related to advancing age but is more often unique to each individual. Using Erikson's psychosocial development theory and Maslow's hierarchy of needs as a springboard, nurses can target specific needs and risks for each patient to create an individualized care plan.

Havighurst's activity theory is highly applicable to nursing practice. Nurses practicing activity-focused care create a positive patient wellness and healing environment. Tailoring interventions based on each patient's level of engagement encourages a sense of belonging and acceptance regardless of their physical abilities.

By applying theories that provide accurate depictions of aging, nurses can modify their mindset and learn how to provide age-appropriate care that produces positive patient outcomes. A strong understanding of these theories can help the nurse to dispel the many myths around aging.

41.3 Health Risks for Older Adults

Health risks vary widely among older adults. While some adults have few health concerns, nurses need to understand the common health risks in this population. Awareness of the risks allows nurses to make informed treatment plans. Health risks fall into three categories: physiological, psychological, and psychosocial. The health risks in these categories frequently overlap. Physiological changes can strain psychosocial interactions, and cognitive decline may affect physical and psychosocial functioning.

Physiological health risks include changes that lead to illness or injury. Older adults are at risk for mobility, nutrition, and overall functional ability changes. Psychological changes such as cognitive decline and dementia are often progressive. Psychological changes often affect the functional ability of the patient. Nurses must diligently monitor for progressive and acute mental status changes that can affect patient outcomes. Tools are available for nurses to monitor the mental health of their patients. Recognizing depression, grief, and loneliness is the first step in maintaining a healthy outlook during older adulthood.

Psychosocial changes in older adulthood put individuals at risk for mental health disorders such as depression and loneliness. Nurses play a role in assisting older adults in developing coping skills to deal with changes in living environment, transportation, and available resources. Nurses must always be alert for signs of abuse and maintain an awareness of health disparity that may affect the quality of life of their patients.

41.4 The Nurse's Role in Preventing Illness

Nurses care for older adults in primary care, specialty care, home care, and long-term care settings. Regardless of the setting, the key roles of nurses are illness prevention and wellness maintenance. Nurses must promote health screening options by following current medical guidelines. Working with healthcare providers to perform functional and comprehensive health assessments allows nurses to tailor care to each individual. Routinely performing assessments enables nurses to identify risks and recommend appropriate referrals.

Nurses continuously collaborate with other medical professionals in specialty clinics. This might include interdisciplinary teams, including physician specialists, mental health professionals, physical therapists, pharmacists, occupational therapists, and speech therapists. Collaboration with support services, including social workers, spiritual leaders, and counselors, is also crucial. Nurses may create active treatment plans or ensure that specialist referrals are processed. The ability to identify a need and enlist the appropriate collaborative team members is a unique strength of nurses.

Key Terms

activity theory a theory on aging that suggests that the more active and involved an older person is, the happier they will be

age stratification theory a theory suggesting that members of society might be stratified by age, just as they are stratified by race, class, and gender

ageism prejudice and stereotype based on a person's chronological age

Alzheimer disease a progressive disorder and general loss of cognitive function that presents with memory loss, behavior changes, and personality changes

chronic grief normal grief reaction that does not subside and continues over a very long period of time

complicated grief a state of grief that is prolonged, delayed, or exaggerated in which individuals have trouble coping and progressing through the normal grief process

comprehensive geriatric assessment a detailed assessment that includes many health indices including ADLs, IADLs, mental health, fall risk, pain, polypharmacy, nutrition, sensory issues, dentition, and advanced care preferences

delayed grief normal grief reaction that is suppressed or postponed by the survivor consciously or unconsciously to avoid the pain of the loss

delirium an acute but reversible condition characterized by confusion and disorientation secondary to a physical illness

dementia alteration and progressive loss of brain function resulting in cognitive decline

disengagement theory a theory suggesting that withdrawing from society and social relationships is a natural part of aging

elder abuse all direct actions and neglectful actions by a caregiver that cause harm or risk of harm to an older adult

exaggerated grief an intense reaction to grief that may include nightmares, delinquent behaviors, phobias, and thoughts of suicide

functional foods foods that serve a useful purpose for the body in addition to energy intake

functional health an individual's ability to complete necessary daily tasks

geriatric nursing specialized branch of nursing dedicated to the comprehensive care of older adults

hopelessness a severe psychological state involving a deep sense of failure or despair

loneliness a subjective feeling of distress related to being alone or separated from other people

masked grief grief that occurs when the survivor is unaware of behaviors that interfere with normal functioning due to the loss

mild cognitive impairment (MCI) forgetfulness, short-term memory loss, and thinking impairment

older adult adults 65 years of age or older

physical changes relating to outward expressions of changes in the body

polypharmacy the use of multiple medications simultaneously to treat one or more medical disorders

psychosocial development theory a theory that emphasizes the social nature of human development from infancy through older adulthood

referral the act of forwarding records, coordinating care, and arranging appointments with specialty healthcare services

respite refers to a short period of rest or relief, typically provided to caregivers who are responsible for the continuous care of individuals with special needs, disabilities, or chronic illnesses

role reversal a situation in which a child takes on the role of a caregiver and a parent may take on the role of a dependent

social isolation an objective physical separation from other people that causes distress

Assessments

Review Questions

1. A nurse is caring for an older adult who has recently retired from a career as a dental hygienist. The patient is exhibiting signs of sadness, loneliness, and depression. The nurse recognizes the patient is experiencing an effect of what type of developmental change?
   a. physical
   b. physiological
   c. psychosocial
   d. psychological

2. The nurse observes a patient in the long-term care facility is experiencing a reduced appetite. The patient states that food does not taste good and lacks flavor. The nurse associates these changes with what expected physiological change of older adulthood?
   a. heightened sense of smell
   b. reduced taste sensation
   c. weight loss
   d. decreased close-up vision

3. What developmental transition in older adulthood directly relates to relationships with family members and others in the community?
   a. ageism
   b. psychosocial changes
   c. physical changes
   d. dementia

4. What description provides an example of role reversal in older adulthood?
   a. an older adult providing financial assistance to a 28-year-old son
   b. a 30-year-old financial adviser providing advice to a 68-year-old couple
   c. a 26-year-old woman providing care for her 70-year-old mother who is bedridden
   d. a 30-year-old man and his family moving in with his 70-year-old mother to save money to buy a house

5. An older patient tells the nurse about her diminished sense of hearing. What should the nurse say to explain hearing changes from aging?
   a. “The eardrum begins to show damage sustained from past practices of listening to music at high volumes.”
   b. “As we age, the eardrum thickens, and the inner ear bones weaken.”
   c. “Less hormones related to hearing are produced as we age.”
   d. “Forgetting to have wax removal is a common occurrence in older adults.”

6. A nurse is caring for an older adult whose husband recently died from colon cancer. The patient is expressing concerns about her financial situation and the choices she and her husband have made over the years. She is also exhibiting signs of sadness and loneliness. The nurse knows that the patient is working through what task in Erikson’s psychosocial theory?
   a. initiative versus guilt
   b. intimacy versus guilt
   c. integrity versus despair
   d. industry versus inferiority

7. The nurse observes that a patient in the long-term care facility seems withdrawn. Several of the other staff members mention that she does not come to the dining room for meals or other activities. The nurse creates a plan to encourage the patient to join at least one meal per day and two weekly activities in the community area. The nurse uses her knowledge of what theory of aging to create a care plan for this patient?

a. disengagement theory
b. activity theory of aging
c. Erikson's psychosocial theory
d. age stratification theory

8. In what theory of aging can older adults move from one level to another depending on specific health and disease circumstances?
a. activity theory
b. Erikson's psychosocial theory
c. age stratification theory
d. Maslow's hierarchy of needs

9. In addition to the ADEA, what legislation aims to reduce the negative effects of ageism and minimize age stratification?
a. the Elder Justice Act
b. the Grandfamily Housing Act
c. the Older Americans Act
d. the Social Security Act

10. What patient profile describes the idea of role replacement as described in the disengagement theory?
a. A 70-year-old female begins playing pickleball on a league at her local gym.
b. An 80-year-old female stops participating in a weekly dance class in order to find a hobby that is more age appropriate.
c. A 90-year-old male replaces his daily walk with an exercise class at his assisted living facility during the winter months.
d. A 65-year-old male begins transporting his granddaughter to soccer practice to help reduce the driving stress for his daughter.

11. A nurse working in home health notices that one of her patients relies on walls, furniture, and counters to stabilize herself as she moves through her home. The nurse determines the patient is experiencing dizziness after starting a new blood pressure medication. The nurse knows the patient is having trouble with mobility and is at high risk for what health risk?
a. poor hydration
b. nutrition deficiency
c. falls
d. dementia

12. A patient tells the nurse that he is taking various herbal and nutritional supplements to "enhance" his health. Since the patient also takes multiple prescription medications, the nurse understands the patient is at risk for what health risk?
a. medication interactions
b. decreased mobility
c. fluid imbalance
d. fall-related injuries

13. The nurse is caring for an older adult who states she is concerned that she has dementia because she is having trouble finding words on occasion and lost her keys last week. The nurse understands the patient is showing signs of what psychological health risk?
a. depression
b. Alzheimer disease
c. delirium
d. mild cognitive impairment

14. A nurse is concerned about a patient who recently moved into an assisted living facility. The patient had to give up her pet and her home during the move. She also tells the nurse that it is now difficult for her daughter to drive her to her weekly card game. The nurse knows that in addition to loneliness and grief, the patient is also at risk for what psychological health risk?

a. caregiver strain
b. depression
c. nutritional imbalance
d. delirium

15. A hospitalized older adult patient who was previously alert and oriented is now confused about place and time. The patient also attempted to leave the hospital and had a near-miss fall. The nurse understands that this patient may be experiencing what acute disorder?

a. depression
b. loneliness
c. hopelessness
d. delirium

16. During a routine wellness checkup for a 68-year-old female, the nurse notices she has never had colon cancer screening. What is the best course of action for the nurse?

a. Tell the patient that she needs a colonoscopy immediately.
b. Focus on the fact that colon cancer screening is overdue.
c. Explain the importance of colon cancer screening and available options.
d. Make an immediate referral to a gastroenterologist.

17. A nurse performs an IADL assessment on a home care patient. The patient begins explaining the self-care activities that she is able to do independently. What is the best question to ask in relation to the IADLs?

a. What does your weekly transportation routine look like?
b. Do you need assistance with bathing?
c. Do you have any difficulty dressing yourself?
d. How frequently do you typically need to use the bathroom?

18. An emergency room nurse is assessing an older patient with suspected UTI. The daughter is present during the exam and is answering most of the questions. The patient keeps wondering where they are and requesting breakfast although it is 5 p.m. The daughter states, “my mom is usually so sharp, she never seems confused like this.” The nurse knows the patient is at risk for what health risk?

a. dementia
b. depression
c. falls
d. poor nutrition

19. A nurse in a primary care office is interviewing an older adult during a follow-up visit. The patient states that the medication prescribed for insomnia during his last visit seems to have made his headaches worse. The nurse sees that this patient has already tried several other medications for insomnia and has had chronic headaches for five years. The nurse can anticipate a referral to what specialty service?

a. neurology
b. dermatology
c. endocrinology
d. cardiology

20. The nurse is interviewing a patient being seen in an orthopedic office for follow-up on a broken wrist from a fall. The patient reports being very sleepy during the day and having difficulty getting their usual daily tasks done, but their arm is not hurting at all. The nurse discovers the patient takes the prescribed pain medication every four hours regardless of pain level, rather than as needed. What action can the nurse anticipate after

discussing the patient's symptoms with the provider?

a. stop all pain medication
b. a reduced dose of pain medication
c. recommend the patient get more sleep
d. recommend the patient have her daughter help with daily tasks

Check Your Understanding Questions

1. Discuss the concept of self-directed ageism. How can individuals be encouraged to minimize self-directed ageism?
2. List two ways nutritional changes can affect older adults.
3. Discuss the concept of grandparenting. How can social and cultural values affect the experience of grandparenting?
4. A nurse cares for a patient at a primary care clinic. The patient describes recurrent hand pain and some swelling. The patient says she has been treated with acetaminophen and prescription NSAIDs in the past, and these were not effective. She explains that her mother had arthritis, but she is not sure what type. What interdisciplinary team referrals can the nurse expect?

Reflection Questions

1. As a nurse, you care for an older adult in her home. Her daughter is also providing care each day. Both the daughter and the patient express concern regarding possible role reversal. The patient seems distressed by being treated like "a child" by her family. Her family expresses concern that she is not able to care for herself. How would you convey information about role reversal while addressing the concerns and maintaining respect for the patient and her family member?
2. According to Maslow's hierarchy of needs, what type of needs must first be met before an individual can focus on building self-esteem and confidence?
3. During a home health visit, a patient's daughter expresses concern about her ability to care for her father who has early dementia. She states she hardly has time to care for her own children, since her father requires assistance with most ADLs. What services can the nurse suggest to help the daughter cope with caregiver strain?
4. An emergency room nurse is preparing to transfer a patient to the medical floor. The patient is being admitted for congestive heart failure and has significant edema. The patient also has dementia. Although no fall was reported, the nursing assessment revealed several healing wounds and bruises. What risk factors for falls does this patient exhibit?
5. Discuss safety issues in opioid prescribing for older adults. How do state and federal opioid prescribing regulations affect older adults?

What Should the Nurse Do?

1. While the nurse is checking in a 67-year-old male for his wellness exam, the patient becomes emotional about the death of his wife. He states that he thinks about her death much of the day and says, "I still can't believe she's gone." He tells the nurse that his wife died five years ago in a car accident. What should the nurse do?
2. Dan is a 70-year-old with severe dementia who lives in a memory care facility. Dan is generally calm and follows a routine in his day. However, over the past several months, he has become more agitated with staff, especially at night and during mealtimes. In understanding sundowning and other safety issues for people with dementia, what are some restraint-free nursing interventions that may help Dan?
3. While performing an initial assessment on a 75-year-old female admitted to the emergency room after a fall, the nurse notices that the patient has dry lips and a thin appearance. The nurse notes that the patient has lost significant weight since she was last seen for a UTI three months ago. The patient says she has a hard time

staying hydrated—that her room does not have a sink and that the bathroom is a distance from her room. She also explains that it is hard for her family to help her to the bathroom frequently, so she tries to avoid drinking too much fluid. The nurse has some concerns about neglect. What should the nurse do?

4. The nurse is caring for a 65-year-old patient who had bilateral knee replacements. The patient states that his pain is terrible and that he needs more medication. The nurse checks the medication administration records and determines that it is too early to administer additional pain medication. What should the nurse do to help this patient?

Competency-Based Assessments

1. Develop a short presentation to share with colleagues on preventing ageism when working with patients. Consider action items that are practical for application in clinical practice.
2. Use the internet to research proposed state or federal congressional acts that may impact working grandparents.
3. Utilize resources from your state's Department of Public Health website to research health disparities among older adults in your state. Then, extend your analysis by comparing your state's data with neighboring states and other regions across the country. How do states differ in their approach to minimizing health disparities in the older adult population?

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CHAPTER 42

Caring for Patients with Disability and Chronic Illness

FIGURE 42.1 Disability and chronic conditions can impact an individual's quality of life. Special healthcare considerations should be taken to ensure all the patient's needs are addressed, such as by providing guidance on using a piece of equipment in the workplace. (modification of "Sgt. Joshua Elliott uses a Primus RS machine during physical therapy" by Official U.S. Navy Page/flickr, Public Domain)

CHAPTER OUTLINE

42.1 Characteristics of Disability

42.2 Healthcare Approach to Disability

42.3 Chronic Disease and Chronic Illness

42.4 Healthcare Approach to Chronic Conditions

INTRODUCTION Disabilities may be acute or chronic, lasting a few months to a lifetime. Nurses encounter individuals with a wide range of disabilities that encompass physical, cognitive, and emotional impairments. Disability is a physical or cognitive impairment that limits an individual's ability to interact in expected ways in their environment (CDC, 2020a). Nurses must exhibit confidence, competence, and respect in caring for these individuals. Specific cultural attitudes and legal parameters regarding disabilities guide nurses in making informed

and individualized decisions in caring for individuals with disabilities. The nurse's role in providing care involves creating an accurate view of different aspects of disability and incorporating these ideas into compassionate and individualized care plans. Nurses must understand disability from various viewpoints to provide comprehensive care. By incorporating social, personal, emotional, physical, cognitive, and community care, nurses empower each individual to reach their maximum capacity for health and wellness. Because some disabilities are present for an individual's life span, nurses must incorporate coping strategies to address challenges that arise and change over a lifetime.

Chronic disease and illness are widespread. With ever-changing and improving healthcare treatment and care, people in the United States live longer overall. Because the average adult life span is longer, many individuals live longer with chronic illnesses or conditions such as heart disease, diabetes, and cancer (Kochanek et al., 2022). Nurses play a crucial role in the support of individuals with chronic disease. From education regarding medications and coping skills for managing new diagnoses to social considerations for managing a chronic disease and family interactions in the face of illness, nurses empower individuals to live a life of wellness in the face of disease. Understanding the pathophysiology of disease states is important, but the nurse's ability to comprehend the human response to chronic disease and illness is also important in providing patient-centered care. This will vary from person to person, so nurses can offer critical knowledge and compassion in caring for these individuals. Although the incidence of chronic disease increases with age, some diseases begin in childhood and are lifelong, requiring the nurse to understand the concepts of disease in relation to life stage and development.

Nurses face unique and evolving situations with multiple chronic diseases in caring for many individuals simultaneously and over many years. Nurses must be equipped to address the emotional toll of chronic disease as well as its impacts on family and other social structures. Nurses must be prepared to navigate detailed and complex discussions with patients while controlling their emotions.

42.1 Characteristics of Disability

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the definitions of a disability
- Recognize the prevalence of disability
- Describe different categories and types of disability

Understanding the complexities of disability helps nurses care for specific individuals with single or multiple disabilities. Nurses must know how a physical, cognitive, or social impairment affects an individual, their interactions with others, and the appropriate level of care required. Nurses also must understand the prevalence of disability to create a culture of acceptance and inclusion for individuals with disabilities. Definitions of disability guide federal regulations and societal participation. The interplay between different types of disability is also vital in creating an individualized care plan.

Definitions of Disability

A mental or physical condition that limits an individual's ability to engage in daily activities in a typical way is called a **disability** and affects individuals, interpersonal relationships, families, and communities. Nurses must recognize specific impairments and know how to respond to individuals with these impairments. Care planning maximizes the quality of life for individuals navigating an impairment, whether mental, physical, cognitive, or developmental. The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) define a disability as a restriction of an individual's ability to perform specific physical or cognitive activities in their environment within the expected range for individuals of their same demographic group (CDC, 2020a).

Impairment

An **impairment** occurs when the loss of one's physical or mental ability inhibits usual or expected functioning, such as vision loss, limb immobility, and memory loss. By this definition, an impairment may lead to a disability. Disability and impairment are closely related, with an impairment typically causing or resulting in a functional disability. The Americans with Disabilities Act (ADA) and the CDC further add that disability from physical or mental impairment limits at least one significant life activity and creates participation restrictions by limiting specific interactions with one's environment and community (ADA National Network, 2024).

A **structural impairment** describes problems with an external or internal part of the body, whereas **functional impairment** describes restrictions or difficulties in the ability to perform activities effectively due to the loss of functioning in a body part. For example, structural impairments may include hearing damage, congenital blindness, or limb amputation, causing a patient to face hearing, seeing, or mobility challenges. Functional impairments may result from conditions such as chronic pain associated with arthritis or cognitive decline related to progressive disorders such as dementia, causing a patient to be unable to perform self-care or properly manage finances.

Societal Participation

Based on the International Classification of Functioning, Disability, and Health (ICF), individual activity level and social participation relate to specific functional abilities (CDC, n.d.). Activity level and societal involvement exist on a continuum. By understanding these concepts, nurses can identify barriers for individuals with specific disabilities and provide care plans and advocacy to improve care, quality of life, and overall community functioning. An individual's **activity level** refers to their ability to perform specific actions, including:

- achieving transportation throughout the community
- applying newly learned information
- changing body positions
- managing home-care tasks
- managing self-care tasks
- moving independently within their home
- moving items within their environment
- performing activities of daily living (ADLs)
- using mobility assistance devices

An individual's **participation level** often refers to their ability to function in the wider community and participate in activities and social roles such as:

- engaging in community events and activities
- engaging in social activities
- family care (e.g., cooking, cleaning, transportation)
- life roles (e.g., parenting)
- maintaining or obtaining employment
- managing finances
- seeking education (e.g., going to school, personal learning)

Because individuals with disabilities often encounter barriers, **accommodations** (adjustments and modifications in the physical environment to meet the needs of individuals with disabilities) are often necessary. These accommodations may include providing interpreters, modifying or adjusting a job or job site, providing headphones or other accessible technology to reduce challenges and allow individuals with disabilities to perform personal actions, maintaining independence, and engaging in the community and society effectively (CDC, 2020b).

Studies show that individuals experience many challenges associated with societal participation regardless of the type of disability (Kim & Namkung, 2023). Barriers may be socioeconomic or related to social policy and can affect the overall health and social inclusion of individuals with disabilities. Barriers can be seen in the accessibility of buildings, access to health care, social engagement, and **discrimination** (actions or beliefs that show an unjust distinction between people on the grounds of sex, age, ethnicity, or disability) behaviors of others (Kim et al., 2023). If an individual with a disability is restricted from entering a public university event because modifications are not in place to accommodate their disability, this is an example of discrimination. Although these barriers can lead to a sense of isolation, nurses can advocate for healthy interactions and appropriate accommodations to reduce barriers for those with disabilities (Kim et al., 2023). External support is crucial, and this is where nurses can work to empower individuals and community members to create an atmosphere of inclusion and acceptance (Figure 42.2). Nurses can empower individuals to seek out opportunities for social engagement. By embracing their disability, individuals can seize opportunities to enlighten others about their diverse spectrum of abilities and share their unique experiences in navigating daily life with these distinctive attributes.

FIGURE 42.2 A community group gathers together to celebrate and bring awareness about disabilities and rehabilitation. (modification of "06659jf39th National Disability Prevention and Rehabilitation Week Celebrationfvf" by "Judgefloro"/Wikimedia Commons, CC0 1.0 PD)

Prevalence of Disability

The prevalence of disability among U.S. adults is high, with up to one-fourth of the population experiencing some physical, cognitive, functional, or sensory disability (CDC, 2021). The most common disabilities are related to impairments in mobility (1 in 7) from disease states such as multiple sclerosis (MS), arthritis, or cerebral palsy and impairments in cognition (1 in 10) from disorders such as dementia, autism spectrum disorder (ASD), and brain injury (CDC, 2016). This proportion is higher in rural communities, with up to one-third of these populations experiencing disability, particularly multiple disabilities (CDC, 2021). People living in rural settings may also lack support services, have limited healthcare access, and experience barriers related to long-distance transportation. In adults older than 65 years, the incidence of disability increases to nearly 40 percent in the general population (CDC, 2020). The CDC also reports that in adults, disability is more prevalent in women, older adults, and those of low socioeconomic status (CDC, 2020). Interestingly, despite a higher rate of disability, older adults may have increased access to support services and healthcare programs compared with younger adults, due to federally funded insurance programs.

Statistics show that 17 percent of children from toddlers to teens (aged 3-17 years) live with a disability, an many live with more than one condition (CDC, 2021; Health.gov, 2020). These disabilities encompass all types of impairments; however, there has been a shift in prevalence from physical conditions to developmental and behavioral disabilities (Health.gov, 2020). Some recent reports suggest that nearly one-fourth of teens struggle with a mental, emotional, developmental, or behavioral disability that affects their daily lives (Cornell University, 2018).

Multiple Disabilities

It is not uncommon for individuals to experience multiple disabilities simultaneously. Structural and functional impairments are often interrelated and create a wide range of disabilities; for example, a physical impairment associated with cerebral palsy may lead to a difficulty accessing buildings with stairs (Table 42.1). These may include sensory, mobility, self-care, and cognitive disability. Having multiple disabilities can affect individual activity levels as well as societal participation on many levels. Individuals may have difficulty performing day-to-day functions as well as accessing learning, employment, and healthcare opportunities in the community. Although disability does not equate to poor health, the CDC reports that individuals with disabilities have significantly higher rates of chronic illness as well (CDC, 2023). Specifically, individuals reporting at least one disability also have higher rates of depression, obesity, diabetes, and heart disease (CDC, 2023). Multiple disabilities can accumulate over time due to aging, injuries, or disease progression. Individuals may also have a simultaneous disability from a young age. These disabilities are typically related to conditions such as cerebral palsy, developmental delays, genetic disorders, intellectual disability, sensory impairments, and ASD.

Impairment	Possible Resulting Disability
An individual is deaf or has a significant hearing impairment	• Cognitive • Self-care • Sensory
An individual is blind, legally blind, or has a significant vision impairment	• Mobility • Self-care • Sensory • Transportation
A person has trouble concentrating, remembering, and making decisions, because of a mental condition	• Cognitive • Independent living • Self-care
A person struggles walking up and down stairs, maneuvering with an assistive device, has frequent falls related to physical weakness	• Independent living • Mobility • Self-care

TABLE 42.1 **Impairments and Disability**

Federal Legislation

Federal laws, legislation, and rules are in place nationally and in most states in the United States to protect and provide an atmosphere of inclusion for individuals with disabilities. These laws protect the rights of individuals with disabilities to receive equal opportunities for services, employment, transportation, education, and health care. Sections of the **Americans with Disabilities Act (ADA)**, initially signed in 1990, protect the rights of individuals with disabilities and prescribe requirements for appropriate accommodations. These accommodations are seen throughout the community in stores, hotels, schools, movie theaters, doctors' offices, and homeless shelters (U.S. Department of Justice, 2020). Federal legislation also mandates appropriate accommodations for communication through telecommunications relay services for those with hearing and speech disabilities. The ADA requires employers, schools, and places of business to provide accommodations such as:

- entrance for service animals
- furniture spacing
- interpreters
- ramps
- restroom modifications
- schedule flexibility
- screen reading and computer software
- video phones

In addition, multiple acts of legislation have been passed to ensure accommodations for voting access for individuals with disabilities, including assistance with filling out forms, accessing voting sites, and accessing electronic voting options. The **Individuals with Disabilities Education Act (IDEA)**, enacted in 1975, requires that all children with disabilities receive appropriate and free education through the public education system. The regulations require special education and outline guidelines for creating individualized education plans (IEPs) for children with disabilities.

LINK TO LEARNING

IDEA requires that all children with disabilities receive an IEP as part of their inclusion in public school. This site details the school nurse's role (https://openstax.org/r/77SchoolNurse) in creating an IEP.

Categories and Types of Disability

Although not all individuals experience disability in the same way, recognizing specific categories of disability will help nurses anticipate possible barriers and better address the environment to accommodate specific impairments. The ADA regulations cover many disabilities and impairments caused by chronic or progressive conditions. Disabilities covered include sensory impairment, mobility impairment, intellectual disabilities, developmental disabilities, and cognitive disabilities. The ADA also includes specific medical conditions that may cause specific impairments as well as cancer, diabetes, post-traumatic stress disorder (PTSD), human immunodeficiency virus (HIV), autism spectrum disorder, epilepsy, and depression, among other conditions and illnesses.

Disabilities may be acquired throughout life, or an individual may be born with impairments that lead to disability. Depending on the underlying condition or cause, individuals may have one or multiple impairments contributing to disability.

LINK TO LEARNING

Individuals with various disabilities struggle with digital accessibility, which creates significant barriers to communication and overall accessibility to information. The information at this link addresses these difficulties (https://openstax.org/r/77DigitalAccess) and helps nurses adjust communication and education techniques.

Sensory Disability

A **sensory impairment** includes any difficulty an individual has with one of their five senses. In contrast, **sensory disability** encompasses a broader range of limitations related to sensory processing and integration, affecting not only the reception but also the interpretation and response to sensory stimuli, potentially affecting various aspects of daily functioning. When an individual experiences loss of a sensory function, such as vision, the way they interact with the environment is affected. For example, when individuals gradually lose their vision, their reliance on other senses to receive information from the environment is often enhanced. Approximately one-half of individuals aged 75 years of older have hearing loss (NIDCD, 2024). Good hearing depends on a series of events that change sound waves in the air into electrical signals. The auditory nerve conducts these electrical signals from the ear to the brain through a series of steps. Age-related hearing loss (**presbycusis**) gradually occurs in most individuals as they age (Cheslock & De Jesus, 2023). Typically, low-pitched sounds are easiest to hear, but it often becomes increasingly difficult to hear normal conversation, especially over loud background noise. Hearing aids are commonly used to enhance hearing.

Vision impairment is also a common sensory impairment that can lead to disability. Specific impairments or vision disorders that affect vision include macular degeneration, cataracts, glaucoma, diabetic retinopathy, and **presbyopia** (loss of near vision).

Kinesthetic impairments, such as peripheral neuropathy, affect the ability to feel sensations. Symptoms of peripheral neuropathy include pain, burning, tingling, and numbness in the extremities that decrease a person's ability to feel touch, pressure, and vibration. Position sense can also be affected, making it challenging to coordinate complex movements, such as walking, fastening buttons, or maintaining balance when one's eyes are closed. Peripheral neuropathy is caused by nerve damage that commonly occurs in patients with diabetes mellitus or peripheral vascular disease. Physical injuries, infections, autoimmune diseases, vitamin deficiencies, kidney diseases, liver diseases, and some medications can also cause peripheral neuropathy.

Sensory impairments become disabilities when these impairments result in challenges and barriers to independence. Depending on the severity of the impairment, sensory disabilities require accommodations to assist individuals to function in their homes and the broader social environment. Individuals with sensory impairments are

at increased risk for falls and injury, so it is essential to encourage basic safety features in the environment, including adequate lighting, availability of handrails and grab bars, hazard-free walkways, and appropriate settings on water heater controls.

PATIENT CONVERSATIONS

Vision Impairment

Scenario: Joanna is an 81-year-old patient who lives next door to her daughter's family. She lives independently, continues to drive, and does her own grocery shopping, housework, and yard work. She presents to her primary care provider's office to discuss concerns about worsening eyesight. After the nurse, Summer, takes her vital signs, Joanna states she is worried that her family is going to take away her driver's license.

Nurse: Tell me why your family is worried about you driving.

Patient: I was diagnosed with macular degeneration a few years ago, but I'm starting to notice more trouble with my vision. I am mainly worried about not being able to get to my activities because my daughter is so busy shuttling her children to activities. I'm so used to being independent, but I don't want to get in an accident. I did hit our mailbox with my car a few weeks ago, pulling into the driveway.

Nurse: It sounds like you may also be worried about your driving ability, but you don't want to lose your independence, is that right?

Patient: Yes, exactly. I take my vitamins and eat healthy, but my eye doctor says this is not curable. I'm wondering what else I can do.

Nurse: Our community has an excellent public transportation system, and buses are small and have grab bars for getting on and off. Let's look at the map to see if it follows routes that would be helpful for you. Also, did you know that the community senior center offers a rideshare program?

Patient: I'm not sure I'll be able to afford the bus passes, but I'm interested in the rideshare program.

Nurse: Based on your vision impairment, the provider may be able to help with paperwork to get you discounted access to public transportation. I will start the paperwork and get you the rideshare contact information.

Patient: Thank you for your help. This helps me feel less afraid. It's hard enough to lose my vision slowly, but losing all my independence is just as hard.

Physical Disability

A **physical disability** refers to any condition that limits a person's physical functioning or mobility. Physical challenges commonly affect an individual's mobility, often stemming from impairments in their legs, arms, or fingers. According to the CDC (2020b), mobility disabilities are the most reported disability in adults. Physical disabilities are five times as common in adults with low socioeconomic status than in those with higher incomes (CDC, 2020b). These impairments and resulting disabilities may be short or long term and may be temporary or permanent. Because movement is impaired to some degree, these individuals struggle with walking, navigating stairs, reaching, lifting, carrying, and gripping.

LINK TO LEARNING

Learn more here about how you can assist your patients with mobility disabilities (https://openstax.org/r/77mobilitydisab) to obtain a disability parking permit, including where to find applications and state-specific eligibility criteria.

Permanent mobility impairments may be static or progressive but do not improve over time. Nursing care for these permanent disabilities focuses on the management of associated disease factors, achieving the highest possible quality of life, and managing complications associated with physical impairment. Injuries, disorders, and diseases that may lead to physical disability include arthritis paralysis, amputation, spinal injury, muscular dystrophy (MD),

MS, cerebral palsy, and traumatic brain injury (TBI).

CLINICAL SAFETY AND PROCEDURES (QSEN)

Quality and Safety Education for Nurses (QSEN) Competency: Teamwork and Collaboration

Definition: Function effectively in an interdisciplinary team, focusing on appropriate communication and individualized patient care.

Knowledge: Nurses must collaborate with a team of other providers when providing care for individuals with physical disabilities. Team members will depend on individual patient circumstances. This may include collaboration for individuals with acquired physical disability, disease-related progressive disability, or congenital physical impairments. A team approach will enhance patient care options and strengthen relationships with specialized providers such as physical, occupational, speech, and psychological therapists.

Skill: Nurses can be alert for signs of progressive physical impairment, new barriers to mobility, and challenges in coping with physical disability. The nurse can show leadership by advocating for additional therapies, updated mobility assistance devices, and mental health support. The nurse focuses first on the patient's needs and desires. Incorporating patient input empowers patients with a physical disability with autonomy and independence.

Attitude: Effective and positive communication techniques enhance the relationship between the healthcare provider, patient, and nurse, creating an atmosphere of collaborative support.

Developmental Disability

A **developmental disability** (a condition due to an impairment in learning, language, behavior, or physical function) are often **congenital** (a condition present at birth) or develop during childhood and may be related to impairments from specific disorders such as ASD, cerebral palsy, Down syndrome, fetal alcohol syndrome and spina bifida. Developmental disabilities may also result from genetic disorders that are not known until later in childhood, brain injury, and intellectual differences. Developmental disabilities are those impairments that affect an individual's ability to develop along a standard childhood timeline. These disabilities may make it difficult for them to learn, grow, and progress intellectually at expected rates. The CDC reports that one in six children has a developmental disability (CDC, 2021). Developmental disabilities may be related to fetal injury or infections during a mother's pregnancy, to chromosomal conditions, or birth complications. Developmental impairments may also be associated with disorders such as attention-deficit/hyperactivity disorder (ADHD), attention-deficit disorder (ADD), hearing and vision problems, and learning difficulties.

Autism spectrum disorder is both a developmental and neurological disorder (NIMH, 2024). The CDC recognized ASD as affecting social functioning, communication, and maintaining appropriate behavior (CDC 2024a). The condition has many variations in symptoms and severity. Autism spectrum disorder can be difficult to identify through physical attributes, and the severity of ASD varies widely between individuals. The CDC states that ASD symptoms typically begin before the age of 3 years; however, they may not be noticed or identified until much later, even into adulthood (CDC, 2024a). Some individuals live and function independently, whereas others may need constant support. Common comorbid disorders include depression, anxiety, ADHD, and learning differences.

REAL RN STORIES

Autism Spectrum Disorder

Nurse: Cora, RN
Clinical setting: Behavioral health
Years in practice: 20
Facility location: Milwaukee, Wisconsin

I've worked as a behavioral health nurse in an outpatient behavioral health center for 15 years. I work with children, teens, adults, and families struggling with behavioral and mental health issues. In recent years, the number of

individuals with ASD has significantly increased. One of the most interesting changes I've noticed is the reaction and response of individuals who are diagnosed with ASD in adulthood. Many of these individuals have a less severe form of ASD, where they do not have intellectual or communication impairments. However, this does not mean they do not have trouble communicating.

I recall a 53-year-old woman named Jayda who first came to our clinic with concerns about anxiety. She reported difficulty maintaining relationships, working, and interacting with others in social situations. She often felt awkward and socially different. Upon further discussion, she reported a history of sensitivity to light, such as in stores with fluorescent lights, and sensitivity to loud noises and rapidly changing volume. She also reported difficulty with flexibility in performing job functions and tasks of daily life. She liked a particular routine and felt extreme agitation when things did not go as expected. After seeing the neuropsychologist at our office, she was diagnosed with ASD. During her subsequent visits, Jayda expressed her relief in understanding her differences. She felt empowered to take classes as a transcriptionist and started her own home-based transcription business. She was able to work with therapists in our clinic to improve her coping skills, which allowed her to seek social connections and eventually get married. By understanding her disorder and feeling heard by her healthcare team, she overcame her anxiety and found success.

Cognitive Disability

A **cognitive disability** refers to a condition in which a person has limitations in cognitive functioning and adaptive behavior stemming from disorders in brain functioning. Disorders that can cause cognitive disability include TBI, stroke, or dementia. In the case of dementia, cognitive disability is progressive and causes greater difficulty for the individual, caregivers, and family over time. Nursing care focuses on maintaining safety, autonomy, and quality of life. Acute damage to the brain, such as stroke or TBI, causes variable levels of disability depending on the severity of the injury and the part of the brain affected. Due to the complexities of brain functioning, damage to the brain and cognitive disability may also be associated with sensory and physical disabilities.

LINK TO LEARNING

Learn more about caring for older patients (https://openstax.org/r/77careforelders) with cognitive impairment.

Intellectual Disability

An **intellectual disability** is a neurodevelopmental condition characterized by significant limitations in intellectual functioning and adaptive behavior, which manifest during the developmental period. These limitations affect areas such as reasoning, problem-solving, communication, and social skills, affecting an individual's ability to effectively navigate daily life and engage in age-appropriate activities. Intellectual disabilities share some commonalities with cognitive, developmental, and psychiatric disabilities. Intellectual disabilities are a type of developmental disability that affects cognitive rather than physical abilities. Intellectual disabilities such as ADHD, dyslexia, and other learning differences may affect one's behavior, ability to learn on an expected timeline, and function as expected in social situations. Intellectual disabilities may arise from congenital and genetic disorders such as Down syndrome, birth trauma, prenatal infections, or even infections in the neonatal period. Intellectual disabilities often become more apparent as the child ages.

Psychiatric Disability

A **psychiatric disability** refers to a condition characterized by mental health challenges or disorders that significantly impact an individual's cognitive, emotional, or behavioral functioning, leading to difficulties in daily life and social interactions. Some mental health disorders may coexist with cognitive disorders, such as ASD, dementia, and brain injuries. Not all mental health disorders are disabilities. When mental health disorders begin to disrupt daily functioning at home, work, and in the community, disability may result. Examples of mental health disorders that can progress to a state of disability include eating disorders, PTSD, anxiety, depression, bipolar disorder, schizophrenia, obsessive compulsive disorders, and phobias.

Nurses must understand that psychiatric disabilities may have varying causes. For example, individuals may experience PTSD and anxiety related to childhood trauma, a car accident, or exposure to war. Triggers for these types of disabilities are highly dependent on each response. Two individuals experiencing the same traumatic event

may have vastly different responses; one person may develop disabling PTSD and anxiety, and the other may not. Substance abuse disorders may also trigger short-term or long-term disability in individuals, based on the severity of the substance use disorder and the presence of other mental health disorders.

Psychiatric disabilities may affect how individuals interact in school, the workplace, or social situations. They may affect sleep and cause a variety of other symptoms, such as agitation, trouble concentrating, suicidal ideation, and appetite changes. A mental health disorder becomes a disability when someone is unable to manage the symptoms of the disorder to maintain normal daily function.

Acquired Disability

An **acquired disability** refers to physical, cognitive, sensory, or psychological impairments that occurs after birth, typically as a result of injury, illness, or environmental factors. Unlike congenital disabilities, which are present at birth, acquired disabilities develop later in life and can be caused by various factors such as accidents, trauma, infections, chronic health conditions, or degenerative diseases. These disabilities may vary in severity and can have significant impacts on an individual's functioning, independence, and quality of life. In injury-related disability, individuals experience a significant and often sudden change in functional ability. Examples of diseases and injuries that may result in acquired disabilities include head trauma, brain tumors, eye damage, ear damage, MS, stroke, amputation, musculoskeletal injury, emotional trauma, and severe infection.

Acquired disabilities may pose different physical and emotional challenges for individuals due to the significant change in their ability to function. These changes and perceived loss of function can result in a grief response. For individuals with progressive diseases, this can be an ongoing struggle to cope with declining function. Nurses not only must take care to address the functional aspect of an acquired disability but also the emotional impact the experience of loss has on an individual.

42.2 Healthcare Approach to Disability

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze different models of disability used in health care
- Identify barriers to health care for patients with a disability
- Explain how to ensure quality health care for people with a disability

Models of disability define disability in the context of healthcare access, social engagement, and interpersonal interaction. These models explain the effects of impairments, barriers, social stereotypes (widely held and oversimplified beliefs or ideas about a particular group of people or things), and environmental structures on an individual’s access to health care. Understanding these models helps nurses ensure provision of quality health care through patient-centered and individualized care. A nurse’s role in preventing discrimination is crucial in providing quality health care for individuals with disabilities. Identifying and reducing these barriers is a key action for nurses. These barriers may be encountered at any point during healthcare delivery and may fluctuate depending on each individual’s needs and desires for their care. Nurses are essential in identifying ways to promote wellness for all individuals regardless of their disability status. Nurses serve as advocates for these patients and play an essential role in maintaining patients' autonomy in the presence of a disability.

Models of Disability

Models of disability explain the social, emotional, and physical aspects of disability. These models explain how individuals with disabilities interact in social situations, how they cope with a disability, and how disability affects their quality of life. Models of disability also provide insight into how individuals without disability view disability, explain how a stereotype is formed, and explain social programs and regulations in place to safeguard individuals with disability. For nurses, models of disability can improve overall patient care for individuals with disabilities by framing the social, physical, and emotional challenges that these individuals face. By confronting stereotypes and social **stigma** (a negative attitude or incorrect belief toward a certain group of people) of disability, nurses empower their community to embrace individuals with differences and provide compassionate, inclusive care. Each model offers relevant ideas to help nurses, the public, and families understand the experience of and provide support for individuals with disabilities.

Moral Model

The **moral model of disability** is a long-standing belief pattern that explains disability as a defect in functioning related to the individual's moral character. Traditionally, this model described individuals with a disability as weak and often having brought about the disability through some negative action or inherent weakness in their character. Although this model does not represent the current social acceptance of disability, some core aspects persevere in specific cultures and general society. Stigma related to obesity, drug addiction, and type 2 diabetes are examples of lingering beliefs in the moral model. For example, an individual in **recovery** who is receiving addiction treatment and remaining drug-free is covered under the ADA employment and disability benefits, but an individual who continues to use drugs or relapses into drug use after recovery is not (ADA National Network, 2024b). Overall, the moral model does not uphold inclusion, equality, or individual rights but rather blames the individual for disability and promotes stigma and negative social attitudes toward disability. By recognizing this model and associated stigma, nurses can better advocate for individuals with a disability.

CULTURAL CONTEXT

Ableism

The concept of **ableism** explains the adverse reactions that individuals without a disability have in response to encountering individuals with a disability. Unfortunately, these interactions can be negative, particularly if the able individual holds negative stereotypes toward those with disabilities. These stereotypes are often promoted through social conditioning and social norms, personality and educational factors, and negative moral beliefs about disability. Factors that contribute to ableism include the idea that disability must be cured and that disability is inferior to ability. Ableism may look like (Dunn, 2021):

- anxiety during encounters with individuals with a disability
- belief that individuals or their families are to blame for their disability
- concern over perceived contagiousness
- fear of disability or death
- misunderstanding the type or severity of disability
- negative attitudes toward individuals with disability

In addition to these behaviors, ableist language perpetuates negative perceptions of disability. Examples of ableist language include (Examples of ableist..., 2023):

- Using outdated terms like "handicap" or "handicapped" instead of current, respectful terms like "disability" or "disabled," which can emphasize disadvantage and lack of agency.
- Describing people as "able-bodied," which can imply that those with disabilities lack "able bodies" or lead less fulfilling lives; terms like "non-disabled" or "people without disabilities" are preferred.
- Using the phrase "suffers from" to describe a disability, which equates having a disability with a life of suffering; it is more accurate and respectful to say someone "has" a condition (e.g., "has diabetes").
- Using "crazy" or "insane" to describe something undesirable or irrational, which can perpetuate negative stereotypes about mental health conditions.
- Focusing on limitations when discussing disabilities, such as saying someone "can't see/hear/talk," which highlights what a person is not able to do; instead, discuss disabilities neutrally and emphasize strengths when relevant.
- Using euphemisms like "special needs" or "physically challenged," which can be patronizing; addressing disabilities directly (e.g., "a child with Down syndrome") is more respectful and straightforward.

Although nurses cannot simply change cultural, social, or personal beliefs, they can strive to recognize ableism in their belief patterns and strive to provide inclusive and compassionate care that is free from the effects of ableism.

Medical Model

The **medical model of disability** explains disability as a consequence of a trauma, illness, or congenital health condition that is out of the control of the individual. The medical model views disability as a problem stemming from a disorder within a body system (UCSF, n.d.). This disorder causes the individual to have physical or cognitive

abilities outside the established norm for age, gender, and demographic group. Medical diagnoses often guide the intervention and treatment processes in the medical model rather than focus on the individual's lived experience of disability. Therefore, interventions based on the medical model focus on identifying the cause of the disability, treating this cause, preventing complications, and, in some cases, curing the disability. The medical model also assumes that individuals with disabilities (Association of University Centers on Disabilities, n.d.):

- compare their functional level with that of others
- have problems associated with their disability
- must learn to cope with physical and cognitive differences
- must rely on experts for treatment and health
- need help and support from others

Although the medical model does have merits in working toward treating and curing disability to help individuals integrate into society, there is also a high potential for the creation of a stigma by assuming there is something wrong with individuals with a disability and that the disability needs to be fixed. Individuals with disability, particularly those with long-standing or congenital disability, may not see themselves as having a problem; rather, they accept their cognitive and physical functions for what they are and learn to move through life in a way that is normal for them. Consider an individual born with deafness. The medical model will try to apply assistive devices and create a hearing pattern closest to what is considered normal. However, individuals with deafness may not see treatment or cure as a path. They may accept their hearing impairment and use accommodations and specialized language to interact in society.

Functional Model

The **functional model of disability** is closely related to the medical model and assumes a cause-and-effect relationship between a physical or cognitive deficit and limitations in daily function. The functional model of disability emphasizes the interaction between individuals and their environment, focusing on removing barriers and accommodating diverse abilities to promote equal participation and access. It considers disability as a social construct shaped by environmental factors, rather than solely focusing on individual impairments. The functional model focuses more heavily on the impairment caused by an underlying medical disease or condition and the way this impairment affects an individual ability to perform necessary daily functions. In contrast to the medical model, in which the medical condition itself is the focus of treatment, interventions, and support, the functional model focuses on impairments experienced by the individual, such as (UCSF, n.d.):

- difficulty with self-care activities
- impaired decision-making skills
- impaired mobility
- inability to live independently
- inability to work or produce income

Rehabilitation Model

The **rehabilitation model of disability**, sometimes referred to as the functional limitations model, conceptualizes disability as a single impairment or a collection of impairments or deficits experienced by an individual that can be improved through rehabilitation. In this model, **rehabilitation**, or returning to a previous state of health, assumes that a disability can be cured or treated to bring an individual back to better health. This model focuses on restoring function and maximizing independence through medical interventions, therapies, and assistive devices. It views disability as a result of impairments that can be mitigated or managed through rehabilitation efforts. The goal of this model is to enable individuals to adapt to their impairments, learn new skills, and maximize their participation in various aspects of life. The rehabilitation model operates under the assumption that individuals have previously experienced little to no impairment. However, this premise may not be true for individuals with congenital impairments or progressive diseases leading to disability. This model also relies on the idea that specialized rehabilitation caregivers and specialists are necessary for the treatment and care of patients with disability. It may apply, however, to some individuals with acquired disability or impairments that are expected to improve over time, for example, in some instances of TBI, musculoskeletal injuries, and stroke.

Social Model

The **social model of disability** focuses on disability in the context of the individual's physical and social

environment rather than on an individual bodily impairment. The social model explains limitations and difficulties experienced by individuals with disabilities due to environmental, social, and community factors (Association of University Centers on Disabilities, n.d.). In the social model of disability, the individual's physical condition is considered an impairment and becomes a disability when physical and social environments create barriers to functional life. Consider an individual with MS who uses a wheelchair and is attempting to enter a restaurant with a stairway at the entrance. In the social model, disability is viewed only because no alternate access (e.g., a ramp) is available, in contrast to a medical model view, which explains the disability in terms of the physical impairment of the individual causing the inability to climb the stairs. Although disabilities are seen as individual impairments in the medical and functional models, the social model views disabilities in a more generalized sense. This way, accommodations to buildings, educational platforms, schools, hospitals, and other public spaces can be equipped with accommodations that will benefit many people who struggle with similar barriers regardless of their specific disability.

Biopsychosocial Model

The **biopsychosocial model of disability** views impairments as the interplay between medical diagnoses and associated impairments and societal barriers. This model combines ideas and concepts from the medical and social models of disability. In this framework, medical diagnoses associated with impairments are considered in conjunction with societal barriers that individuals with these impairments face. By incorporating both concepts, the biopsychosocial model creates a more comprehensive view of disability as experienced by the individual and within society. This theory was first proposed by George Engle in 1980 and is currently used as the framework for the WHO ICF (Petasis, 2019). By addressing the specific impairments of each individual and incorporating techniques to reduce societal barriers, individuals with a disability can experience more inclusion, fewer obstacles, and limited discrimination on a community level. The ICF model considers similar concepts as the biopsychosocial model, including (CDC, n.d):

- ability of individuals to participate in society
- activity limitations
- beliefs and attitudes about impairment (psychosocial)
- environmental factors that are obstacles to individuals with disabilities (social)
- impairments in body function and structure (biological)

Barriers to Health Care

Depending on the type and severity of disability, individuals experience a range of barriers in seeking appropriate health care. Physical barriers, such as doorway width, counter height, unstable flooring, noise level, and text size, are common but may be unseen by an individual without a disability. Nurses can be perceptive in identifying possible physical barriers and eliminating these before people with disabilities encounter them. Additional barriers are related to stereotypes, negative attitudes, and intentional or unintentional discrimination. Although active discrimination is unlawful, more subtle stereotyping, prejudice, and negative interaction are encountered on an individual basis. Nurses or other healthcare professionals sometimes may not even recognize their own prejudice. Biases among healthcare professionals that may affect those with disabilities include

- lack of adjustable equipment (e.g., not having equipment that can be adjusted or modified to accommodate the specific needs of patients with disabilities, such as adjustable examination tables or chairs for patients who use wheelchairs or have mobility limitations)
- lack of staff to assist with accessing programs (e.g., healthcare facilities may offer various programs, services, or educational resources that could benefit patients with disabilities; however, if there is a lack of staff trained to assist individuals with disabilities in accessing and participating in these programs, patients may miss out on important opportunities for health promotion, education, or support)
- lack of staff to assist with mobility (e.g., patients may require help getting onto examination tables, navigating hallways, or using restroom facilities; when healthcare facilities do not have adequate staff trained to assist with these mobility needs, patients may experience delays in care or be unable to access necessary services)
- scheduling inflexibility (e.g., scheduling can be problematic for individuals who require additional time for appointments, due to mobility issues, transportation constraints, or medical needs; without flexible scheduling options, patients may face barriers in accessing timely healthcare services)
- use of inaccessible health education techniques (e.g., assuming all individuals can participate in hands-on

demonstrations or activities without considering how these may exclude individuals with physical disabilities; not integrating assistive technologies, such as screen readers or captioning services, into digital health-education materials for individuals with hearing impairments)
- use of **medical jargon** (technical, medical language) (e.g., medical terminology or complex language may be difficult for individuals with intellectual disabilities or cognitive impairments to understand)
- use of written educational information (e.g., relying on printed materials or presentations without providing accessible alternatives such as large print, Braille, or audio formats for individuals with visual impairments)

LINK TO LEARNING

Increase your awareness of stereotype threats (https://openstax.org/r/77Stereotypes) in health care.

Structural Barriers to Accessibility

Structural barriers to health care depend on rural versus urban settings, transportation options, and building layout. Specific structural barriers in and around healthcare facilities include narrow doorways, manual doors, high countertops, elevated exam tables, lack of bathroom grab bars, street curbs, stairways, and lack of public transportation. Structural barriers compound other limitations in healthcare access. These are often the last barriers encountered after an individual has overcome stereotypes and secured an available location to acquire healthcare services.

PATIENT CONVERSATIONS

ADA Compliant Barriers

Scenario: Zia is a 37-year-old patient who has recently moved to Wyoming with her family and is presenting as a new patient to a primary care clinic. She requires a wheelchair for mobility since a spinal cord injury 20 years ago left her without the use of her legs. She gives feedback on the functional barriers she encounters in the healthcare facility. Upon her arrival, the patient requested to use the bathroom to empty her indwelling urinary catheter bag. She was directed to the restroom and then into the exam room.

Nurse: Hi Zia, I'm Stephanie. I'll be checking you in and getting your vital signs today.

Patient: Nice to meet you, too.

Nurse: Do you have any specific questions for the healthcare provider today?

Patient: Not really. I am just setting up care so that I can continue my regular medications. I did have a little trouble using your restroom though. Do you have other patients that use wheelchairs?

Nurse: I'm sorry for that. What trouble did you have?

Patient: Well, I was able to maneuver into the bathroom, but it was very tight trying to turn around and get near enough to the toilet to empty my catheter bag. The trash can was on one side, and the wall was on the other. I managed okay, though. Also, I can tell that the sink is ADA compliant in height, but I couldn't reach the soap dispenser because I couldn't get close enough to that side of the sink.

Nurse: That's frustrating. Thank you for bringing this to our attention. The office staff, providers, and I will brainstorm some ways to remove these barriers. Do you have any specific suggestions? I know that this office was not ADA-compliant initially and had to be upgraded, but sometimes, it's the things that we can't anticipate that still pose a challenge.

Patient: It may help just to rearrange the trash can and consider a soap dispenser that can be mounted lower. Thank you for being receptive and listening to my concerns.

Stereotypic Attitudes

A **stereotypic attitude** is a fixed, oversimplified, and generalized perception of individuals in a specific demographic

group that stems from internal and external biases. Although stereotypes are the generalizations themselves, stereotypic attitudes are the individual perceptions or responses influenced by those generalizations. The term **internal bias** refers to individual thinking patterns that affect how an individual person views and treats others. An **external bias** is based on societal attitudes and cultural beliefs but also affects how others treat individuals. Stereotypes contribute to discrimination, both unintentional and overt, as well as stigma and prejudice. Unfortunately, stereotyping often leads to **prejudice**, in which an individual, even a healthcare provider, makes a judgment or opinion about a person with a disability before obtaining knowledge of their circumstance. These prejudices may be based on prior personal interactions, cultural perceptions, or lack of knowledge. Stereotyping and prejudice lead to stigma related to disability. A common stereotype of individuals with disabilities is the assumption that disability parallels a poor quality of life. In addition, some individuals see disability as an unhealthy state. Stigma may also affect the way individuals with disabilities perceive themselves within a social environment. Stigma leads to labeling and can harm the mental health of individuals with disabilities if care providers do not take special care to address and reduce stigma. Nurses must provide inclusion and support without overcompensating and contributing to the additional stigma of overdependence.

Stigma and stereotyping can lead to both internal and external consequences, such as social avoidance, internalizations, shame, discrimination, blaming, and violence. In contrast, individuals with disabilities who feel empowered may find strength in positive interactions, including diversity pride, social integration, acceptance, patience, inclusion, and education.

The most important role of the nurse in recognizing, preventing, and avoiding stereotypes and bias is advocating for patients. Nurses must strive for an atmosphere of respect. In developing an attitude of advocacy, the nurse tries to deeply understand the patient experience, with empathy and compassion, and build a framework of care and planning around this.

Lack of Access

Lack of access may occur on a small or large scale. Individuals may encounter inaccessibility or trouble with communication at one facility or on a systemic level in a community without updated infrastructure and funding to provide these updates. Specific access concerns include living environment, transportation, and information access.

Transportation barriers may be associated with inaccessible vehicles, lack of public transport, lack of affordable transportation options, and inclement weather–associated issues. These may be affected by urban versus rural living, because rural-living adults experience significantly more physical barriers to care than their urban-dwelling counterparts (RHIhub, 2024). Another important factor that affects individuals' willingness to seek health care is financial security. Individuals who are uninsured or **underinsured** with a lack of adequate health insurance often delay seeking healthcare treatment until dire circumstances require entry into the healthcare system. Although disabilities are not rare overall, many conditions with associated disabilities are rare. This may limit individual healthcare providers' knowledge of specific conditions. This can be overcome by healthcare provider education, but initial encounters may present a barrier to care for these individuals.

Quality Health Care for People with Disability

Individuals with disabilities encounter persistent and repeated barriers to functionality, quality of life, and even health care. Nurses must ensure that all patients receive quality health care regardless of their functional ability. Rules and regulations help ensure fair and quality care for everyone. The Centers for Medicare & Medicaid Services (CMS) Office of Minority Health aims to ensure that individuals with disabilities receive quality care with the fewest barriers to care (CMS, 2024).

These barriers are addressed in a multifaceted way to create improved overall access through accommodations and health insurance coverage. Communication must be maximized to promote individualized and streamlined care, appropriate physical accommodations, and effective interpersonal interactions. Patients with disabilities who experience quality health care feel a sense of empowerment and control in their care. By providing compassionate and equal care to individuals regardless of disability type, nurses advocate for ongoing, accessible care and reduce disparities in health and healthcare access.

Nurses are primary advocates for patients with disability. Advocacy empowers all healthcare team members to include the healthcare consumer in care decisions. Advocacy also embraces diversity, equity, inclusivity, health

promotion, and health care for diverse patients, including those with disabilities. By understanding federal regulations that affect patients with disabilities, nurses promote policies, regulations, and legislation to improve healthcare access and delivery of health care.

Communication Strategies

Individuals with disabilities have legal rights to accessible care. This care must include appropriate communication to provide the individual with a treatment plan and health recommendations that they can understand. Using person-first language, such as referring to "individuals with disabilities" rather than labeling them by their disabilities, emphasizes their personhood and dignity (CDC, 2022). For instance, it is best to say an "individual with diabetes" instead of a "diabetic patient," as this approach emphasizes their identity as a person first, with diabetes being only one aspect of who they are. For individuals with intellectual disabilities, treatment, and care planning may directly involve a caregiver or family member. However, many people with disabilities live independently and manage their own health care and daily lives.

Regardless of whether a disability is sensory, intellectual, or physical, appropriate communication is critical. Some effective communication strategies are universal and can be applied to individuals with varying impairments. Other disabilities, such as vision and hearing impairment, or developmental, cognitive, or intellectual disabilities, require specific communication techniques and accommodations (Table 42.2).

General communication techniques	• Allow extra time for movement during an exam if mobility is an issue. • Ask before providing physical assistance. • Ask how people prefer to communicate (NLN, 2017). • Maintain a normal tone of voice. • Make eye contact. • Sit at eye level. • Speak directly to the individual even if a caregiver is participating in care. • Respect the personal space of the individual. • Use active listening.
Communication techniques for patients with vision impairment	• Be specific in offering directions. • Ensure the patient has an assistive device (e.g., glasses) if one is required. • Face the person when speaking. • Respect companion or service animal boundaries.
Communication techniques for patients with hearing impairment	• Ensure the patient has an assistive device (e.g., hearing aids) if one is required. • Face the person when speaking. • Repeat yourself, if necessary • Speak clearly and as slowly as necessary.
Communication techniques for patients with developmental, cognitive, or intellectual disabilities	• Allow time for questions. • Ask open-ended questions, but only one question at a time. • Avoid making assumptions, such as about reading ability. • Base communication style on the person's preference (NLN, 2017). • Be flexible in communication. • Clarify what is said and what is heard. • Limit the number of directions given at one time.

TABLE 42.2 Communication Techniques for Empowering Interactions

Qualified sign language interpreters, assistive listening devices, and Braille or large-print reading material are other possible accommodations for these sensory disabilities. Ensuring that an interpreter is accessible is required by law.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Patient-Centered Care: Hearing Impairment

Definition: Recognize the importance of treating patients as partners in their care by considering their values, needs, and preferences.

Knowledge: Individual preferences vary about the management of hearing impairment. Respect for individual preferences is crucial. Depending on the severity of their hearing impairment, individuals may use a variety of accommodations to assist in communication, such as:

- assistive listening devices
- auditory implants
- digital translators
- hearing aids
- in-person sign language translator
- lip reading
- sound amplification devices
- written communication

Skills: Communication between nurses and patients with hearing impairment should be agreed upon before engaging in important clinical conversations about care. Federal law requires reasonable accommodations to enhance communication for these individuals. The nurse must recognize the need for an accommodation to ensure patient understanding during the clinical encounter.

Attitudes: Patients and family members must understand their care and treatment plan to ensure positive health outcomes.

Accessibility of the Health Care Facility

All individuals, despite their physical, cognitive, or psychological ability level, have the right to access safe, quality health care in their community. Full and equal access for all individuals is required by law under the ADA. This encompasses physical accessibility, appropriate communication, and other reasonable modifications to ensure access by all. All healthcare facilities, including hospitals, outpatient primary care and specialty clinics, pharmacies, and dental practices, must comply with ADA rules for providing accommodations. In addition to the ADA regulations, legislation is in place to maintain the accessibility of health care for individuals with disabilities. The **Rehabilitation Act** protects individuals against discrimination based on disability at any federally funded facility or any facility receiving federal financial assistance. This includes many hospitals, clinics, and ancillary healthcare facilities. Although they are not held to stricter requirements, healthcare facilities must ensure accommodations similar to that provided in other public spaces. The U.S. Department of Justice upholds enforcement to ensure that requirements are met.

Accommodations

In some cases, policy modifications may be necessary to accommodate individuals with a disability, such as allowing a companion to accompany the patient into a procedure for assistance and allowing for service animal access. Adjusting schedule flow and timing to accommodate psychological impairments such as anxiety is another possible accommodation. Accessible health care also includes allowing for and ensuring adequate digital access to records. Creating options for video telehealth and telephonic visits, as appropriate, for individuals with a significant disability that limits their ability to present in person for healthcare evaluation is crucial. Facility accessibility focuses primarily on physical aspects of the building environment and includes the following specific factors outlined by the ADA (ADA National Network, 2024a):

- appropriate width of doorways and passages
- dedicated disability-accessible parking spaces
- lever-style door handles
- wheelchair-accessible bathrooms with grab bars (Figure 42.3)
- wide and clear pathways through the facility

This may mean that facilities make changes to improve physical access, such as installing ramps, revising entry and doorways to comply with ADA requirements, or providing an alternative entrance.

FIGURE 42.3 A community park provides an ADA accessible bathroom and a pool access chair for individuals with disabilities. (credit: modification of "Pool access chair in accessible toilet, Runcorn Swimming Pool, Runcorn DSCF6197" by John Robert McPherson/Wikimedia Commons, CC0 1.0 Public Domain)

The concept of universal design emphasizes an inclusive approach to structural building and design. Instead of adding accommodations after the structural design, a universal design begins with a plan to make the environment accessible and functional for most individuals. Due to building age, this idea may only be standard in some healthcare buildings. However, it is essential to consider accessibility when creating new spaces, upgrading medical buildings and environments, and considering community infrastructure upgrades (CMS, 2017).

Federal Health Insurance Program

Several federally funded health insurance programs cover individuals with a disability. Federally funded insurance programs that cover individuals with disability include Medicare, Medicaid, and Social Security disability. Individuals who qualify for Social Security Disability Income, based on their qualifying disability, are candidates for federal Medicare insurance coverage after a 24-month waiting period. Depending on the income level of the family or individual, Medicaid or other private insurance options are available. Federal rules and regulations protect individuals with a disability from discrimination by insurance companies based on their disability. The Affordable Care Act created a variety of changes to protect individuals with disabilities, including (Health.gov, 2020):

- health insurance provisions to eliminate discrimination
- prohibition of denial of coverage for preexisting conditions
- regulations on accessibility of facilities

Because individuals with disabilities may require prolonged treatments or support, having health insurance coverage is essential. Access to care, quality of care, and long-term outcomes are directly related to an individual's ability to access health care financially.

42.3 Chronic Disease and Chronic Illness

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Define chronic disease and chronic illness
- Recognize the prevalence and causes of chronic conditions
- Explain different categories of chronic conditions

Chronic disease and chronic illness are prevalent in our society. Nurses must understand the definitions and types of chronic conditions and recognize the social implications that these conditions have for individuals. The prevalence of different chronic diseases varies by age, location, family circumstance, social environment, and lifestyle choices.

By understanding categories of chronic conditions, nurses can understand the correlation between disease states. They can promote health in individuals regardless of the type or number of chronic conditions the individuals experience. An understanding of various chronic conditions enables nurses to recognize changes in patient health that may require further healthcare provider evaluation and treatment to prevent the progression of disease or complications.

Definitions

The terms **disease** (a disorder within the body that is identifiable as a medical condition) and **illness** (the perceived experience of a disorder within the body) are often used interchangeably. This is true in the lay population and the medical community. There is ongoing debate about the classification of these terms and whether human disorders should be referred to as diseases or illnesses. An enduring explanation differentiates chronic disease and illness by medical classification and personal experience, respectively (Martin, 2007).

Nurses must understand the subtle differences between chronic disease and chronic illness to provide compassionate and individualized care. A working definition of health is crucial in understanding disease and illness, providing patient care, and working in a collaborative relationship with other medical professionals. The World Health Organization (WHO) suggests that in a state of health, an individual experiences well-being in physical, mental, and social aspects of their life (WHO, n.d.). Because this definition of health focuses on individual well-being, it is also important to realize that it is more than simply the absence of disease. Health and illness exist on a continuum, with many factors playing a role in an individual's experience of illness or health. In real-world applications, health may not be the complete absence of disease. Individuals who live with one or more chronic diseases may experience a high level of emotional, social, physical, or overall health. For example, an individual with social anxiety disorder may have excellent physical health, a strong social network, and stable emotional patterns stemming from active coping mechanisms such as physical exercise, individual and group therapy, and active participation in social support groups. Chronic disease and chronic illness can be grouped together as a collection of chronic conditions that have overlapping causes as well as treatments.

Chronic Disease

Long-standing definitions describe **chronic disease** as a state of being that includes a biomedical disease (Martin, 2007). The CDC classifies a disease state as chronic when a condition lasts 1 year or longer. Although disease presentations and circumstances vary widely between individuals, most chronic diseases require ongoing medical treatment and intervention and may affect a person’s ability to perform daily activities (CDC, 2022a). Several diseases affect individuals over an extended period and are considered chronic. Common chronic diseases in the United States include heart disease, hypertension (HTN), epilepsy, stroke, mood disorders, cancer, diabetes, asthma, chronic obstructive pulmonary disease (COPD), arthritis, dementia, psoriasis, osteoporosis, obesity, autoimmune disorders, and chronic pain.

Some chronic diseases are preventable based on lifestyle factors. Although there is some debate regarding whether a **communicable disease** passed from person to person is a chronic disease, most definitions include these conditions. Examples of communicable diseases that may be considered chronic diseases are HIV and acquired immunodeficiency syndrome (AIDS), malaria, and hepatitis C. Chronic diseases typically develop over a prolonged period, sometimes without overt symptoms. Chronic diseases are often implicated in the onset of more acute health complications. Others are hereditary or genetic without any other identifiable cause. Chronic diseases may have an identifiable cause, such as epilepsy, diabetes, and asthma. In others, it may be challenging to identify a specific cause. Some chronic disease states are modifiable with lifestyle and treatment modalities. Chronic diseases typically are not cured by medical treatment but may be modified to an extent to create a remission, reduction, or disappearance of symptoms of a disease. Other conditions, disorders, and syndromes may meet some criteria of chronic disease but more commonly contribute to or result from chronic disease states (Table 42.3).

Chronic Condition	Contributes to	Results from
Dental caries	Chronic pain Infection	Diabetes Inflammatory bowel disease Malnutrition Sjögren disease
Grief	Anxiety Depression Insomnia	Cancer Terminal disease
Malnutrition	Anemia Diabetes Heart disease Infection Osteoporosis	Cancer Dementia Inflammatory gastrointestinal disease
Sarcopenia	Osteoporosis Type 2 diabetes	Chronic lung disease Obesity Rheumatoid arthritis

TABLE 42.3 Conditions That Contribute to and Result from Chronic Diseases

Chronic Illness

In contrast to chronic disease, **chronic illness** describes an individual's experience with a chronic condition. Chronic illness may result from the onset or progression of a chronic disease. The outward expression of chronic illness is seen in the way individuals live and cope with chronic disease and the disruptions it causes in their daily activities. Individuals can have many symptoms of chronic illness, depending on the associated disease process. Symptoms may include fatigue, weakness, pain, headaches, negative self-image, social withdrawal, inability to work, decreased physical function, stress, mood disorders, anxiety, sleep disturbance, and cognitive changes.

There can be an overlap in some symptoms of certain chronic diseases and chronic illnesses. For example, an individual may experience migraine headaches as an independent chronic disease or as a symptom associated with chronic illness. These headaches may progress over time and create dysfunction in many aspects of life. Another individual may experience headaches as part of chronic illness experiences in response to a cancer diagnosis. These headaches may be caused by stress or treatment or may have a biophysical cause. Regardless of the cause of the symptoms, they are usually treatable and can often be modified with lifestyle modifications.

Prevalence of Chronic Conditions

Chronic conditions are prevalent in the United States. The CDC (2022b) reports that up to 60 percent of adults have one chronic disease. Because chronic diseases such as heart disease, stroke, cancer, and diabetes are so prevalent, these diseases also represent the leading causes of death and acquired disability. Care, treatments, and interventions for the most common chronic conditions make up the majority of healthcare costs in the United States. The CDC reports that 90 percent of healthcare costs annually are spent on diagnosing and managing these chronic conditions (CDC, 2022b). Disease cost estimates also include the cost of lost productivity and income due to the inability to perform work functions due to chronic conditions. Rates for chronic conditions are staggering (Table 42.4). The high prevalence of common behavioral risk factors for these conditions, such as sedentary lifestyle, tobacco use, and unhealthy nutrition habits, suggests a continued or increasing disease prevalence over time (Rus et al., 2023).

Chronic Condition	Prevalence among U.S. Adults	Annual Cost
Arthritis	25% (58.5 million)	$303 billion
Cancer (all types)	2 million people (annual diagnosis rate)	$185 billion
Cardiovascular disease (heart disease and stroke)	50% (121 million)	$407 billion
Diabetes	11% (37 million)	$327 billion
Epilepsy	3.5 million	$8.6 billion
Obesity	42% of adults 20% of children	$173 billion
Pain	20% (100 million)	$560 billion

TABLE 42.4 Prevalence of Common Chronic Conditions in the United States (Sources: AHA, 2019; CDC, 2022b, 2023a, 2023b.)

Causes of Chronic Conditions

Chronic conditions may result from a discrete cause or have a complex causality. Multiple factors often lead to single or multiple chronic conditions. Many chronic conditions arise from a few detrimental lifestyle factors, including tobacco use, secondhand smoke exposure, improper nutrition, sedentary lifestyle, and substance use disorders (CDC, 2022b). Genetic or hereditary factors are also responsible for certain chronic diseases. A family history of specific disorders puts an individual at a higher risk for these same chronic conditions. Some conditions are directly linked to specific genes that increase an individual's risk, such as genes associated with colon and breast and ovarian cancers. Other chronic conditions may result from environmental exposures, infectious disease, and complications from injuries. Many chronic conditions have an overlap in symptoms, pathophysiology, and cause. One chronic disease may contribute to the onset or worsening of another.

Multiple Chronic Conditions

The CDC (2022b) reports that up to 40 percent of adults in the United States have two or more co-occurring chronic conditions. These conditions may stem from the same cause or risk factors or develop independently. In addition, some chronic conditions create secondary disorders that, over time, develop into additional chronic conditions. Consider an adult with obesity who develops type 2 diabetes; over time, this individual may experience the effects of diabetes, with impaired kidney function, heart disease, peripheral vascular disease, or retinal damage. Studies indicate that women, non-Hispanic White adults, older adults, and those adults receiving public insurance have higher rates of multiple chronic conditions (Boersma et al., 2020). The interaction between multiple disorders is responsible for many interrelated symptoms and **comorbid medical conditions** (multiple medical conditions that are simultaneously present). Because of this interplay of symptoms, it is sometimes difficult to differentiate or treat conditions separately.

LINK TO LEARNING

Increase your awareness of metabolic syndrome (https://openstax.org/r/77MetabolicSynd) by watching this video. Metabolic syndrome is a cluster of comorbid conditions that significantly increase a person's risk of stroke, heart disease, and type 2 diabetes.

Categories of Chronic Conditions

Chronic conditions are broadly categorized by type of disease and the organ system most affected. However, many chronic conditions affect multiple organ systems directly or indirectly. Treatments and interventions for one condition may negatively affect another chronic condition or create problems in associated organ systems. For example, radiation treatment for cancer may cause circulatory problems, chronic pain, or cognitive issues,

depending on the location of treatment. Many chronic conditions overlap; for example, an individual with diabetes has a high risk of developing progressive kidney damage and, ultimately, chronic kidney disease (CKD).

Cancers

Cancers affect individuals of all ages, with the prevalence of different cancer types varying by age, demographic, and risk-exposure group. Although known risk factors for certain cancers are predictable, it is impossible to predict which individuals will develop cancer during their lifetime. Cancers are highly variable in their onset, progression, and treatment response. So many different factors play a role in the components of this disease. Although some cancers are more common in children and young adults, advancing age is the most significant risk factor for developing many types of cancer. In addition, the common risk factors for all chronic diseases also correlate with cancer risk, such as tobacco use, lack of physical activity, poor nutrition, and obesity.

PATIENT CONVERSATIONS

Living with Cancer

Scenario: Sonja is a 67-year-old female who works part-time as a grocery store clerk. She lost both her mother and sister to breast cancer. She was devastated 2 years ago when she was also diagnosed with breast cancer. During her follow-up visit to her primary care provider's office, she expressed a sense of gratitude for the new cancer treatments that allow her to "live with cancer."

Nurse: Hello, Sonja. It's been a while since we saw you for a wellness exam.

Patient: Yes, I have seen my specialist so many times over the past 2 years for testing and treatment that I figured I didn't need another doctor visit.

Nurse: How is your treatment progressing?

Patient: I am feeling really well. I am past my initial surgeries and radiation treatments. Now, my oncologist tells me I am just "living with cancer." He says that because of these new treatments, cancer can now be considered a chronic disease.

Nurse: Tell me your maintenance medication regimen, and I will update your medication list.

Patient: I take a hormone therapy pill, and I go in every 3 weeks to the infusion center for a maintenance infusion. My job is to eat healthily, move my body, and continue health maintenance. That's why I'm here!

Nurse: I'm glad you are doing so well. Your healthcare provider will be in shortly to discuss additional health screening options and perform a wellness exam.

Cardiovascular

Cardiovascular diseases (CVDs) encompass many disorders and are the leading cause of death. These conditions affect the heart and blood vessels, including large vessels and tiny capillaries. These conditions compound one another to create a progressively higher risk for acute disease and death. Common chronic diseases associated with the cardiovascular system include HTN, hyperlipidemia, coronary artery disease, peripheral vascular disease, heart failure, valvular disease, and atrial fibrillation.

Although CVD risk may be familial, poor lifestyle choices significantly increase an individual's risk of developing CVD. In particular, a sedentary lifestyle and poor nutritional choices contribute significantly to plaque buildup in large vessels, leading to coronary artery disease. Other lifestyle factors that increase CVD risk include smoking and excessive alcohol use. Because of the effects of CVD on the vessels and heart, acute damage to these organs can occur and have a high risk of mortality and morbidity. These acute diseases include stroke, heart attack, aneurysm, and heart valve disease.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Evidence-based Practice

Definition: Describe reliable sources for locating evidence reports and clinical practice guidelines.

Knowledge: Nurses must distinguish between clinical opinion-based reports and those referencing clinical evidence and research summaries. Because nurses provide most patient education on CVD and associated conditions and risk factors, they must continually review recommendations that guide clinical practice. Focusing on guidelines from the American Heart Association, reviewing evidence-based reports on new treatment options, and familiarizing themselves with outcome goals gives nurses an advantage in providing the most up-to-date care for their patients.

Skill: Nurses can be alert for progressive changes in biomarkers such as serum lipid tests, blood pressure changes, edema, and subtle chest pain. The nurse can empower their patients to pursue lifestyle modification by providing clinical education based on evidence-based data that clearly show the benefit of these actions. Depending on patient motivation and health literacy, nurses can adjust the level and depth of teaching while still promoting evidence-based practice. The nurse focuses on patient needs and concerns while incorporating contemporary treatment guidelines to fit the individual patient's circumstances.

Attitude: A focus on evidence-based practice enhances the nurse's professional presence, promotes the best outcomes for patients, and guides patient-centered care.

Cognitive

Chronic cognitive disorders are those disorders that affect the thinking process, memory, and brain processing. Cognitive disorders may be acquired from trauma or stroke, or may result from mental health disorders. Common cognitive disorders include TBI, stroke, dementia, Alzheimer disease, and Parkinson disease.

Cognitive impairments may also be seen in individuals with other chronic disorders that affect oxygenation. There is some overlap between cognitive disorders and neurological disorders. Aging may also be associated with some cognitive decline, such as mild cognitive impairment, and compounded with other chronic conditions. Cognitive disease in younger individuals may result from early-onset dementias as well as TBI. Although most TBIs are related to an acute event, repetitive brain injury is associated with long-term effects that may cause lasting and significant impairments in brain function (CDC, 2024). Cognitive impairments may also arise secondarily to primary benign or cancerous brain tumors or tumors associated with cancer metastases.

LINK TO LEARNING

Increase your awareness of chronic traumatic encephalopathy (https://openstax.org/r/77encephalopath), which is an acquired chronic cognitive condition that can develop from repeated head injuries or concussions, which occur often in athletes.

Mental Health

Although some mental health disorders present as an acute change in psychiatric stability, many mental health disorders are considered chronic conditions. Chronic mental health conditions include generalized anxiety disorder, social anxiety disorder, PTSD, depression, obsessive-compulsive disorder, bipolar disorder, schizophrenia, borderline personality disorder, and eating disorders.

Mental health disorders can be present in the absence of any other physical health conditions or can be triggered by these conditions. In addition, some mental health disorders are exacerbated or triggered by other chronic disorders, such as depression and anxiety. Nurses must address these topics with compassion and respect, thereby erasing the stigma that has been present historically regarding mental health disorders. Although there is often overlap in mental health conditions, treatment is undertaken by addressing each specific component. Mental health professionals, counselors, primary care providers, and nurses all play a role in maintaining health and quality of life

in individuals with chronic mental health disorders.

Immune System

Chronic immune disorders originate in the immune system but can affect nearly all organ systems in the body. The immune system performs many functions in protecting the body and preventing illness. Disorders of the immune system can lead to specific conditions as well as the inability of the body to fight infection. Immune disorders can be classified into three major categories: immunodeficiency disorders, overactive immune disorders, and autoimmune disorders.

An **immunodeficiency disorder** is a condition or disease that is caused by a weakened immune system that impairs the body's ability to fight off disease or infection. Immunodeficiency disorders can be congenital or acquired (resulting from exposure to a toxin or pathogen, such as HIV). Congenital immune disorders are often present at birth and are uncommon in the general population. Acquired immune deficiency disorders are much more common. Viruses, medications, and medical treatments trigger chronic immune deficiency disorders. Examples of acquired immune deficiency disorders include AIDS, cancers of the immune system, and multiple myeloma. Immune deficiency can also be triggered by toxins introduced into the body, as with smoking, alcohol consumption, and poor nutrition.

An **overactive immune disorder** occurs when the immune system develops a hyperresponse to normally harmless environmental substances. These are often more common disorders and are typically much easier to identify and treat. These disorders cause symptoms commonly experienced as breathing disorders, skin reactions, and nasal congestion. Some of these conditions include asthma, eczema, allergic rhinitis, and anaphylaxis.

An **autoimmune disorder**, or a rheumatological condition, arises from the body's immune system attacking and damaging its cells and organs. Autoimmune disorders may be challenging to diagnose and have various presenting symptoms related to general inflammation in the body. These symptoms may include joint pain and damage, rash or other skin disorders, organ dysfunction, dry mouth, metabolic abnormalities, and chronic pain.

Specific autoimmune disorders can be diagnosed through clinical evaluation and blood testing. Autoimmune disorders affect various organs in the body, causing persistent and sometimes progressive damage, mainly if not treated (Table 42.5).

Autoimmune Disorder	Organ System Affected
Celiac disease	Gastrointestinal
Inflammatory bowel disease	Gastrointestinal
Pernicious anemia	Blood cells
Rheumatoid arthritis	Musculoskeletal (joints)
Systemic lupus erythematous	Systemic, multiple organ systems
Thyroiditis	Thyroid
Type 1 diabetes	Pancreas, metabolism

TABLE 42.5 Autoimmune Disorders and Organ Systems

Endocrine

The endocrine system is spread among multiple organs and glands throughout the body (Figure 42.4). Because the endocrine system affects many organ systems simultaneously, an intricate balance is necessary to maintain health.

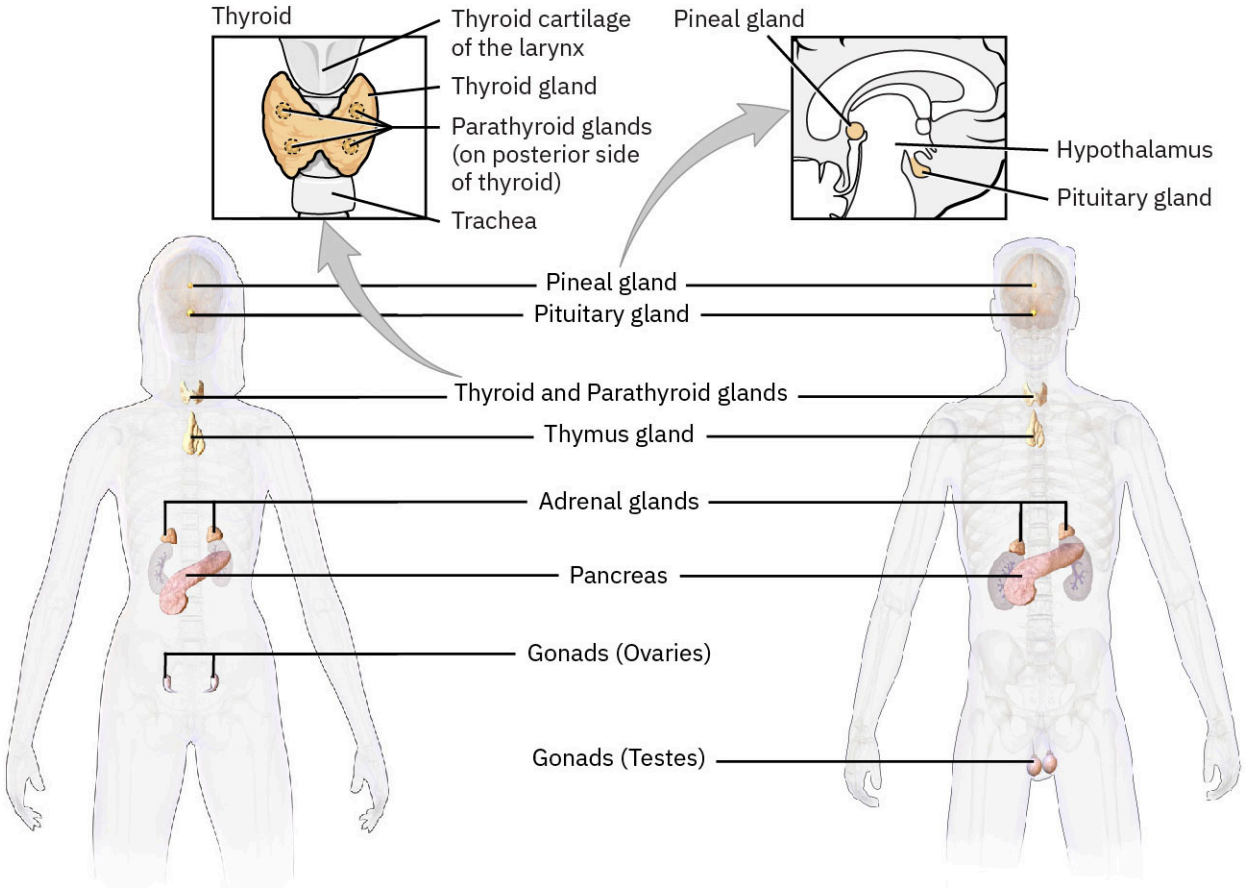

FIGURE 42.4 The endocrine system is a complex system spread throughout the body. (modification of "Blausen 0345 EndocrineSystem Female2" and "Blausen 0346 EndocrineSystem Male2" by "BruceBlaus"/Wikimedia Commons, CC BY 3.0)

Endocrine disorders are associated with hormone production and use within our bodies. Complex interactions between hormones produced by endocrine organs throughout the body affect metabolism. Examples of these complex interactions include sleep, reproduction, digestion, glucose metabolism, blood pressure, fluid balance, temperature regulation, and appetite (Table 42.6).

Organ/Gland	Location	Endocrine Action	Chronic Disorders
Adrenal glands	Abdomen	Blood pressure Blood sugar regulation Electrolyte balance Heart rate Sleep-wake cycle Stress response	Addison disease Cushing syndrome Pheochromocytoma
Hypothalamus	Brain	Appetite and thirst Blood pressure Body temperature Mood Sex drive Sleep-wake cycle	Diabetes insipidus Hypopituitarism

TABLE 42.6 Endocrine System

Organ/Gland	Location	Endocrine Action	Chronic Disorders
Ovaries/testes	Pelvic	Reproduction	Amenorrhea Erectile dysfunction Infertility Polycystic ovarian syndrome
Pancreas	Abdomen	Food digestion Glucose regulation	Diabetes Pancreatitis
Parathyroid glands	Neck	Calcium, phosphorus, and magnesium regulation in blood and bones	Hypoparathyroidism Osteopenia
Pineal Gland	Brain	Sleep-wake cycle	Sleep disturbance
Pituitary gland	Brain	Growth Metabolism Reproduction	Acromegaly Cushing disease Prolactinoma
Thymus	Chest	Pubertal changes T-cell maturation and specialization	Myasthenia gravis Pure red cell aplasia
Thyroid gland	Neck	Bone maintenance Heart function Metabolism Muscle function	Graves disease Hashimoto thyroiditis Hyperthyroidism Hypothyroidism

TABLE 42.6 Endocrine System

Many endocrine disorders can be discovered by evaluating blood tests for hormone under- or overproduction. Because symptoms of endocrine disorders may be subtle and similar, nurses must maintain diligence in recognizing possible signs of endocrine dysfunction.

REAL RN STORIES

Polycystic Ovarian Syndrome (PCOS)

Nurse: Ayla, RN
Clinical setting: Women's health clinic
Years in practice: 24
Facility location: Kentucky

I've worked as a women's health nurse for 22 years. While doing clinical rotations at an OB-GYN [obstetrician-gynecologist] office during nursing school, I knew this was my calling. During that clinical rotation, I finally understood what was "wrong with me." Since puberty, I have struggled with being overweight, irregular menstrual cycles, unwanted hair growth on my body, and severe acne. My family was not very open about discussing our bodies or health concerns, and I was too afraid to seek out help elsewhere. During my clinical rotation, I heard people describing the same symptoms. The difference was that they were seeking care and receiving a diagnosis. I asked my preceptor questions, and she encouraged me to make an appointment with one of the providers in the clinic for a formal evaluation.

I was terrified when I came in for the appointment. However, after telling my story and explaining my symptoms, the provider performed a complete physical, including vital signs, a pelvic exam, blood tests, and a pelvic ultrasound.

The blood tests evaluated for hormone levels, cholesterol levels, thyroid function, kidney and liver function, and blood sugar. The pelvic ultrasound enabled the provider to evaluate my uterus and ovaries. After reviewing all of these tests, my provider diagnosed me with PCOS. Although he did say I could have received treatment much sooner, he commended me for seeking care. He started some medications for both treatment and prevention of other complications like diabetes, high blood pressure, and infertility.

Since seeking care, I have been able to manage my disorder successfully, receive support through support groups, and have children. I feel fortunate to be able to help other women along this journey.

Neuromuscular

Neuromuscular conditions arise from complex interactions between the neurological and muscular systems. These disorders can be congenital or acquired later in life. These conditions result from a dysfunction in the innervation of muscles throughout the body. Most neuromuscular disorders are associated with some level of progressive physical impairment. Examples of neuromuscular disorders include MD, amyotrophic lateral sclerosis (ALS), peripheral neuropathy, polymyositis, congenital myasthenia syndrome, and MS.

The commonality in neuromuscular disorders is muscle weakness and physical dysfunction. This can occur peripherally in the limbs, but, as in MD, it can also affect internal organs, causing complications in organ functions such as elimination and breathing. Muscular dystrophy is a progressive genetic disorder that results in the body's inability to make appropriate proteins for muscles. Neuromuscular disorders can put individuals at risk for complications such as difficulty with running, jumping, and walking; abnormal gait; falls; delayed growth; and learning disabilities (Mayo Clinic, 2022).

Disorders such as ALS affect nerve cells in the brain and spinal cord, causing progressive loss of muscle control, including muscles that control vital life processes such as eating and breathing. Neuromuscular disorders are rarely curable, but many have effective and evolving treatments to improve quality of life and minimize associated disability.

Neurological

Neurological chronic diseases can be classified as strictly neurological or neurodevelopmental. Neurodevelopmental disorders include autism spectrum disorder (ASD), ADHD, or ADD. Neurodevelopmental disorders commonly coexist with mental health disorders such as anxiety and may be addressed and treated by a mental health professional. Some learning disabilities are also considered neurological disorders that require some treatment and accommodation over a person's lifetime. Some neurological diseases develop over the life span, whereas others arise from injury. Examples of neurological disorders include Huntington disease, epilepsy, spinal cord injuries, headache syndromes, Guillain-Barré syndrome, and restless leg syndrome.

Neurological disorders frequently require prolonged medication treatments. Because these diseases may present slightly differently in each individual, they are notoriously difficult to diagnose and treat. The nurse's role is to maintain awareness of any new neurological symptoms that patients report, particularly symptoms that persist and change over time.

Kidney

Most CKD is acquired and results in a progressive loss of kidney function. Kidney disease typically has an insidious onset with few outward symptoms. If the disease progresses, the patient will begin to develop symptoms, which may include nausea and vomiting, fatigue, sleep disturbance, urinary changes, decreased cognition, muscle cramping, peripheral edema, pruritis (itching), resistant HTN, chest pain, and shortness of breath (CDC, 2022a). Kidney disease is closely tied to other metabolic disorders such as diabetes, HTN, heart disease, and obesity. For example, HTN and diabetes negatively affect the small vasculature in the kidneys, causing damage and progressive loss of function.

In addition, medical treatment and medication for other chronic disorders may put increased stress on the kidney, leading to a progressive decline in kidney function. Nurses must understand that early treatment of associated conditions is the key to preventing the progression of CKD and the need for dialysis.

LINK TO LEARNING

Learn more about kidney disease (https://openstax.org/r/77KidneyDisease) from a Mayo Clinic doctor.

Respiratory

Respiratory diseases are common chronic conditions. They include disorders of the nasal passages, trachea, and lungs. Chronic respiratory conditions range in severity from mild to life-threatening. Some common respiratory conditions include chronic rhinitis, asthma, COPD, sleep apnea, pulmonary fibrosis, and cystic fibrosis. These disorders cause problems with air exchange, inflammation in the lung and airway passages, and progressive lung remodeling. Some diseases, such as asthma, require long-term management but remain stable or improve during the life span. Others, such as COPD and pulmonary fibrosis, are typically progressive, causing increasing dysfunction and symptoms.

Pulmonary fibrosis may be idiopathic or related to environmental exposures such as silica, coal dust, or asbestos. Idiopathic pulmonary fibrosis develops without a known cause; however, age and smoking history do increase the risk. There is no definitive heredity component in pulmonary fibrosis. Chronic obstructive pulmonary disorder is a progressive lung disorder causing obstructive changes in the lungs. The most significant risk factor for COPD is smoking, followed by occupational exposure, air pollution, and a genetic α-1 antitrypsin deficiency. α-1 Antitrypsin deficiency is a complex disorder in which a person's body does not produce the protein α-1, which blocks enzymatic damage from the neutrophil elastase enzyme, which can cause damage to the lungs.

Cystic fibrosis is a disorder that significantly affects the lungs but also affects other organ systems, including the digestive tract. The inherited disorder is progressive and causes a thickening of mucous secretions within the body that can plug air passages and other internal ducts. Individuals with cystic fibrosis have a shortened life span of between 30 and 50 years (Mayo Clinic, 2021).

LINK TO LEARNING

Learn more about cystic fibrosis (https://openstax.org/r/77CysticFibros) and how it affects the lungs.

Sleep apnea and rhinitis are disorders of the upper airways. Rhinitis causes inflammation and increased mucous production, contributing to chronic cough and impaired air exchange if inflammation restricts air movement. Sleep apnea is a prevalent disorder that directly affects breathing patterns and oxygenation of the body. The primary cause is pharyngeal narrowing and weakened pharynx muscles that cause the pharynx to close during sleep. Increased neck circumference creates increased pressure on the pharynx, causing a repetitive partial collapse. Sleeping on one’s back, smoking, alcohol use, and sedatives can all contribute to sleep apnea. Risk factors for sleep apnea include obesity, male sex, and advancing age. Untreated sleep apnea can cause a host of additional problems in various organ systems, including congestive heart failure, coronary artery disease, HTN, stroke, atrial fibrillation, sudden cardiac death, headaches, daytime fatigue, reduced work productivity, and glaucoma (Blackwell et al., 2019).

LINK TO LEARNING

The STOP-BANG questionnaire (https://openstax.org/r/77STOPBANGquest) helps nurses screen patients for sleep apnea and can help nurses educate patients about the risk factors for sleep apnea.

42.4 Healthcare Approach to Chronic Conditions

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze different healthcare considerations for chronic conditions
- Identify how to ensure quality health care for people with chronic conditions
- Explain nursing care of patients with chronic conditions

Although chronic conditions vary in severity, treatment needs, and support requirements, nursing care for individuals with chronic conditions focuses on providing access to all individuals. Nurses maintain a strong awareness of individual needs by considering various factors that affect healthcare delivery and access. By creating care plans focused on these specific needs, nurses promote autonomy by creating an atmosphere in which the patient is an expert on their own health. Caring for individuals with chronic conditions requires collaboration and knowledge of medication and therapeutic regimens. Patient-centered care and improving quality of life are also of high importance in caring for individuals with chronic conditions

Healthcare Considerations for Chronic Conditions

Many social, environmental, and personal factors affect healthcare delivery. Nurses will address considerations that affect patients on a personal level, such as psychological and ethical issues. Other considerations include environmental factors, financial concerns, and family dynamics. Other factors, such as social interactions, at-risk populations, and support services, also guide nursing care for individuals with chronic conditions.

Psychological Considerations

Psychological considerations in chronic disease relate to the person's day-to-day experience living with a chronic disease. Individuals may experience grief related to a loss of ability over time. In addition to grief, chronic diseases pose additional mental health challenges. Chronic conditions are associated with a high rate of depression (Ma et al., 2021). Mental health conditions triggered by chronic disease may be exacerbated by fatigue, chronic pain, and fear.

Chronic pain is common in many long-term disorders and has a high correlation with depression. Up to 30 percent to 50 percent of individuals with chronic pain have coexisting depression (Meda et al., 2022). Depression may also precede chronic pain. Nurses can focus on promoting support groups and providing education on the importance of psychotherapy to help develop coping strategies for chronic illnesses. The burden of chronic disease may also cause interpersonal, family, and relationship conflicts related to caregiver strain, financial stress, loss of work ability, increased healthcare costs, and increased time burden. Common are feelings of sadness, grief, and discouragement, which can fluctuate over time depending on the immediate health condition. Grief in chronic disease is an important topic that nurses can help patients navigate. Losing ability, facing death, or developing progressive syndromes can lead to a specific grief response.

Ethical Considerations

Ethical considerations in caring for individuals with chronic diseases are an important aspect of care for nurses. The ethics of care, particularly for individuals with **multimorbidity**, the co-occurrence of two or more chronic disease states, revolves around patient autonomy and dependence. Studies show there is a fine line between autonomy and dependence in caring for patients with chronic disease (Coronado-Vázquez et al., 2020). Promoting quality of life and autonomy are two of the primary roles of the nurse; however, the vision of autonomy balanced with support must be shared among the healthcare team and the patient. A sense of autonomy empowers patients to feel a sense of control and produces improved well-being and measurable health outcomes and quality of life. The ethical considerations nurses must consider include the financial burden of chronic disease, particularly multimorbidity at an individual level as well as at community and societal levels. Beneficence and nonmaleficence also play a role in the nursing care of individuals with chronic disease. This is easily demonstrated by considering the effects of polypharmacy on patient health and well-being. Multiple medications meant to improve patient health can have harmful effects due to drug-drug interactions and organ system reactions. Diligence on the part of the nurse can identify problematic medication combinations, particularly in patients who, because of multiple chronic diseases, are seen by many specialty healthcare providers. In this instance, nurses take on the care coordinator role for patient wellness while maintaining treatment plans across medical specialties.

Social Considerations

Social considerations about chronic disease focus on the ethical issue of healthcare equity, fairness in healthcare access, and disparities among social and demographic groups. The nurse's role is to level the field and reduce disparities while respecting and understanding social and cultural determinants of health. Social determinants of health include social practices, lifestyle, work, living situation, and community environment. These can range from health choices such as smoking, drug or alcohol use, and poor nutrition, to violence in neighborhoods, domestic violence, pollutants in the environment, unemployment, and high-stress employment. These all point back to the toll that social constraints and factors play on an individual's health and the health of a community in which people dwell. Social determinants of health also have a significant impact on personal well-being and can affect friendships, interactions with coworkers, access to leisure activities, and participation in hobbies.

PATIENT CONVERSATIONS

A Family in Transition

Scenario: Dara is a 39-year-old patient who is seeking care for her 14-year-old daughter, Lana, who is struggling with depression and anxiety. Lana does not want to be at the appointment today and offers little verbal interaction. They are seeking a referral to a mental health specialist as well as guidance in obtaining a social worker. Dara lost her job about a year ago and she and Lana have been sleeping in their van and staying with friends on and off since then.

Nurse: Good afternoon, I'm Finn. It looks like we're seeing you today to discuss some emotional challenges you are dealing with.

Patient: We've had a lot of challenges this year and they're starting to take a toll on Lana. I'm noticing her withdrawing and becoming increasingly anxious and angry. She's lost some friends who seem repelled by our situation, and I think she's being teased about being homeless, too. I don't have much hope in changing our situation right now, either.

Nurse: It sounds like you're really worried about Lana and maybe you are struggling as well.

Patient: Yes, I am, but I want to get Lana some help in managing depression and anxiety. I feel that if we had a social worker to help us navigate the system, we might have a better chance of finding an affordable place to live.

Nurse: It took a lot of courage for you to come in today. I know the healthcare provider can evaluate Lana today and get her on the right track to feeling better and coping with these hard times.

Patient: Can you refer us to a social worker, too?

Nurse: Yes, we can refer your family to a social worker. I think a referral for counseling that is covered by your insurance may also be beneficial for you and Lana. Are you willing to see a counselor?

Patient: Yes, I think seeing a counselor individually and together would really give us a boost. Thank you for your help today.

Nurse: Great, we'll get the referrals going, and the healthcare provider will be in shortly to see you.

In contrast, social determinants of health can also guide disease prevention and health promotion (see 4.1 Defining Health and Wellness for more on social determinants of health). Perceived discrimination and the strength of social networks also play a role in health. Focusing on these factors, nurses must address the negative impacts of social factors on health. Focusing on positive impacts, such as strong family bonds and community support, promotes an overall sense of health and potentially reduces the risk of chronic disease among individuals in high-risk social groups (Cockerham et al., 2017).

On an individual level, nurses can encourage patients to embrace their social environment and existing support networks by:

- becoming experts in their own care
- joining support groups

- learning about their disease process
- talking to others about their illness
- understanding their medications and treatment

Financial Considerations

Chronic disease is responsible for an individual financial cost as well as an overall financial burden nationwide. Chronic and mental health disease make up 90 percent of healthcare spending in the United States each year (CDC, 2023). Treatments, medications, and interventions for chronic disease are significant expenses for individuals, particularly those with multiple chronic diseases. Additional costs are incurred with health insurance premiums as well as lost productivity when individuals are unable to work or work in the same way due to chronic illness.

Family Considerations

Chronic disease can affect families in both financial and emotional ways. The burden of care on families is high and can increase financial burden if caregivers must lose work productivity to perform care duties. Additional effects on families include emotional worry and caregiver burnout. A family-centered approach to care may be beneficial, particularly in families providing much of the caregiving. Nursing actions may include advocating for respite care, providing education to the patient and family regarding the disease process, and providing support services to ease financial burden.

Environmental Considerations

Environmental considerations include factors associated with continued exposure to risk factors and positive and stable environments to promote well-being. This may involve addressing environmental determinants of disease, including risk factors such as smoking, alcohol use, and lifestyle habits. Other environmental determinants are housing stability, nutrition, food security, financial security, and physical safety or violence. Stressful events trigger heightened emotional states and may exacerbate symptoms of chronic disease or create a scenario of limited coping. For older adults and those with disabilities, environmental considerations must include whether an individual can live independently, in an assisted living facility, or in a long-term care facility. Living situations depend on each patient's specific abilities and safety. Nurses will help individuals cope with changes in living situations, such as moving from their family home, due to falling risk, to an assisted living facility.

Considerations of At-Risk Populations

Individuals in at-risk demographic groups may be at higher risk for chronic disease and have more difficulty accessing adequate care for chronic disease. Pregnant women and children may require increased support in obtaining healthy nutrition, accessing maintenance health care, and maintaining safe living situations. Older adults may require special care due to financial concerns, lack of support, fall and safety risks, and dementia. Veterans may have a higher risk for mental health disorders, suicide, PTSD, and chemical exposure–related diseases. Other at-risk demographic populations include individuals who:

- are unemployed
- are unhoused or have housing insecurity
- are uninsured or underinsured
- experience addiction
- experience food insecurity
- experience poverty

Due to a lack of resources, this individual may delay seeking treatment and enter the healthcare system only during a health crisis. When creating care plans, nurses must consider challenges these people face. By focusing on health promotion and disease prevention, nurses help prevent healthcare crises.

Ensuring Quality Health Care

Quality care is the responsibility of society, the individual, and the healthcare team. Collaborative teamwork is crucial in creating affordable, accessible health care for all. It is also important to focus care at an individual level to promote autonomy and discourage a sense of dependence. Quality health care must empower individuals to understand their disease and treatment plans, manage multiple disease states, and advocate for themselves to maintain the best quality of life and sense of well-being.

Therapeutic Regimens

Therapeutic regimens vary widely depending on the disease process, patient preferences, available services, and financial costs. Managing multiple chronic illnesses requires a more complex plan and more frequent follow-up and re-evaluation of the plan to maintain a positive trajectory in care. Nurses play a role in ensuring that patients fully understand their treatment plan, the purpose of treatments and medications, and expected outcomes. Nurses also are a link between healthcare providers and patients and work to coordinate appropriate specialty care and follow-up. Nurses are key in providing education regarding therapeutic plans in an understandable and clear way for patients. They are often the first to answer questions and explain patient changes and outcomes.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Informatics

Definition: Effectively apply appropriate technology to communicate, manage therapeutic regimens, and improve safety.

Knowledge: Nurses must recognize gaps in education or therapeutic regimen monitoring that may benefit from technology-based interventions. For example, an individual with difficult-to-control type 2 diabetes expresses concern about pain with finger sticks, trouble remembering to check her blood sugar, and erratic blood sugar levels throughout the day. The nurse knows the patient has been unable to tolerate many medications. The patient also expresses fear about the provider's recommendation for insulin therapy, because she is afraid of having low blood sugar while at work.

Skill: The nurse can relay the patient's concerns to the healthcare provider and advocate for technology-based continuous glucose monitoring (CGM). The nurse can help the patient understand the benefits of CGM in monitoring and improving the outcomes of her insulin regimen. The patient can forward blood sugar logs to the office and receive prompt feedback on adjusting her long-acting insulin.

Attitude: The nurse can present these technological-based options to the patient enthusiastically to promote better health, less hassle, and improve the healthcare provider's ability to adjust her medication regimen quickly and efficiently.

Enabling Self-Management

A key to promoting health and well-being is a focus on empowerment, autonomy, and self-management. The level of self-management varies greatly depending on the type of illness, but nurses can hone their ability to identify the level of self-management possible for everyone. For example, in young adults managing type 1 diabetes, nurses can empower their patients to make healthy lifestyle choices, proper nutrition, and safe insulin management to prevent long-term complications. For older adults with multiple chronic diseases, understanding their medication regimen and maintaining daily movement and nutrition to continue independent living creates a sense of autonomy. In older adults with severe and progressive dementia, providing small choices in food and encouraging self-hygiene encourages a continued sense of autonomy even when full supervision is required for safety.

Patient-Centered Care

Patient-centered care focuses on each individual's differences and how they experience chronic disease. Patients may have different choices regarding treatment and different views on lifestyle changes and quality of life. Regardless of a patient's choices, offering respect and acceptance is an important role of the nurse. Patient-centered care always involves the patient and incorporates their choices in treatment plans. Active listening ensures that patients are and feel heard and empowers them to take an active role in their health. This positively affects health outcomes overall, even in the face of chronic disease. A comprehensive approach to patient care varies from person to person but includes the same important aspects (Table 42.7).

	Patient 1	Patient 2
Disease history	31-year-old male diagnosed with type 2 diabetes during a routine screening	68-year-old male diagnosed with type 2 diabetes when he sought care for a foot wound
Lifestyle	• Does not exercise • Eats fast food for most meals delivered by a service • Lives with his fiancé • Spends 8–10 hours on his computer for work and recreation daily	• Does odd jobs • Eats at community meal centers • Fluctuates in housing security, sometimes camping or living with friends • Walks daily because he does not have a car
Healthcare access	• Gets yearly check-ups • Has comprehensive health insurance	• No health care for >10 years • No health insurance
Additional medical diagnoses	• Elevated low-density lipoprotein cholesterol, low high-density lipoprotein cholesterol • Joint pain • Obesity (body mass index of 40) • Plantar fasciitis	• Bipolar disorder • HTN • Kidney disease • Obesity (body mass index of 33)
Motivation	• Wants to feel better overall • Wants to get healthy so he can get married • Wishes to start a family	• Does not see himself following up regularly • Wants to avoid hospitalization • Wishes for health insurance
Preferences	• Enjoys technology and digital products • Has considered joining a gym • Will try any medication type to improve his health	• Enjoys being outdoors • Uses his phone only for important communication • Will only accept oral medications

TABLE 42.7 Patient-centered Care

	Patient 1	Patient 2
Family resources	• Discussed couples therapy and group exercise • Nutrition resources for shared meals	• No family support
Patient-centered care provided by the nurse	• Aggressive medication management to reduce blood glucose • Focus on healthy nutrition with fiancé • Involve significant other to promote wellness • Medical gym membership with guided health program • Offer detailed education to promote long-term health • Support group for type 2 diabetes • Use digital nutrition, medication, and movement tracking	• Connect with social worker to determine qualification for public health insurance • Focus medication and treatment on affordable oral options • Maintain flexibility in follow-up to help ensure compliance with medications • Offer education on monitoring for complications and managing current disease • Resources for obtaining stable housing

TABLE 42.7 Patient-centered Care

Managing Multiple Conditions

Multimorbidity is common in chronic disease. Managing multiple conditions is difficult for providers as well as patients. Interactions between medication and treatments and the risks and benefits of performing the treatment and beginning new medications must be considered. As noted, many chronic conditions may trigger other conditions or contribute to compounding symptoms. Managing multiple conditions requires coordination between healthcare providers and must consider patient preferences and abilities. A patient-centered approach considers that individuals have different conditions, take different medications, and choose different treatments.

Collaborative Management

Collaborative management of chronic disease includes physician specialists, nurses, and various other healthcare and ancillary team members (Table 42.8). Nurses often serve as team coordinators and patient advocate. Creating a collaborative team depends on the diseases present, patient preferences, financial resources, and availability of team members.

Disease Type	Collaborative Team Members
Cancer, depending on type	Geneticist Hospice nurse Massage therapist Mental health professional Nutritionist Oncologist Palliative care specialist Physical therapist Plastic surgeon Radiation oncologist Surgeon
Cardiovascular diseases	Cardiac rehabilitation nurse Cardiologist Cardiovascular surgeon Mental health professional Physical therapist Pulmonologist
Respiratory	Allergist Pulmonologist Respiratory therapist Speech therapist
Kidney	Cardiologist Dialysis nurse Home health nurse Mental health professional Nephrologist Occupational therapist Palliative care specialist
Cognitive	Mental health professional Neurologist Occupational therapist Physical therapist Social worker Speech therapist
Neurological	Mental health professional Neurodevelopmental psychologist Occupational therapist Physical therapist Social worker Speech therapist

TABLE 42.8 **Collaborative Management Teams**

Disease Type	Collaborative Team Members
Neuromuscular	Mental health professional Neurologist Neurosurgeon Occupational therapist Physical therapist Speech therapist
Metabolic	Endocrinologist Mental health professional Nutritionist Physical therapist
Immune	Infectious disease specialist Mental health professional Nutritionist Occupational therapist Physical therapist Rheumatologist

TABLE 42.8 Collaborative Management Teams

Nursing Care of Patients with Chronic Conditions

Nursing care of patients with chronic conditions encompasses care along the life span continuum from infancy through older adulthood. Patient-centered care is an essential component that links all aspects of nursing care for these individuals. Specific nursing actions must consider each patient's physical and functional abilities and how these change over time. Many chronic conditions require long-term medical management, including medication therapy. Nurses play a key role in helping patients manage these medication regimens to maintain the safety and efficacy of the treatment. As with all other nursing specialties, chronic disease management requires ongoing and patient-tailored education. Education is not a one-and-done nursing intervention but an ongoing and evolving process of helping patients manage and cope with chronic disease diagnosis, progression, treatment, and complications. Supportive care involves the emotional support of individuals dealing with chronic conditions. In addition, supportive care focuses on symptom management and improving quality of life rather than treating or changing the course of the disease.

Assessing Physical and Functional Status

Nurses play an important role in assessing physical changes that may signal the onset or progression of chronic conditions. Nurses perform various physical assessments depending on the hospital, outpatient, long-term care, or home care setting. These often are head-to-toe assessments during a hospital or long-term care facility admission. Head-to-toe assessments offer a baseline of current physical status and allow nurses, physicians, and other healthcare professionals to gauge changes in the patient's condition over time. This type of physical assessment includes inspection, auscultation, palpation, and measurement of vital signs. A targeted physical assessment will focus on documenting mobility, organ system abnormalities, sensory issues, and wounds and incisions.

Through a functional assessment, nurses aim to paint a picture of how individuals function in various life situations, such as self-care, activities of daily living, transportation, medication management, social interactions, and family roles. Understanding an individual's functional status allows nurses to gauge the need for specific support services for the individual and the family. Routine assessment of functional status allows nurses to make appropriate referrals to ancillary healthcare providers such as physical therapists, occupations therapists, respiratory therapists, and social workers.

Managing Medication Regimens

In the management of chronic conditions, medication management can be complex. Patients may need help understanding the function of their medications and managing the day-to-day regimen. The effectiveness and safety

of medication self-management depend on cognitive function, the complexity of the regimen, and the type of medications prescribed. Nurses are frequently required to explain the function of medications to patients. Nurses must explain the details in a way that each patient can understand. This may require written or visual communication; for others, it may simply be a verbal explanation. Understanding the complex interactions between medications and monitoring for medication side effects and interactions between multiple medications is also critical. Drug-drug interactions are common; however, sometimes, the benefit of the medication outweighs the risk of an interaction. This is when nurses monitor for adverse reactions and report them to the healthcare provider. Educating and encouraging patients to report any changes in their condition or how they feel is also essential. Nurses will need to teach medication administration for injectable medications, inhaler use, topical preparations, and other nonoral medications. Nurses must also watch for high-risk knowledge gaps, such as an individual needing help understanding the reason for a medication, the timing, or the fact that it must be taken consistently to provide effective results.

REAL RN STORIES

Closing the Gap with Medication Education

Nurse: Rosa, RN
Clinical setting: Outpatient Clinic
Years in practice: 8
Facility location: Austin, Texas

I've worked in an outpatient primary care clinic since becoming an RN. One of the best parts of my job is educating patients on their treatments and seeing relief on their faces when they gain understanding. One example I remember was a 22-year-old patient with environmental allergy-triggered asthma. She came into our clinic really worried about the new treatment from her allergy and asthma specialist. She couldn't get to their office, so she came in for advice. She said she had been using the inhaler as directed, but she lost the list of side effects and other information about the medication. After about a week of use, she started having a burning sensation in her mouth, and was experiencing whitish patches on her cheeks and tongue. She stated it seemed to be helping with her wheezing, but she was worried she was having a side effect of the medication. She stopped using the inhaler 2 days prior to her visit and had some recurrence of her wheezing. She said she had used another inhaler in the past without any problems. I reviewed her medication list and determined that her new medication was a budesonide formoterol inhaler twice daily.

I then asked her about her inhaler regimen at home. She stated she used it twice daily as directed and used her other albuterol inhaler as needed. I immediately recognized her knowledge gap, and after the healthcare provider evaluated and made a plan for treating thrush, or oral candidiasis, I gave her more information on medication safety. We discussed why this medication can cause this side effect and gave tips for preventing this in the future, including rinsing her mouth thoroughly after every use. She was relieved to know that she had not done something wrong and that she could continue to use the medication, because it was working well for her asthma.

Providing Education

Education encompasses all aspects of treatment and care for chronic illness. Nurses must rely on appropriate communication techniques tailored to each patient when providing education, to ensure the best possible reception of the information. Repeating the teaching multiple times may be necessary. A teach-back method is effective for teaching medication administration, the pathophysiology of the disease, and family teaching. Based on individual learning preferences, nurses may provide questions and answer discussions, handouts for visual assistance, and video learning to solidify learning.

Nurses providing education on chronic conditions must consider each individual's health literacy and the ability of an individual to understand and apply health-related information. The teach-back method allows patients to explain in their own words the information provided and demonstrate their ability to perform a medication administration such as insulin injection or inhaler use. Regardless of healthy literacy, the teach-back method gives patients an advantage in understanding their health conditions and treatments. The teach-back and show-me methods are crucial for patients with chronic conditions, due to the complex nature of these conditions and the common

multimorbidity present (AHRQ, 2024).

LINK TO LEARNING

Learn how to implement the teach-back method (https://openstax.org/r/77TeachBackMeth) with your patients.

Supportive Care

The supportive care nurses provide focuses on patient needs that may be directly associated with or triggered by their disease. These supportive measures focus on physical or emotional needs. Supportive measures address disease symptoms, side effects of medications, and social and emotional aspects of coping with a disease that the treating healthcare provider may not typically address. Supportive care involves a way of providing care as well as specific actions. By striving to provide a supportive atmosphere of care, nurses can exercise compassion, build confidence, identify areas for growth, and create a sense of safety. Specific actions that nurses may perform in providing supportive care include using encouraging words and actions, using active listening, engaging in educational dialogue, and collaborating with healthcare providers to provide patient-centered care (PCC).

Summary

42.1 Characteristics of Disability

The terms disability and impairment are often used interchangeably. However, most definitions explain impairments as physical or mental deficits or differences that can be seen or perceived. Disability relates to how impairments affect an individual's ability to function in their home and community environment. Physical, cognitive, and congenital impairments often result in disabilities. Disabilities are the consequence of impairments that limit the ability of individuals to perform physical actions, cognitive processes, learning tasks, or communication in expected ways. Physical disabilities may arise at birth, develop over time, or occur as a result to an acute injury. Cognitive, intellectual, developmental, and psychiatric impairments result in a wide variety of disabilities. Disabilities are common at all ages, but the type of disability varies during the life span. Although congenital and developmental disabilities are often diagnosed in childhood, the effects of these disabilities on functioning persist throughout an individual's life. Older adults commonly develop disability related to mobility and sensory changes associated with disease and the aging process. These disabilities affect an individual's daily functioning at home, school, and in the wider community. Disabilities can be congenital, progressive, or acquired, and a person's response to disability depends on factors such as the severity of the disability, available support, and grief response.

42.2 Healthcare Approach to Disability

Models of disability are essential for framing patient-centered care planning and creating an awareness of how healthcare professionals and the broader community view disability. These models relate to the morals, medical care, social interactions, functional abilities, rehabilitation, social, and biopsychosocial aspects of caring for individuals with disabilities. Although each model can be understood independently, understanding the interplay between these concepts is key to providing individualized care. Individuals with disabilities experience a wide range of barriers, from physical difficulty accessing a building to the inability to communicate effectively with their healthcare provider. By recognizing barriers, nurses can eliminate physical obstacles and social bias in their care setting. Helping individuals access affordable care, navigate insurance requirements, and feel accepted and included are all ways that nurses can ensure quality health care for people with disabilities.

42.3 Chronic Disease and Chronic Illness

Chronic conditions are prevalent in our society. The most prevalent chronic diseases in the United States are CVD (50 percent), obesity (42 percent), and arthritis (25 percent). Other prevalent chronic diseases include diabetes, cancer, epilepsy, and pain. Chronic diseases encompass many disorders that can be identified by specific medical criteria. Chronic illness, on the other hand, describes the patient's experience with a chronic condition, including symptoms, time frame, and treatment responses. It is also common for individuals to have multiple chronic conditions simultaneously. Often, symptoms may overlap, and different disorders may contribute to the development of other chronic conditions. Chronic conditions can develop in any organ system, ranging in severity from mild to life-threatening. Chronic conditions last longer than 1 year and typically have ongoing symptoms that require continued medical monitoring or treatment. Chronic conditions may be genetic or acquired and may progress and change over a person's life span. The majority of the acquired chronic conditions, such as heart disease, type 2 diabetes, obesity, and high blood pressure, are associated with a very short list of risk factors: smoking, excessive alcohol use, and a sedentary lifestyle. Recognizing symptoms of common conditions is crucial for nurses in day-to-day practice. Awareness of rare disorders will improve the nurse's ability to identify concerning symptoms early in the course of the disease.

42.4 Healthcare Approach to Chronic Conditions

Nurses must consider many aspects of an individual's circumstances when caring for chronic conditions. Keeping in mind ethical considerations is crucial for providing patient-centered care. At-risk populations include pregnant women, children, older adults, and those with housing instability. These individuals may require more creative and individualized care based on their specific support needs. All individuals experience the effects of social factors, financial status, and environmental circumstances. These factors directly affect outcomes related to chronic conditions. Nurses must always consider family dynamics during patient care and include family in care planning if appropriate and preferred by the patient. Physical and functional assessments set the stage for nursing interventions focused on chronic disease management. Assessments may be head to toe or focused on specific

concerns. These assessments must occur periodically to monitor for change over time. Education about therapies, medications, progression, and expectations is an ongoing process in chronic disease care. Nurses will also collaborate with other healthcare providers and ancillary specialties in providing supportive care. Supportive care addresses disease management and symptoms and consequences of the disease process.

Key Terms

ableism a concept that explains the negative reactions that individuals without a disability have in response to encountering individuals with a disability

accommodations adjustments and modifications in the physical environment to meet the needs of individuals with disabilities

acquired resulting from exposure to a toxin or pathogen such as HIV

acquired disability physical, cognitive, sensory, or psychological impairment that occurs after birth, typically as a result of injury, illness, or environmental factors

activity level one's ability to perform specific actions

Americans with Disabilities Act (ADA) initially signed in 1990, protects the rights of individuals with disabilities and prescribes requirements for appropriate accommodations

autoimmune disorder condition that arises from the body's immune system attacking and damaging its cells and organs

biopsychosocial model of disability focuses on the interplay between medical diagnoses and associated impairments and societal barriers

chronic disease a state of being that includes having a biomedical disease for at least 1 year

chronic illness a condition requiring medical attention or limiting usual daily activities for greater than one year

cognitive disability limitation in cognitive functioning and adaptive behavior stemming from disorders in brain functioning

communicable disease disease passed from person to person

comorbid medical conditions multiple medical conditions are simultaneously present

congenital a condition present at birth

developmental disability condition due to an impairment in learning, language, behavior, or physical function

disability a mental or physical condition that limits an individual's ability to engage in daily activities in a typical way

discrimination actions or beliefs that show an unjust distinction between people on the grounds of sex, age, ethnicity, or disability

disease a disorder within the body that is identifiable as a medical condition

external bias based on societal attitudes and cultural beliefs but also affects how others treat individuals

functional impairment restriction or difficulty in performing activities effectively due to the loss of functioning in a body part

functional model of disability a cause-and-effect relationship between a physical or cognitive deficit and limitations in daily function

illness the perceived experience of a disorder within the body

immunodeficiency disorder a condition or disease caused by a weakened immune system impairs the body's ability to fight off disease or infection

impairment loss of one's physical or mental ability that inhibits usual or expected functioning **Individuals with Disabilities Education Act (IDEA)** enacted in 1975, requires that all children with disabilities receive appropriate and free education through the public education system

intellectual disability neurodevelopmental condition characterized by significant limitations in intellectual functioning and adaptive behavior that manifest during the developmental period

internal bias individual thinking pattern that affects how an individual person views and treats others

medical jargon technical medical language

medical model of disability disability as a consequence of a trauma, illness, or congenital health condition that is out of the control of the individual

moral model of disability a long-standing belief pattern that explains disability as a defect in functioning related to the individual's moral character

multimorbidity co-occurrence of two or more chronic disease states

overactive immune disorder when the immune system develops a hyperresponse to normally harmless environmental substances
participation level often refers to a person's ability to function in the wider community
physical disability any condition that limits a person's physical functioning or mobility
prejudice when an individual makes a judgment or opinion of a person with a disability before obtaining knowledge of their circumstance
presbycusis age-related hearing loss
presbyopia loss of near vision
psychiatric disability condition characterized by mental health challenges or disorders that significantly affect an individual's cognitive, emotional, or behavioral functioning, leading to difficulties in daily life and social interactions
recovery receiving addiction treatment and remaining drug-free
rehabilitation returning to a previous state of health
Rehabilitation Act legislation that protects individuals against discrimination based on disability at any federally funded facility or any facility receiving federal financial assistance
rehabilitation model of disability conceptualization of disability as a single impairment or a collection of impairments or deficits experienced by an individual that can be improved through rehabilitation
sensory disability limitation related to sensory processing and integration, affecting not only the reception but also the interpretation and response to sensory stimuli, potentially affecting various aspects of daily functioning
sensory impairment any difficulty an individual has with one of their five senses
social model of disability disability in the context of the individual's physical and social environment
stereotypic attitude fixed, oversimplified, and generalized perception of individuals in a specific demographic group, stemming from internal and external biases
stigma negative or incorrect belief about individuals with disabilities
structural impairment limitation experienced in specific body parts
underinsured lacking adequate health insurance

Assessments

Review Questions

1. Identify the difference between disability and impairment.
   a. Impairment is the functional restriction of ability; disability is the restriction of ability within an expected range and in a specific environment.
   b. Impairment is related to physical dysfunction; disability refers to cognitive dysfunction.
   c. Impairment can be cured; disability cannot be cured.
   d. Impairment does not change over time; disability may progress over time.

2. A nurse is developing a care plan for a patient with a significant vision impairment. What would be most appropriate question for determining whether the patient has an associated mobility disability?
   a. Have you had any recent falls?
   b. Where is your walker?
   c. Have you followed up with your eye doctor recently?
   d. Do you experience headaches?

3. The incidence of disability in the adult U.S. population is _____ percent, with the rate being even higher at _____ percent in older adults.
   a. 50%, 60%
   b. 20%, 50%
   c. 25%, 40%
   d. 35%, 40%

4. A home health nurse is doing an initial assessment for an older adult living independently. Because the patient uses a wheeled walker, due to severe rheumatoid arthritis, the nurse knows the assessment must consider possible challenges for the patient. What activities would be critical for the nurse to assess?

a. lifting, carrying objects, navigating stairs, eating
b. walking, reading, eating, lifting
c. navigating stairs, reading, eating, walking
d. navigating stairs, carrying objects, gripping, walking

5. The nurse cares for a patient with Down syndrome. The nursing care plan should include considerations that address what type of disability?
a. mobility
b. psychiatric
c. developmental
d. acquired

6. An adult patient is admitted to a rehabilitation center after sustaining a TBI in a car accident. His neurologist expects that rehabilitation will help the patient make continual improvement in his functioning as he works toward regaining function. What models of disability is the neurologist working under?
a. medical, social
b. biopsychosocial, medical
c. social, rehabilitation
d. medical, rehabilitation

7. What model of disability considers the underlying cause of disability, how the individual functions in society, and the effect of disability on the individual patient?
a. rehabilitation model
b. medical model
c. biopsychosocial model
d. social model

8. What communication technique indicates the nurse is not considering an individual's hearing impairment?
a. The nurse is facing the computer screen during the interview.
b. The nurse takes care to speak clearly.
c. The nurse repeats the instructions several times.
d. The nurse asks if the hearing aids are working correctly when she notices the patient has trouble hearing.

9. A patient's family member asks what legislation protects her son from discrimination when receiving health care. The nurse knows that the _____ protects individuals from discrimination in facilities receiving financial assistance from the federal government.
a. ADA
b. IDEA
c. Department of Justice
d. Rehabilitation Act

10. A nurse notices that her coworker makes negative comments about American Indian patients and that this coworker tries to avoid providing care for these specific patients. The nurse recognizes that this co-worker may be expressing which of the following?
a. prejudice
b. structural barrier
c. stigma
d. blaming

11. The nurse cares for a patient with obesity and type 2 diabetes. The patient is struggling with fatigue, social withdrawal, negative self-image, and anxiety. What does the nurse recognize that in addition to these chronic biomedical diseases, this patient is experiencing?

a. arthritis
b. pain
c. disease progression
d. chronic illness

12. Chronic conditions are defined by persistent symptoms or biomedical diseases that require ongoing medical treatments and interventions for what minimum length of time?
a. 3 months
b. 2 years
c. 1 year
d. 6 months

13. The vast majority of chronic conditions result from a few risk factors. What risk factors are associated with the vast majority of chronic conditions?
a. smoking, poor nutrition, injuries
b. smoking, sedentary lifestyle, poor nutrition
c. smoking, sedentary lifestyle, injuries
d. smoking, injuries, excess alcohol intake

14. What is an essential concept in understanding chronic conditions of the immune system?
a. Viruses cause most chronic immune conditions.
b. Immune deficiency and an overactive immune system result in disorders with similar symptoms.
c. Autoimmune disorders result from the body's immune system attacking its cells and organs.
d. Immune disorders are easily recognizable by a typical set of symptoms.

15. In what body regions do endocrine organs reside?
a. chest, abdomen, brain, neck
b. chest, neck, brain, and bone marrow
c. neck, brain, bone marrow, pelvis
d. brain, abdomen, pelvis, spleen

16. What concept of ethics in chronic disease care ensures patients maintain control in their care and treatment?
a. autonomy
b. beneficence
c. nonmaleficence
d. multimorbidity

17. How can a nurse advocate for family members of patients with chronic conditions?
a. by taking over care
b. by referring to a specialist
c. by advocating for respite care
d. encouraging long-term care placement

18. What is an essential concept in helping patients manage multiple chronic conditions?
a. The nurse must always include the family in decision-making.
b. The nurse understands that the specialist will provide the medication and treatment education.
c. The nurse makes a referral to a specialist for a patient with borderline HTN but not an additional disorder.
d. The nurse can explain the overlap among chronic diseases, causes, and treatments.

19. A functional assessment includes an evaluation of what factor(s)?
a. vital signs
b. depression screening

c. lung sounds
d. mobility

20. Nurses can easily create a patient-centered and supportive care atmosphere by including what actions?
a. exercise compassion, identify areas for growth, provide education
b. create a sense of safety, use active listening, document vital signs
c. update the medication list, build confidence, use encouraging words
d. explain medication interactions, identify areas for growth, practice beneficence

Check Your Understanding Questions

1. Describe physical and communication accommodations required by the ADA.

2. List mental health disorders that can progress to a state of disability.

3. Describe how transportation may be a barrier for individuals with disabilities.

4. Describe the organ systems and functions of the endocrine system. Include a description of common chronic disorders arising from the endocrine system.

Reflection Questions

1. Explain the difference between a congenital and an acquired disability.

2. Explain how intellectual disabilities such as ADHD, dyslexia, and other learning differences may affect an individual.

3. Explain how healthcare providers may inadvertently present bias during patient interactions.

4. Explain why the rehabilitation model of disability may not apply to individuals with progressive or congenital disability.

What Should the Nurse Do?

1. During a routine wellness checkup for a 6-year-old child, the nurse observes that the child's speech is difficult to understand and expresses fear as expected for a much younger child. How should the nurse begin conversing with the parent to gather more information about her communication and behavior functioning?

2. A nurse is assigned to discharge a patient after a heart attack. The patient and her husband have hearing and vision impairments. The cardiologist explained the discharge medication, but the nurse noticed that the patient and her husband looked confused. How can the nurse provide patient-centered education before discharge?

3. A nurse cares for an 18-year-old patient recently diagnosed with type 2 diabetes. At discharge, the patient remains hesitant about checking her blood sugar and administering insulin injections. She asks her mom to help each time. How can the nurse help?

4. A 72-year-old patient presents to the outpatient clinic for a follow-up of her HTN, arthritis, and insomnia. The patient states that her diseases are stable but she is concerned about persistent diarrhea. What is an initial step the nurse should take?

5. The nurse identifies that the patient is taking supplements in addition to her prescription medications. She is taking an over-the-counter sleep aid with magnesium. What is the nurse's next step?

Competency-Based Assessments

1. Outline the nurse's role in applying the biopsychosocial model to improve patient care.

2. Develop a presentation for a new nurse conference explaining how nurses can support individuals with neurodevelopmental disorders, particularly ASDs that have a wide range of presenting symptoms and severity.

3. Develop a sample patient-nurse dialogue and focused assessment guide using the STOP-BANG questionnaire to guide an assessment of sleep apnea risk
4. Explain how self-management leads to patient-centered care.

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CHAPTER 43
Clinical Judgment and Critical Thinking

FIGURE 43.1 Critical thinking in nursing is a goal-oriented, outcome-directed thought process used to improve patient care outcomes. (credit: modification of work "220202-A-QC081-993.JPG" Army Spc. Logan Ludwig/Joint Base San Antonio, Public Domain)

CHAPTER OUTLINE

43.1 Clinical Judgment Measure Model
43.2 Developing Critical Thinking
43.3 Unfolding Case Study Dissection

INTRODUCTION Picture this: You're a new graduate nurse fresh off orientation on a critical care unit. You get report on two of your patients, one of whom is on a ventilator after a head injury, and the other is being treated for heart failure. The nurse giving you report mentions that the patient with heart failure has been receiving a large dose of furosemide, a diuretic medication, and has been having some irregular heartbeats, according to the monitor. Reflecting on your nursing knowledge, you remember that abnormal potassium levels can affect the heart's rhythm, so you pull up the patient's chart to see what their potassium level is. The potassium level is very low, likely from the high dose of diuretics being administered. You quickly get in contact with the treating clinician to ask for a potassium replacement and regulate the patient's levels back to normal. Had you not made this connection, the patient could have experienced cardiac arrest or other life-threatening symptoms related to their low potassium level. You used your nursing knowledge to make a clinical judgment call that most likely saved your patient's life. The ability to critically think and exhibit clinical judgment in practice are imperative skills for nurses to have. This chapter explores the shift in nursing practice and education that is occurring currently to better prepare new graduates for situations like this.

43.1 Clinical Judgment Measure Model

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Identify the purpose for development of the Clinical Judgment Measurement Model (CJMM)
- Explain how to apply the Clinical Judgment Measurement Model (CJMM) to the nursing practice

Historically, nursing was often viewed as a "task-oriented" career, meaning that nurses were to take orders from physicians without question and carry out nursing tasks. These tasks were usually simple, such as bed linen changes, helping patients use the toilet, and providing hygiene care. However, the profession of nursing has evolved into a more complex, autonomous career over the past several decades. Nurses now use **clinical judgment**, which is the thought process that allows nurses to arrive at a conclusion, based on objective and subjective information about a patient, to achieve positive patient outcomes. Many times, nurses are the care providers tasked with making clinical decisions that will significantly affect the lives of their patients. In recent years, nursing education has also evolved to better train nurses to critically think and use clinical judgment in practice. To achieve this, the Clinical Judgment Measurement Model (CJMM) was developed. This model allows nurse educators to teach, assess, and measure the development of clinical judgment skills of nursing students. It assists nursing students to connect knowledge learned in the classroom to provide exceptional clinical care in practice. This model is the new foundation for nursing critical thinking and skill development and is discussed in more detail throughout this chapter.

Purpose for Development of the CJMM

Before development of the CJMM, there was not a good way to measure the clinical judgment and decision-making skills of nursing students. Developing these skills was a priority focus of most nursing programs, but there was no tangible way to measure it to ensure it was being taught effectively. This was the basis for the development of the CJMM. Researchers at the National Council of State Boards of Nursing (NCSBN) used nursing literature and research studies, in combination with data analysis and input from nursing students, to develop the CJMM. This model is used not only as a teaching tool within nursing school curricula, it is also used as a guiding framework for the development of new types of questions on the National Council Licensure Examination (NCLEX) to assess nursing student's clinical judgment and critical thinking skills. By using the CJMM, nurse educators can be more confident that they are preparing nursing students to enter practice with a high level of critical thinking and the ability to make sound clinical judgments when caring for their patients. It also provides students with a structured approach for decision-making, improves students' decision-making, and supports quality and safety.

LINK TO LEARNING

You can learn more about the new NCLEX examination (https://openstax.org/r/77NCLEXexam) that incorporates concepts from the CJMM and get prepared for test day.

Comparing Different Nursing Process Models

Before development of the CJMM, the nursing process was "ADPIE," which stands for Assessment, Diagnosis, Planning, Implementation, and Evaluation. This nursing framework was developed in the 1950s and continues to be used in some capacity today, though most nursing schools have replaced it with the CJMM, which further expands the nursing process into more measurable components. A description of each of the steps of the original nursing framework is given in Table 43.1.

Steps	Description
Assessment	• Data can also be collected from electronic health records. • Data collection (both subjective and objective) • Data are collected from the patient directly and/or from family and caregivers in addition to physical assessment of the patient performed by the nurse.
Diagnosis	• Formulation of a nursing diagnosis • The International North American Nursing Diagnosis Association maintains a list of nursing diagnoses that can be used to describe a patient's situation. • Note that nursing diagnoses are separate from medical diagnoses; for example, a patient with a medical diagnosis of heart failure might have a nursing diagnosis of "decreased cardiac output."
Planning	• Goals and patient outcomes are developed. • Goals should be patient specific and mutually agreed upon with the nurse and patient. • Goals should be "SMART," meaning they are specific, measurable, attainable, realistic, and timely. • Nursing care plans are developed to ensure that care provided will help achieve patient goals.
Implementation	• Actions by the nurse • Carrying out the nursing interventions planned in the previous step (e.g., administering medications)
Evaluation	• Reassess patient after interventions are provided. • Determine whether patient goals have been met and if and how care plan needs to be revised.

TABLE 43.1 Steps of the Nursing Process

Using the nursing process has many benefits for nurses, patients, and other members of the healthcare team. The benefits of using the nursing process include:

- decreases omissions and duplications
- encourages collaborative management of a patient's healthcare problems
- identifies a patient's goals and strategies to attain them
- improves patient safety
- improves patient satisfaction
- increases the likelihood of achieving positive patient outcomes
- promotes quality patient care
- provides a guide for all staff involved to provide consistent and responsive care saves time, energy, and frustration by creating a care plan or path to follow

LINK TO LEARNING

Learn more about the CJMM (https://openstax.org/r/77CJMM) to explore new ways of testing clinical judgment in nursing as part of the NCLEX.

Application of the CJMM to Nursing Practice

There are several layers to the CJMM framework. Layer 0, at the top, is the broadest layer and the layers get more specific as the reach the bottom at layer 4. As nurses move through layers 2 through 4, they are working through a cognitive process that helps them make clinical decisions for patients, using clinical judgment to do so (as represented by the broad layers 0 and 1 at the top of the model). The more specific layers (2–4) are discussed in more detail in the following sections.

Form, Refine, and Evaluate Hypotheses

Layer 2 of the CJMM is composed of three different parts: form hypotheses, refine hypotheses, and evaluation. The nurse uses specific patient assessment findings ("cues") to develop hypotheses, or educated guesses, about the patient's condition. The nurse uses the cues in combination with their foundational clinical knowledge to determine potential explanations for the patient's situation. As more cues are assessed and more information about the patient is obtained, the nurse can refine their initial hypothesis and determine its accuracy. As the nurse moves through the steps in layers 3 and 4 to make clinical decisions, they are also checking in with the parts of this layer to continuously re-evaluate the plan of care. As you will read in the next section, each of the cognitive skills in layer 3 corresponds to a component of layer 2. As the nurse assesses and cares for a patient, they can determine whether their actions have satisfied the goals of care. If the goals are not satisfied, the nurse can move again through the steps in layers 3 and 4 to revise the care plan and make different clinical decisions that, hopefully, will assist in better meeting the patient's needs.

Application of Cognitive Skills

Layer 3 of the CJMM is composed of six steps that involve a repetitious process that improves with time and nursing experience. Eventually, these steps become second nature to a more experienced nurse, but they serve as a framework for nursing students and early-career nurses to use as a more deliberate guide for making clinical decisions. These six cognitive skill steps (also known as clinical judgment functions) are described in more detail in Table 43.2.

Cognitive Skill	Description
Recognize cues	• Assessment data are collected. These can be subjective from the patient or family or objective from physical assessment performed by the nurse. • Data can also be collected from the electronic health record. • Nurse uses these assessment data to look for cues that may be indicative of what is going on with the patient. • Nurse tries to determine what information is relevant, what is the most important, and if there is anything that is of immediate concern.
Analyze cues	• Nurse takes the assessment data collected from the previous step and considers how they relates to the patient's history and current situation. • Nurse considers whether the cues collected in the previous step are consistent with the patient's current condition, if any of the cues are immediately concerning, and if there are additional data that need to be collected. • Nurse attempts to link recognized cues to the patient's clinical presentation and establish probable patient needs, concerns, or problems.
Prioritize hypotheses	• Nurse examines all possibilities for the patient's situation based on collected cues. • Nurse determines which possibilities are most likely, which are most serious, and which are the highest priority to treat first. • Priorities of care are established on the basis of the patient's current health problems and cues assessed in the first two steps.

TABLE 43.2 Cognitive Skills in the CJMM

Cognitive Skill	Description
Generate solutions	• Using hypotheses for the patient's condition from the previous step, nurse plans specific actions to achieve goals and outcomes. • Actions can be classified as "indicated," "contraindicated," or "nonessential" to help determine priority actions. • During this step, the nurse should identify outcomes that are expected with each nursing action and plan care that addresses patient's current needs.
Take action	• Nurse performs interventions, which may be further assessment, monitoring, teaching, or actual interventions, depending on the patient's needs. • Actions are based on nursing knowledge, priorities of care, and planned outcomes to achieve optimal health outcomes for the patient.
Evaluate outcomes	• Nurse reviews patient response to actions and interventions. • Nurse compares observed outcomes with expected outcomes to determine if the plan of care needs to be revised.

TABLE 43.2 **Cognitive Skills in the CJMM**

Expected Responses and Behaviors

For each cognitive skill, there are specific responses and behaviors the nursing student is expected to exhibit. When expected responses are performed by the student, it indicates that the cognitive skill has been adequately demonstrated, thus the student is using clinical judgment effectively. Expected responses and behaviors by the student that would indicate they can successfully recognize cues include recognizing assessment data pertinent to the patient's condition, identifying subtle changes in the patient's condition, and using knowledge and experience to thoroughly assess the patient.

To analyze cues, it is expected that the student can recognize abnormal assessment findings, anticipate patient needs, identify potential complications that may arise, and begin to prioritize patient problems. When prioritizing hypotheses, the student nurse should be able to organize data and findings based on patterns and trends and prioritize the patient's goals and needs. During the generate solutions (planning) step, the student nurse is expected to collaborate with the interprofessional care team to establish goals of care, prioritize nursing interventions based on the patient's needs, and continuously modify the plan of care based on patient condition changes. When the student begins to the take action step, it is expected that they will accurately perform nursing interventions based on previously established patient priorities and needs, document care appropriately, and provide education to the patient and family. When evaluating outcomes, expected behaviors include reassessing the patient's condition to determine whether goals and outcomes have been met, evaluating how effective nursing interventions were, and modifying patient goals and priorities as needed.

Consideration of Factors

While using clinical judgment to make practice decisions, it is important to do so within the context of environmental and individual factors. These factors are specific to each patient and help the nurse make informed, personalized decisions.

Environmental Factors

Environmental factors are things within the external environment that may affect the clinical decision-making process. These factors include:

- culture (e.g., diet, religion, language, literacy)
- individual medical information, including medical history, laboratory and diagnostic test results, intake and output, medications, and current treatments
- patient demographics

- resources (e.g., supplies, staffing, open beds)
- setting (e.g., hospital, long-term care, community health center)
- situational factors (e.g., safety considerations, available equipment, surroundings)
- time pressure related to emergent orders and changes in patient condition

CULTURAL CONTEXT

Cultural Context within the CJMM

Cultural factors must be considered as part of the clinical judgment process. Without this context, it may be difficult to ascertain the cause of the patient's condition. For example, in some cultures, a vegetarian diet is common. In the context of this factor, the nurse must consider that a lack of protein and vitamin B12 may be the cause of certain medical issues within this population. Although considering cultural factors is important, it is even more important not to generalize information about cultures, because this can border on perpetuating stereotypes. There is a difference between generalizing information about all members of a population versus asking questions about the patient's culture to get specific information that can help the nurse make informed clinical decisions.

Individual Factors

Individual factors that must be considered during the clinical judgment process are more related to the nurse than the patient. These factors include:

- cognitive load of the nurse (e.g., demands, job stress, problem solving skills, memory)
- nurse characteristics, including attitudes, prior experiences, amount of nursing experience
- nurse specialty, knowledge, and skills

REAL RN STORIES

Floating to Different Units: Considering the Nurse's Experience

Nurse: Gabby, BSN
Clinical setting: Medical-surgical unit
Years in practice: 3
Facility location: Small community hospital in rural Georgia

After clocking in for my shift, I was notified by the charge nurse that I would be floating to a different unit for the night. She told me I would need to go to the labor and delivery unit to help out because there were several patients being admitted who would be delivering babies that night. I had only ever worked on a medical-surgical unit, so I expressed that I was concerned and uncomfortable taking care of this patient population. The charge nurse shrugged her shoulders and informed me I was floating to the unit anyway.

Once I got to the unit, the labor and delivery charge nurse told me I would be taking care of a patient who had just delivered a baby 2 hours ago. I again expressed my discomfort, because I had never taken care of postpartum mothers or babies. The charge nurse seemed surprised by this and stated, "I was told they were sending down a nurse with obstetrics experience. Let me make a call real quick."

When the charge nurse came back from making her phone call, she informed me that there had been a mistake and a different nurse with obstetrics experience was supposed to float to the unit, not me. I breathed a huge sigh of relief and headed back to my home unit, thankful that I advocated for myself and the patients.

43.2 Developing Critical Thinking

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Analyze the types of thinking used in nursing
- Recognize when to use the different types of thinking in nursing
- Explore the application of knowledge to thinking in nursing
- Appy Critical Thinking Indicators (CTIs) to decision making

Thinking is something we usually do subconsciously, because we are not usually "thinking about thinking." However, with the ever-increasing autonomy being afforded to nurses, there is also an increased need for nurses to be able to critically think effectively and intentionally. Being able to critically think helps nurses' problem solve, generate solutions, and make sound clinical judgments that affect the lives of their patients. Keep reading to learn more about how nurses use critical thinking in practice and how you can develop your own critical thinking skills.

Types of Thinking Used in Nursing

Nurses make decisions while providing patient care by using critical thinking and clinical reasoning. In nursing, **critical thinking** is a broad term that includes reasoning about clinical issues such as teamwork, collaboration, and streamlining workflow." On the other hand, **clinical reasoning** is defined as a complex cognitive process that uses formal and informal thinking strategies to gather and analyze patient information, evaluate the significance of this information, and weigh alternative actions. Each of these types of thinking is described in more detail in the following sections.

Cognitive Thinking

The term **cognitive thinking** refers to the mental processes and abilities a nurse uses to interpret, analyze, and evaluate information in their practice. Basically, it encompasses how nurses think about the practice decisions they are making. Cognitive thinking and critical thinking go hand in hand because nurses must be able to use their knowledge and mental processes to devise solutions and actions when caring for patients. Using critical thinking means that nurses take extra steps to maintain patient safety and do not just follow orders. It also means the accuracy of patient information is validated and plans for caring for patients are based on their needs, current clinical practice, and research. Critical thinkers possess certain attitudes that foster rational thinking:

- confidence: believing in yourself to complete a task or activity
- curiosity: asking "why" and wanting to know more
- fair-mindedness: treating every viewpoint in an unbiased, unprejudiced way
- independence of thought: thinking on your own
- insight into egocentricity and sociocentricity: thinking of the greater good and not just thinking of yourself. Knowing when you are thinking of yourself (egocentricity) and when you are thinking or acting for the greater good (sociocentricity)
- integrity: being honest and demonstrating strong moral principles
- intellectual humility: recognizing your intellectual limitations and abilities
- interest in exploring thoughts and feelings: wanting to explore different ways of knowing
- nonjudgmental: using professional ethical standards and not basing your judgments on your own personal or moral standards
- perseverance: persisting in doing something despite it being difficult

Cognitive thinking is significant to nursing because it provides a foundation on which nurses can make rapid and accurate decisions in clinical practice. Nurses must be able to think quickly and make informed decisions to promote optimal patient outcomes.

Effective Thinking

To make sound judgments about patient care, nurses must generate alternatives, weigh them against the evidence, and choose the best course of action. The ability to clinically reason develops over time and is based on knowledge and experience. Inductive and deductive reasoning are important critical thinking skills. They help the nurse use clinical judgment when implementing the nursing process. Effective thinking in nursing involves the integration of clinical knowledge and critical thinking to make the best decisions for patients. For example, if a nurse was caring

for a patient who presents with hypertension and new-onset left-sided weakness, it is important that the nurse be able to quickly consider potential causes for the weakness and implement immediate stroke protocols. Without the ability to critically think, the nurse may overlook the weakness as being unrelated to the hypertension and not consider the possibility of stroke, leading to a poor patient outcome. Thus, it is imperative that nurses develop effective thinking skills.

Inductive Reasoning

The term **inductive reasoning** involves noticing cues, making generalizations, and creating hypotheses. Cues are data that fall outside of expected findings and give the nurse a hint or indication of a patient's potential problem or condition. The nurse organizes these cues into patterns and creates a generalization. A **generalization** is a judgment formed on the basis of a set of facts, cues, and observations and is similar to gathering pieces of a jigsaw puzzle into patterns until the whole picture becomes clearer. On the basis of generalizations created from patterns of data, the nurse creates a hypothesis regarding a patient problem. Remember, a **hypothesis** is a proposed explanation for a situation. It attempts to explain the "why" behind the problem that is occurring. If a "why" is identified, then a solution can begin to be explored. No one can draw conclusions without first noticing cues. Paying close attention to a patient, the environment, and interactions with family members is critical for inductive reasoning. As you work to improve your inductive reasoning, begin by first noticing details about the things around you. Be mindful of your five primary senses: the things that you hear, feel, smell, taste, and see. Nurses need strong inductive reasoning patterns and be able to act quickly, especially in emergency situations. They can see how certain objects or events form a pattern (or a generalization) that indicates a common problem.

Consider this example: A nurse assesses a patient who has undergone surgery and finds the surgical incision site is red, warm, and tender to the touch. The nurse recognizes these cues form a pattern of signs of infection and creates a hypothesis that the incision has become infected. The provider is notified of the patient's change in condition, and a new prescription is received for an antibiotic. This is an example of the use of inductive reasoning in nursing practice.

Deductive Reasoning

Another type of critical thinking is **deductive reasoning**; it is referred to as "top-down thinking." Deductive reasoning relies on using a general standard or rule to create a strategy. Nurses use standards set by their state's Nurse Practice Act, federal regulations, the American Nursing Association, professional organizations, and their employer to make decisions about patient care and solve problems.

Think about this example: On the basis of research findings, hospital leaders determine patients recover more quickly if they receive adequate rest. The hospital creates a policy for quiet zones at night by initiating no overhead paging, promoting low-speaking voices by staff, and reducing lighting in the hallways. The nurse further implements this policy by organizing care for patients that promotes periods of uninterrupted rest at night. This is an example of deductive thinking, because the intervention is applied to all patients regardless of whether they have difficulty sleeping or not.

Identify the Purpose of Thinking

Rationalizing the purpose of thinking is probably not something you do often, but it is the foundational first step in critical thinking. To effectively use critical thinking in practice, the nurse must first identify the purpose of thinking. For example, the nurse is caring for a patient who presents with fever, tachycardia, and shortness of breath. The patient also has an open, infected wound on the left foot that is not healing. The nurse must recognize that the patient is exhibiting signs and symptoms that may be indicative of an underlying problem. At this point, the nurse must be able to identify that the purpose of thinking with regard to the patient is to consider what might be happening with the patient and formulate a plan of care. This begins the process of critical thinking, which involves several steps: thinking ahead, thinking in action, and reflection on thinking.

Thinking Ahead

Thinking ahead in nursing involves considering what may be going on with the patient to anticipate potential outcomes and complications that may arise. Remember competent nurses are proactive versus reactive. Reactive nursing is letting situations arise and then responding to the change, but proactive nursing is recognizing cues behaviors and patterns that are leading up to a complicated event. Additionally, the nurse will formulate goals of

care and must try to anticipate specific needs the patient will have. Considering the patient discussed in the preceding paragraph, the nurse should begin the process of thinking ahead about potential outcomes and complications. The nurse may hypothesize that the patient is starting to develop sepsis from the open wound on the foot so severe sepsis and/or septic shock could be a complication to begin preparing for. The nurse thinks ahead about goals of care for the patient and determines that wound care to prevent infection spread and sepsis is the priority goal at this time.

Thinking in Action

Thinking in action encompasses the thought processes occurring while the nurse is performing interventions. So, if the nurse in our example begins performing wound care, they are thinking about the best dressing to use, how to clean the wound, and if antibiotics should be considered. All of these thoughts are likely occurring as the nurse is providing the care; thus, they are examples of how the nurse is using thinking in action.

Reflection on Thinking

After performing interventions or making decisions, the nurse should reflect on the thinking that occurred. The nurse will use this thinking process to determine if the decision was reactive or responsive. Reactive decision-making involves responding to situations after they have occurred, often in a hurried or unplanned manner. These decisions tend to be impulsive and are driven by immediate needs or crises. Responsive decisions, on the other hand, involve careful deliberation about how to address a situation based on careful consideration of information. In our example, the nurse's decision appears to have been responsive. The patient was exhibiting some altered vital signs, but nothing indicated that the situation had become emergent yet. The nurse was able to think carefully about the patient's situation and determine that wound care was the highest priority and begin to implement care in a calm, deliberate manner. In an ideal world, all nursing decisions would be responsive, but in a lot of cases, they must be reactive because of situation severity and medical emergencies.

Application of Knowledge

During the outset of the critical thinking process, nurses must judge whether their knowledge is accurate, complete, factual, timely, and relevant. This can be done by applying knowledge to nursing practice in a multitude of ways, including drawing from past education and experience in nursing and using professional resources and standards. Each of these is discussed in more detail in the following sections.

Knowledge Base

Becoming a nurse requires years of schooling, which contributes to the development of a robust knowledge base. Nurses receive formal education and training that provides them foundational knowledge in anatomy, physiology, pharmacology, and patient care techniques, among many others. Additionally, nurses are required to complete continuing education courses specific to their chosen practice setting, further developing their knowledge base. When applying knowledge in practice, nurses can draw from their knowledge base and make informed decisions about patient care.

Experience in Nursing

Nursing is considered a practice. Nursing practice means we learn from our mistakes and our past experiences and apply this knowledge to our next patient or to the next population we serve. As nurses gain more experience, they can use what they have learned in practice and apply it to new patient situations. Each new encounter with a patient presents unique challenge and learning opportunities that contribute to the development of clinical expertise. Reflecting on these experiences allows nurses to recognize patterns, anticipate patient outcomes, and refine their decision-making processes. Whether they are identifying effective nursing interventions for common conditions, adapting care plans to individual patient needs, or navigating complex situations with compassion, nurses draw upon their accumulated knowledge base from clinical experience to provide high-quality, patient-centered care. Through reflection and continuous learning from past experiences, nurses enhance their clinical skills, ultimately improving patient outcomes.

Professional Resources and Standards

In addition to foundational knowledge bases and experience, nurses can also use professional resources and standards to gain and apply knowledge in practice. Nurses can refer to clinical practice guidelines that have been established by professional organizations and healthcare institutions to help provide a framework for implementing

nursing interventions based on the best evidence. By following the guidelines, nurses are ensuring that their care aligns with established standards and promotes optimal patient outcomes. Additionally, nurses should remain up to date about new and emerging research in their practice area, which can be obtained by reading professional journals and publications and attending conferences, workshops, and other trainings. Nurses can use the information learned from these resources to influence practice and ensure the highest standards of care are being performed in their practice setting. By staying informed about the latest developments in nursing and health care, nurses enhance their knowledge base and can adapt their practice to incorporate new evidence and innovations. Along with professional development and staying current with professional practices, nursing students should actively seek and join professional organizations such as critical care nursing or oncology nursing societies because this will lead the student to become expert in that subject and stay relevant with current evidence and practice guidelines.

CLINICAL SAFETY AND PROCEDURES (QSEN)

QSEN Competency: Evidence-Based Practice

Definition: Providing quality patient care based on up-to-date, theory-derived research and knowledge, rather than personal beliefs, advice, or traditional methods.

Knowledge: The nurse will describe how the strength and relevance of available evidence influences the choice of intervention in provision of patient-centered care.

Skill: The nurse will:

- subscribe to professional journals that produce original research and evidence-based reports related to their specific area of practice
- become familiar with current evidence-based clinical practice topics and guidelines
- assist in creating a work environment that welcomes new evidence into standards of practice
- question the rational for traditional methods of care that result in sub-par outcomes or adverse events

Attitude: The nurse will appreciate the importance of regularly reading relevant professional journals.

Critique of Decision

After determining the best course of action based on the application of knowledge, the nurse can critique the decisions that were made. Specifically, the nurse will use self-reflection to review their actions and thoughts that led them to the decision. The nurse will consider the outcomes of their chosen interventions, reflect on the effectiveness of their approach, and identify areas of improvement. Additionally, the nurse may seek feedback from colleagues to obtain different perspectives about decisions made. Soliciting input from others helps the nurse gain insight and learn from their peers to further inform their future practice. Reflection questions that the nurse may ask themselves to critique their decision include the following:

- Was the patient goal or outcome met?
- Could the intervention have been done differently? Could it have been done better?
- What are alternative decisions that could have been made? What are the merits of each?

Critical Thinking Indicators

Certain behaviors that demonstrate the knowledge, skills, and attitudes that promote critical thinking are called **critical thinking indicators (CTIs)**. Critical thinking indicators are tangible actions that are performed to assess and improve your thinking skills.

4-Circle CT Model

There are many models and frameworks within nursing and other disciplines that attempt to explain the process of critical thinking. One of the most popular is Alfaro-LeFevre's 4-Circle CT Model (Alfaro-LeFevre, 2016). This model breaks critical thinking into four components: personal characteristics, intellectual and cognitive abilities, interpersonal abilities and self-management, and technical skills. These four components overlap, forming interconnections in critical thinking.

LINK TO LEARNING

Learn more here about the 4-Circle CT Model (https://openstax.org/r/77circle) and see an illustration of it.

Personal Critical Thinking Indicators

Personal CTIs are behaviors that are indicative of critical thinkers. Some of these behaviors that are most relevant to nursing include:

- confidence and resilience: showing ability to reason and learn and overcoming problems
- curiosity and inquisitiveness: asking questions and looking for the "why" behind things
- effective communication: listening well, showing understanding for others thoughts and feelings, and speaking and writing with clarity
- flexibility: changing approaches as needed to obtain the best results
- honesty: looking for the truth and demonstrating integrity while adhering to moral and ethical standards
- self-awareness: being able to identify one's own knowledge gaps and acknowledge when thinking may be negatively influenced by emotions or self-interests.

Personal Knowledge and Intellectual Skills

Personal knowledge and intellectual skills encompass the knowledge gained from nursing school and clinical experiences. Examples of each of these kinds of skills are listed in Table 43.3.

Personal Knowledge	Intellectual Skills
• Behavioral health and disease management • Ethical and legal principles • Normal and abnormal function (biological, psychological, social, cultural, and spiritual) • Nursing and medical terminology • Nursing process and theories • Related anatomy, physiology, and pathophysiology • Risk management and infection control • Safety standards • Scope of nursing practice • Signs and symptoms of common problems and complications • Spiritual, social, and cultural concepts	• Assesses systematically and comprehensively • Communicates effectively • Determines individualized outcomes and uses them to plan and provide care • Distinguishes normal from abnormal; identifies risks for abnormal • Distinguishes relevant from irrelevant; clusters relevant data together • Identifies assumptions and inconsistencies; checks accuracy and reliability (validates data) • Identifies problems and their underlying cause(s) and related factors • Reassesses to monitor outcomes (responses) • Recognizes changes in patient status; takes appropriate action • Recognizes missing information; gains more data as needed. • Sets priorities and makes decisions

TABLE 43.3 **Personal Knowledge and Intellectual Skills Included in the 4-Circle CT Model**

Interpersonal and Self-Management Skills

Interpersonal and self-management skills encompass the knowledge and skills needed for effective collaboration. These include:

- addressing conflicts fairly
- advocating for patients, self, and others
- dealing with complaints constructively
- establishing empowered partnerships
- facilitating and navigating change
- fostering positive interpersonal relationships and promoting teamwork

- giving and taking constructive criticism
- leading, motivating, and managing others
- managing stress, time, and energy
- promoting a learning and safety culture
- upholding healthy workplace standards
- using skilled communication in high-stake situations

Technical Skills

Technical skills in nursing refer to the practical abilities and competencies that nurses use in the delivery of patient care. These skills are typically learned through education, training, and hands-on experience. Some common technical skills in nursing include:

- administering medications
- assisting with personal hygiene and activities of daily living
- documentation and charting
- inserting intravenous catheters
- inserting urinary catheters and nasogastric tubes
- performing tracheostomy care
- performing wound care
- taking vital signs

43.3 Unfolding Case Study Dissection

LEARNING OBJECTIVES

By the end of this section, you will be able to:

- Examine the clinical decisions based on patient needs in the case study
- Recognize steps in application of patient care in the case study
- Identify patient care outcomes in the case study

In this section, we will examine the critical thinking and clinical decision-making used in Unfolding Case Study #4, previously provided in Chapter 19 Oxygenation and Perfusion, Chapter 22 Activity, Chapter 24 Skin Integrity, Chapter 26 Urinary Elimination, and Chapter 30 Pain Assessment.

UNFOLDING CASE STUDY

Unfolding Case Study #4

Mrs. Jenson, a 72-year-old female, presents to the emergency room with worsening shortness of breath, fatigue, and swelling in her lower extremities over the last week. She reports increasing difficulty performing activities of daily living (ADLs) due to weakness and increased dyspnea.

Past Medical History	**Medical history:** Hypertension, type 2 diabetes, heart failure (class III), osteoarthritis **Family history:** No significant family history reported. **Social history:** Widowed ten years ago, currently living in an assisted care facility. No children. **Current medications:** • Lisinopril 20 mg PO once daily • Metformin 500 mg PO twice daily • Metoprolol 50 mg PO once daily • Aspirin 81 mg PO once daily • Furosemide 40 mg PO once daily • Losartan 25 mg PO once daily • Ibuprofen 400 mg PO Q6 hours PRN mild arthritic pain
Nursing Notes	**0830: Assessment** **Neurological:** Alert and oriented x4, follows commands appropriately **Respiratory:** Labored and shallow breathing pattern, bilateral crackles in bases **Cardiovascular:** Bilateral lower extremity edema, tachycardia **Abdominal:** Bowel sounds present in all four quadrants, no pain or tenderness noted **Musculoskeletal:** Limited range of motion in bilateral shoulder joints, patient reports pain in wrist joints related to osteoarthritis **Integumentary:** Generalized pallor
Flow Chart	**0845: Assessment** Blood pressure: 158/89 mm Hg Heart rate: 111 beats/minute Respiratory rate: 27 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 88 percent on room air Pain: 6/10 (joint pain)
Provider's Orders	• Admit to telemetry unit. • Perform 12-lead ECG. • Administer oxygen therapy to maintain oxygen saturation > 92 percent. • 20 mg furosemide IV STAT.
Nursing Notes	**1200:** 12-lead ECG completed; results show sinus tachycardia. 2 L oxygen via nasal cannula applied, patient reports slight improvement in dyspnea. IV placed in right AC, 20 mg furosemide IV administered. Patient instructed to call before getting up to use bathroom. Patient has not voided since admission. Patient admitted to room on cardiac unit and handoff given to telemetry nurse.
Flow Chart	**1230: Assessment** Blood pressure: 150/82 mm Hg Heart rate: 108 beats/minute Respiratory rate: 22 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 93 percent on 2 L nasal cannula Pain: 6/10 (joint pain)

Flow Chart	**1300: Assessment** Blood pressure: 142/80 mm Hg Heart rate: 98 beats/minute Respiratory rate: 20 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 94 percent on 2 L nasal cannula Pain: 6/10 (joint pain)
Nursing Notes	**1315:** Patient reports experiencing persistent joint pain, particularly in the shoulders and wrists, rated at 6/10 on the pain scale. Patient states that pain interferes with daily activities, such as getting dressed and cooking. Patient also reports stiffness in affected joints, especially in the morning or after prolonged periods of rest, which improves with movement throughout the day.
Provider's Orders	**1400: New Orders** • Occupational therapy referral. • Acetaminophen 1,000 mg PO Q6 hours PRN.
Nursing Notes	**1500:** Occupational therapy referral sent per provider's orders. Acetaminophen administered and patient reports improvement in pain level to a 2/10. **1530:** During shift assessment, nonblanchable redness was noted on the patient's sacrum. When asked about it, patient reports tenderness in the area that gets worse with prolonged sitting. Patient describes the sensation as a mild "stinging" feeling. **1600:** Focused skin assessment performed. Open wound noted on bottom of left foot. Patient reports stepping on broken glass about a month ago but states, "I assumed my foot was fully healed because it doesn't hurt at all." Upon assessment, the wound is red with purulent drainage and surrounded by edematous tissue. Prophylactic dressing applied to sacral area. Wound consultation placed.
Provider's Orders	• Consultation with wound care team. • Consultation with diabetes educator. • Apply nonadherent gauze dressing on foot.
Flow Chart	**1730: Assessment** Blood pressure: 132/80 mm Hg Heart rate: 94 beats/minute Respiratory rate: 18 breaths/minute Temperature: 98.9°F (37.2°C) Oxygen saturation: 94 percent on room air Pain: 7/10 (joint pain)

Nursing Notes	**1800:** Patient pressed call light to request to use the bathroom. Ambulated with x1 assist from nurse due to unsteady gait. Patient was unable to void. Focused pain assessment performed. Patient reports 7/10 lower back pain that began last night. The patient states, "I think it's coming from the hospital bed because I can't get comfortable." Patient says that pain is worse with immobility but improves slightly with ambulation.
Provider's Orders	**1830: New Orders** • Ketorolac (Toradol) 15 mg IV Q6 hours PRN severe pain • Physical therapy referral.

Clinical Decisions Based on Patient Needs

Referring to the scenario in Unfolding Case Study 4, as soon as the patient arrived at the emergency room, the nurse began the process of critically thinking about what needed to be done. The nurse assessed the patient's situation and then recognized, analyzed, and prioritized the patient's needs. Once the needs were prioritized, the nurse made clinical decisions about care to be provided and developed and refined planned nursing interventions. Each of these actions by the nurse is discussed in more detail in the following sections.

Assessment of Patient Situation

The nurse began to assess the patient as soon as they arrived at the hospital. The patient's complaints about worsening shortness of breath, fatigue, and swelling in her lower extremities were important cues to notice because these symptoms were what led her to the hospital to seek care. Additionally, another important cue that was recognized by the nurse was the patient's past medical history, which the nurse hypothesized might have been relevant to their symptoms. Specifically, the nurse took note of all medications the patient was currently taking, because that often provides even more information about a patient's situation. The nurse noticed that the patient was taking shallow breaths and heard bilateral crackles in the bases of the lungs, both of which are consistent with the patient's chief complaint of shortness of breath. During the assessment, the nurse obtained more information including musculoskeletal, integumentary, and pain assessments to use as baseline comparisons later.

Recognize, Analyze, and Prioritize Patient Needs

The nurse recognized that the most concerning vital signs were the low oxygen saturation and elevated respiratory rate. Because airway and breathing are always the top priority, the nurse implemented interventions to address those issues first. The nurse anticipated that the provider would order supplemental oxygen to improve the oxygen saturation level and maybe a diuretic medication to clear the excess fluid from the lungs. The patient also reported 6/10 joint pain, but this was not the priority concern at the time of ER admission. The nurse chose to address the patient's pain later because it was not as important as stabilizing the patient's respiratory status.

Develop and Refine Interventions

Based on the provider's orders, the nurse performed a 12-lead ECG and saw that the patient was experiencing sinus tachycardia on the monitor. The nurse also applied supplemental oxygen via nasal cannula based on the provider's order to keep the oxygen saturation greater than 92 percent. Other nursing interventions included admitting the patient to the telemetry unit, administering IV furosemide, monitoring electrolyte levels, and accurately recording intake and output. As you can see in the new vitals taken after applying oxygen, nearly all parameters were improved. If they did not show improvement, the nurse would have revised the plan of care and refined interventions to treat the patient's condition more effectively. After the patient's respiratory status was more stable, the nurse began to gather more information about the patient's joint pain. The nurse performed a functional assessment and determined that the patient was unable to perform ADLs effectively because of the pain. The nurse relayed these findings to the provider who then ordered acetaminophen and a referral to occupational therapy.

Application of Nursing Care

Application of nursing care in the case study included the interventions mentioned in the previous section as well as counseling the patient about the importance of maintaining skin integrity. While performing a skin assessment, the

nurse noticed that the patient had an open wound on the bottom of her foot but the patient reported that it did not cause her any pain. The nurse recognized that the patient has a history of diabetes and peripheral neuropathy, which affects both the skin-healing process and the patient's ability to feel pain on her lower extremities. The nurse counseled the patient about the importance of maintaining skin integrity, especially on the feet, and put in a referral to meet with a diabetes educator who could provide her with more resources.

Incorporate Factors Affecting Patient Care

Shortly after the nurse applied a dressing on the patient's foot wound, the patient pressed the call light to ask for assistance to walk to the bathroom. The nurse assisted the patient to the bathroom, but the patient was unable to void. At this point, the nurse became concerned that the patient had not voided in more than six hours, especially since she had received an IV diuretic earlier. The nurse recognized that a contributing factor to being unable to void could be embarrassment. Urinary elimination is highly personal, and it can be difficult for patients to void when they feel as though healthcare staff is watching them. The nurse performed a bladder scan and determined that the patient had a significant amount of urine in her bladder. Because of this, the nurse anticipated that the provider would order straight catheterization. If the nurse were to perform this procedure, it would be important to make the patient as comfortable as possible and provide support as needed, as this procedure can be uncomfortable or embarrassing for some patients.

Revise Application of Care

Later in the shift, the patient reported new onset of 7/10 back pain, requiring a revision of the patient's plan of care. The nurse performed a focused pain assessment and noted that the patient's pain is worse with immobility and improves slightly with ambulation. The nurse reported these findings to the provider who ordered IV ketorolac (Toradol) and a referral to physical therapy.

Evaluate Outcomes

After performing interventions, the nurse evaluated outcomes by assessing the patient's vital signs and their understanding of provided education. By assessing these parameters, the nurse was evaluating previous nursing actions that had been taken.

Evaluate Nursing Actions

Specifically, the nurse evaluated the action of applying supplemental oxygen by assessing the patient's vital signs. The nurse noticed that the patient's oxygen saturation went up to 93 percent after applying 2 L of oxygen via nasal cannula. This finding indicated that this intervention and nursing action were effective. Additionally, the nurse noticed that the patient's heart rate, blood pressure, and respiratory rate all improved slightly, further confirming that supplemental oxygen was an effective nursing action. After administering the ketorolac for the patient's back pain, the nurse reassessed the patient's pain level, looking for a decreased pain level.

Revise Plan of Care

The nursing interventions were successful, as indicated by the improvement in vital signs. If they had not improved, the nurse would have revised the plan of care to treat the patient's condition more effectively. This may have included alerting the provider about the lack of improvement in the patient's condition, increasing the flow of supplemental oxygen, educating the patient about deep breathing exercises to improve respiratory status, or requesting alternate analgesic medications. The nurse was continually assessing the patient's condition, monitoring for signs of worsening or improvement to use as a guide for revising the plan of care as necessary.

Summary

43.1 Clinical Judgment Measure Model

Historically, nursing was often viewed as a task-oriented career, but in recent years, the profession has grown in terms of autonomy and clinical judgment. Some of this growth was due to the development of the CJMM, a tool designed to measure critical thinking and clinical judgment in nursing students. This tool allows educators to assess the development of nursing student's critical thinking skills to help ensure they are ready to practice as a nurse after graduation. This tool involves several steps that have expanded upon the traditional nursing process model, making it an excellent framework to guide new nurses in making clinical judgment calls in practice.

43.2 Developing Critical Thinking

Nursing involves several types of thinking, of which one of the most important is critical thinking. Critical thinking involves applying knowledge to make care decisions that reflect evidence-based practice and consider patient preferences. Thinking is a subconscious process, but there are several models that have been developed to focus upon developing more improved thinking skills. Specifically, the 4-Circle CT model demonstrates characteristics that are vital to develop critical thinking skills. The development of critical thinking skills is especially important within nursing because nurses are constantly making clinical judgment calls when caring for sick patients.

Key Terms

clinical judgment thought process that allows nurses to arrive at a conclusion based on objective and subjective information about a patient

clinical judgment measurement model (CJMM) a model allowing nurse educators to teach, assess, and measure the development of clinical judgment skills of nursing students

clinical reasoning a complex cognitive process that uses formal and informal thinking strategies to gather and analyze patient information, evaluate the significance of this information, and weigh alternative actions

cognitive thinking mental processes and abilities a nurse uses to interpret, analyze, and evaluate information in their practice

critical thinking reasoning about clinical issues such as teamwork, collaboration, and streamlining workflow

critical thinking indicators (CTIs) certain behaviors that demonstrate the knowledge, skills, and attitudes that promote critical thinking

deductive reasoning type of thinking that involves using a general standard or rule to create a strategy

generalization proposed explanation for a situation

hypothesis judgment formed from a set of facts, cues, and observations

inductive reasoning type of thinking that involves noticing cues, making generalizations, and creating hypotheses

Assessments

Review Questions

1. What best describes the purpose of the CJMM?
   a. to help new graduates become critical care nurses after graduation
   b. to measure the ability of nursing students to take the NCLEX exam
   c. to help nursing students develop their clinical judgment skills
   d. to make sure that new nurses know how to run a code blue

2. The emergency room nurse is caring for a patient who presents with cough and shortness of breath. The nurse asks the patient about their medical history and notes they have a history of heart failure. The nurse determines that the cough and shortness of breath are likely related to heart failure exacerbation. What cognitive skill of the CJMM is the nurse exhibiting in this situation?
   a. recognize cues
   b. analyze cues
   c. prioritize hypotheses
   d. take action

3. Which situation best reflects the nursing student prioritizing hypotheses?
    a. The student measures a patient's blood pressure.
    b. The student checks the patient's chart to look at laboratory test results.
    c. The student determines that the patient's wound is infected and needs intervention.
    d. The student performs skin care on the patient's open wound.

4. The nursing student is working within an interdisciplinary care team to establish care goals for a patient. The student is actively engaging in what part of the CJMM?
    a. recognize cues
    b. analyze cues
    c. generate solutions
    d. evaluate outcomes

5. What individual factor should the nurse consider when making clinical judgment calls in practice?
    a. care setting
    b. resource availability
    c. cultural preferences
    d. nurse skill level

6. The student nurse is caring for a patient and, realizing they are unsure about how to perform a skill, they ask the supervising nurse for help. What attitude is the student exhibiting?
    a. independence of thought
    b. intellectual humility
    c. perseverance
    d. sociocentricity

7. What would a nursing student exhibiting egocentricity in practice be doing?
    a. The student nurse takes a lunch break before giving a patient pain medication.
    b. The student nurse provides care for a patient who has religious beliefs different from the student's own.
    c. The student nurse asks the supervising nurse why certain medications are being given.
    d. The student nurse realizes they are unsure about how to turn a patient in bed and asks for help.

8. The nurse assesses a patient and notes that they are clammy and fatigued. On the basis of the patient's history, the nurse determines the patient is experiencing a hypoglycemic emergency. What kind of reasoning did the nurse use to come to this conclusion?
    a. deductive reasoning
    b. inductive reasoning
    c. reductive reasoning
    d. productive reasoning

9. The nurse suspects a patient's cough is related to their underlying heart failure. What term describes the nurse's conclusion?
    a. generalization
    b. inductive reasoning
    c. hypothesis
    d. recognizing cues

10. What action represents an intellectual skill included in the 4-Circle CT Model?
    a. The nurse can place a peripheral intravenous catheter.
    b. The nurse recognizes there is missing information and obtains more data.
    c. The nurse describes various nursing models and theories.
    d. The nurse addresses a workplace conflict fairly.

Check Your Understanding Questions

1. What is the difference between the ADPIE nursing process and the CJMM?
2. What are some of the most important attitudes for a nurse to possess to be a good critical thinker?

Reflection Questions

1. Why do you think it was important for the CJMM to be developed?
2. Why do you think critical thinking is so important in nursing?
3. What do you think is the purpose of thinking in nursing?

Competency-Based Assessments

1. Write an example of a clinical story showing how a nurse effectively uses all parts of the CJMM to make a decision that positively influences a patient outcome.
2. In a small group, create a skit that represents one of the attitudes involved in critical thinking. Perform the skit for the rest of the class and have them guess which attitude the group is representing.

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APPENDIX A

Adult Lab Values

Complete Blood Count (CBC)	
Red blood cell (RBC)	4.5 – 5.0 million cells/mm^3 (female) 4.7 – 6.2 million cells/mm^3 (male)
White blood cell (WBC)	5,000 – 10,000 cells/mm^3
Hemoglobin	12 – 16 g/dL (female) 14 – 17.4 g/dL (male)
Hematocrit	35 – 47% (female) 42 – 53% (male)
Platelets	150,000 – 400,000/mm^3
Complete Metabolic Panel (CMP)	
Blood urea nitrogen (BUN)	6 – 24 mg/dL
Serum creatinine	0.6 – 1.2 mg/dL
Estimated Glomerular Filtration Rate (eGFR)	> 60 mL/min/1.73m^2
Carbon dioxide	23 – 29 mmol/L
Glucose	65 – 110 mg/dL
Chloride	96 – 106 mEq/L
Potassium	3.5 – 5.1 mEq/L
Sodium	135 – 145 mEq/L
Calcium	8.6 – 10.2 md/dL
Phosphorus	3.0 – 4.5 mg/dL
Magnesium	1.6 – 2.6 mEq/L
Serum osmolality	285 – 295 mOsm/kg H_2O
Albumin	3.4 – 5.4 g/dL
Total protein	5.5 – 8.3 g/dL

TABLE A1

Bilirubin	0.1 – 1.2 mg/dL
Liver Function Tests (LFTs)	
Aspartate Aminotransferase (AST)	9 – 25 units/L (female) 10 – 40 units/L (male)
Alanine Aminotransferase (ALT)	7 – 20 units/L (female) 10 – 55 units/L (male)
Arterial Blood Gas (ABG)	
pH	7.35 – 7.45
Partial pressure of oxygen (PaO_2)	80 – 100%
Partial pressure of carbon dioxide ($PaCO_2$)	35 – 45 mmHg
Bicarbonate (HCO_3)	22 – 26 mEq/L
Coagulation Labs	
International Normalized Ratio (INR)	0.8 – 1.2 2 – 3 is normal for patients on warfarin
Prothrombin time (PT)	11 – 13 seconds 1.5-2x longer if on anticoagulants
Partial Thromboplastin Time (PTT)	60 – 70 seconds 1.5 – 2x longer if on anticoagulants
Activated Partial Thromboplastin Time (aPTT)	25 – 35 seconds 1.5 – 2x longer if on anticoagulants
Lipid Panel	
High Density Lipoprotein (HDL)	> 40 mmol/L
Low Density Lipoprotein (LDL)	< 100 mmol/L
Triglycerides	< 120 mmol/L
Total Cholesterol	< 170 mmol/L
Hemoglobin A1C	
Normal	< 5.7%
Prediabetes	5.7 – 6.4%
Diabetes	> 6.5%

TABLE A1

Note: These values could change slightly based on parameters set by specific healthcare facilities.

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APPENDIX B

Equivalents

Measurement	Equivalent
Weight	
1 kilogram (kg)	1,000 grams (g)
1 gram (g)	1,000 milligrams (mg)
1 milligram (mg)	1,000 micrograms (mcg)
Volume	
1 liter (L)	1,000 milliliters (mL)
1 milliliter (mL)	1 cubic centimeter (cc)
Length	
1 kilometer (km)	1,000 meters (m)
1 meter (m)	100 centimeters (cm)
1 centimeter (cm)	10 millimeters (mm)

TABLE B1 **Metric Measurements and Equivalents**

Measurement	Equivalent
1 cup	8 ounces (oz) = 16 tablespoons (tbsp or T)
2 tablespoons (tbsp or T)	1 ounce (oz)
3 teaspoons (tsp or t)	1 tablespoon (tbsp or T)
1 teaspoon (tsp or t)	60 drops (gtt)

TABLE B2 **Household Measurements and Equivalents**

Measurement	Equivalent
Weight	
1 pound (lb)	16 ounces (oz)
1 ounce (oz)	8 drams (dr)
1 dram (dr)	60 grains (gr)
Volume	
1 gallon (gal)	4 quarts (qt)
1 quart (qt)	2 pints (pt)
1 pint (pt)	16 ounces (oz)
1 ounce (oz)	8 fluid drams (fl dr)
1 fluid ounce (fl oz)	1 ounce (oz)
1 fluid dram (fl dr)	1 dram (dr)

TABLE B3 Apothecary Measurements and Equivalents

1 kg	2.2 lb
1 tsp	5 mL
1 oz	30 mL
1 tbsp	15 mL
2 tbsp	1 oz
1 cup	8 fl oz
1 lb	16 oz
8 oz	240 mL
1 pt	500 mL
1 gtt	0.5 mL

TABLE B4 Common Conversion Factors

ANSWER KEY

Chapter 2

Unfolding Case Study

1. One of the first major findings that is relevant in this case is the fact that this patient does not speak English. Proper communication is key to establish rapport with patients and provide a thorough nursing assessment. Patients who do not speak English as their preferred language should be provided with a trained medical interpreter or interpreting service to ensure that communication is clear. It is not appropriate for a family member, particularly a young child, to interpret for a patient due to the mature and complicated medical content, medical terminology, and risk for inaccurate interpretation. Although nonverbal communication, such as hand gestures and body language, can be used during the assessment, an experienced healthcare interpreter will ensure that a thorough nursing assessment can be conducted. The patient is also grabbing at her ear, which is an example of nonverbal communication.
2. More information should be obtained about the patient's reported ear pain. The nurse should perform a focused pain assessment, determining if the pain is constant, what it feels like, and whether anything makes it better or worse. Additionally, the nurse should inquire about the cough. Specifically, the nurse should ask how long the patient has had the cough, if anything makes it better, and if she has ever had a similar symptom, such as during the two occasions when she had COVID-19. The nurse should also ask the patient about any history of hypertension diagnosis or treatment, as her blood pressure reading is slightly elevated at this visit.
3. The main factor that makes communication between the nurse and patient difficult is the language barrier. Additionally, while the son is attempting to help interpret, it is hard to know if the interpretation is accurately reflected to both parties, which could further complicate the situation. The nurse utilized a picture board for communication, which is a great option. The nurse may also consider using electronic translation services and communication until the trained interpreter arrives.
4. The foundation of the transactional model is that it allows for two-way communication between the nurse and patient as opposed to one-way communication from just the patient or just the nurse. Specifically, the nurse must be able to interpret the patient's communication in the context of their culture and language. Using the transactional model in this situation, it would be helpful for the nurse to use nonverbal feedback from the patient because of the existing language barrier. An example would be assessing the patient's facial expressions to interpret their pain level and then reassessing for nonverbal feedback after administration of pain medication to determine whether it was effective. Ideally, the patient exhibits less grimacing or crying, which would indicate improvement and positive feedback that the nurse can use as a guide for providing further intervention.
5. There are many ways the nurse can use therapeutic communication to address the patient's concerns. First, the nurse should allow the patient to express and share their feelings. Specifically, the patient has reported feeling anxious about leaving her older mother at home alone, so the nurse should allow the patient to express their anxiety. The nurse should remain empathetic, telling the patient they hear and understand the patient's concerns and that they are valid. If appropriate, the nurse may use gentle touch to convey understanding and empathy. The nurse could also ask the patient relevant questions about her concerns, such as, "Do you have any neighbors or family that could go check on her?" or "Would you like to call your mom to check on her? I can help you call her." Above all, the nurse should practice active listening throughout all interactions with the patient, which is the foundation of therapeutic communication.
6. Because the patient does not speak English, the nurse will have to rely on the interpreter to ensure understanding of provided information. Health literacy, an individual's ability to obtain, understand, and apply basic health information and services to make informed health decisions, is important, especially for patients with language or other barriers. The nurse should collaborate with the interpreter to have the patient "teach back" the information to ensure understanding.

Chapter 5

Unfolding Case Study

1. A. Rationale: The patient appears to be stable currently. The nurse should recognize the need for an interpreter as the priority to improve communication because the patient does not speak English.
2. C. Rationale: Pain is whatever the patient says it is. In this case, it is likely that the patient's culture processes pain and the meaning of pain differently than what the nurse expects to see. In some cultures, it is common to remain stoic, regardless of how severe the pain is. This highlights the importance of obtaining a thorough history and assessment so that cues are not missed.
3. Health disparities are health outcomes that are worse in certain populations. The social determinants of health are external factors such as the neighborhood people live in or access to health care and have a direct impact on health disparities. In this particular case, the patient reports that income is inconsistent, likely classifying the patient as from a low socioeconomic status, which is a social determinant of health. Having a limited (or inconsistent) amount of income directly impacts the patient's ability to provide for her family and obtain healthcare services, both of which contribute to the development of health disparities.
4. First, the nurse should attempt to obtain more information about the patient's situation. This needs to be done with care as this can be sensitive to talk about. In this case, the nurse also needs to request assistance from the interpreter because the patient does not speak English. Once more information about the patient's finance and home situation obtained, the nurse can initiate appropriate referrals. Often this includes a referral to a social worker or counselor who can assist the patient in finding community and other resources to address economic or social needs.
5. First, the nurse will determine what the patient considers to be the problem and what they call it. In this case, the nurse may ask the patient, "What do you call your illness?" or "What does your illness mean to you?" Second, the nurse should ask the patient what they think caused the illness. In some cultures, it is believed that illness is caused by imbalances in the body or is a punishment from God. The nurse should accept the patient's answer without judgment, even if it does not align with the nurse's personal beliefs. Next, the nurse should ask what the patient is doing to cope with the problem. The nurse should take note of any cultural differences in the way the patient handles the illness, such as use of folk remedies or nontraditional healers, which could impact the patient's care plan. Last, the nurse will ask the patient how concerned they are about the illness. Some cultures view illness as "God's will" and are not concerned, while others express more concern. In this case, specifically, the nurse may also want to ask how concerned the patient is about their finances and access to health care as it has been determined that the SDOH are likely impacting the patient's overall health.
6. Many times, nurses provide patients with resources and referrals while in the hospital but then have no idea if they followed through and got the assistance they needed. To combat this, the nurse can do a few different things. First, the nurse should work closely with the social worker to ensure that appropriate resources are available and that the patient's contact information is provided and all follow-ups are scheduled. This helps ensure that contact with the patient is not lost after discharge. Additionally, the nurse should continuously assess the patient's social needs while they are in the hospital, initiating appropriate referrals as needed. In many cases, nurses and patients build a rapport during the hospital stay which allows the patient to confide in the nurse and allows the nurse to assist the patient with resources. The nurse can ask the patient questions such as "Did I address all of your concerns?" or "Is there anything you are worried about that we haven't talked about yet?" to determine whether the patient's social needs have been completely addressed.

Chapter 6

Unfolding Case Study

1. The patient is stable and appears to have basic physiological needs met. However, she expresses concern about employment and finances, indicating that her security needs are not currently met. This is the next-highest priority after physiological needs, so the nurse should address these concerns as the priority.
2. The patient reports being worried about affording medications and care for her mother, so the nurse should ask about health insurance coverage and/or access to medication discount programs. Also, the nurse should ask about the patient's living situation to determine if there are any safety or environmental concerns. Any of

these concerns should be escalated to the social worker so that they can be addressed before discharge.

3. The nurse should address the patient's anxious feelings, as mentioned in the previous question. Additionally, the nurse should inquire about any other emotions the patient is experiencing about her own condition, such as fear. When she presented to the hospital, she was experiencing severe dyspnea and decreased oxygen saturation, which was likely scary. The nurse should discuss those feelings with the patient and address any lingering emotions before discharge.
4. The main concerns the patient has listed currently involve finances and resources for caring for her older mother. The priority action by the nurse is to provide resources and support for the patient. Typically, the best way to do this is to connect the patient with a social worker who is knowledgeable about financial assistance or community support programs that may be able to help ease the financial and emotional burden of caring for her mother. It is important that the nurse connect the patient with the social worker well before discharge to ensure the patient receives the resources they need.
5. First, the nurse should ask open-ended questions about the patient's faith, religion, and spirituality beliefs. This should be done in a nonjudgmental manner, and the nurse should closely assess the patient's comfort level throughout the conversation. Some patients will be comfortable talking about this subject while others will not, so it is important to be mindful when asking questions. If the patient is comfortable talking about this topic, the nurse should ask about various factors that may influence the patient's spirituality, including family influence and previous beliefs and life events.
6. Many times, nurses provide patients with resources and referrals while in the hospital, but then have no idea if they followed through and got the assistance they needed. To improve this, the nurse can do a few different things. First, the nurse should work closely with the social worker to ensure that appropriate resources are available, and that the patient's contact information is provided and all follow-ups are scheduled. This helps ensure that contact with the patient is not lost after discharge. Additionally, the nurse should continuously assess the patient's social needs while they are in the hospital, initiating appropriate referrals as needed. In many cases, nurses and patients build a rapport during the hospital stay, which allows the patient to confide in the nurse and allows the nurse to assist the patient with resources. The nurse can ask the patient questions to determine whether the patient's social needs have been completely addressed: Did I address all of your concerns? Is there anything you are worried about that we haven't talked about yet?

Chapter 8

Unfolding Case Study

1. Cues that confirm the need for inpatient medical treatment include severe chest pain, elevated blood pressure, tachycardia, tachypnea, low oxygen saturation, and shortness of breath.
2. Based on the cues and provider's orders, it can be inferred that the patient is experiencing a myocardial infarction, or heart attack. The patient has a history of coronary artery disease, which is another sign that she may be having a heart attack. The admitting provider is likely going to treat the patient's symptoms as if they were a myocardial infarction until it is ruled out because if not treated in a timely manner, severe heart damage may occur.
3. The patient is likely going to the cardiac unit because they are exhibiting signs/symptoms of myocardial infarction. The patient may end up in the cardiac catheterization lab eventually, but for the moment, the patient is reporting improvement in symptoms and is stable. If the patient were to become unstable at any point, it is likely that they would be transferred to the intensive care unit.
4. The emergency room nurse should include the reason for the patient seeking care, pertinent symptoms, and any interventions performed. In this case, the nurse would include that the patient presented for 7/10 chest pain with shortness of breath and interventions included a 12-lead ECG, blood work, supplemental oxygen administration, and administration of IV nitroglycerin. The nurse will want to report any pertinent details about those interventions such as what dosage of nitroglycerin is currently infusing, how much oxygen has been applied, and results of the lab tests. The nurse should end the report with any relevant provider orders that have not been addressed yet and let the nurse know what the next steps in the plan of care are.
5. The emergency room nurse should ensure that the cardiology nurse has been provided with an adequate report and is ready to receive the patient. The nurse should make sure that all of the patient's belongings are transferred with the patient to their new room. If the patient wishes for family to be notified of the transfer,

the nurse should initiate making those phone calls. Additionally, the nurse should assess the patient's mobility status to determine the most appropriate method of physical transfer to the new unit.

6. The patient will report comfort during and after the physical transfer to the new unit and room. Additionally, the patient will report that all personal belongings are present in the new room and that their family members have been made aware of the transfer. Lastly, the nurse will ensure the patient is left in a safe position (e.g., bed low and locked, fall alarm on) before leaving the unit.

Chapter 9

Unfolding Case Study

1. The most concerning cue is the patient's inability to remain safely in bed. It is also concerning that the patient is restless and agitated, as this may be indicative of an underlying problem.
2. Based on the cues assessed, the nurse should be concerned about the patient's increased risk for falls. Additionally, the nurse may have concerns related to the patient's mental status since they are exhibiting signs of restlessness and agitation following the procedure.
3. The patient was given oxycodone, which could alter their mental status and their ability to remain safe when out of bed. Additionally, the patient just returned to the unit from a procedure where sedation and pain medications were likely administered. Other factors that may potentially be affecting the patient's ability to remain safely in bed include age, sensory impairments, and/or vision problems. It is important for the nurse to assess for and address these underlying issues to decrease the patient's risk for falls.
4. The nurse should implement fall risk precautions including moving the patient's room closer to the nurse's station, applying fall risk socks and arm bands, keeping the bed locked and in the lowest position, and turning on the bed alarm. The nurse should assess why the bed alarm was off and if the patient is able to turn it off themselves. If they can do so, other interventions such as a 1:1 sitter may need to be initiated.
5. Before anything else, the nurse must ensure that the patient is safe and uninjured from the fall. After getting the patient back to bed, the nurse should conduct a thorough physical assessment and document any apparent bruising or marks left from the fall. The nurse should also notify the provider about the fall, as they may want to order imaging to look for internal injury, especially of the head. After confirming that the patient is not injured from the fall, an incident report must be filed by the nurse.
6. The patient should remain safely in bed and free from harm after the implementation of fall precautions. The patient and patient's family members should also express understanding of the care plan and need for fall risk precautions. If the patient continues to get up from the bed without assistance, the care plan will need to be revised and reevaluated to find more effective solutions.

Chapter 10

Unfolding Case Study

1. The patient is exhibiting several concerning respiratory cues, including low oxygen saturation, crackles in the right lung, dyspnea, increased shortness of breath, and cough with yellow sputum.
2. Based on the cues, it can be inferred that the patient has developed pneumonia. Because the patient has been in the hospital for the last several days, this can be classified as a hospital-acquired infection.
3. The patient likely developed pneumonia through contact with infected droplets. This is most likely related to poor hand hygiene, one of the major causes of healthcare-associated infections. The patient may also have underlying health conditions that put them at an increased risk for developing infection.
4. The provider has ordered a sputum culture to determine the causative agent of the pneumonia. The patient was started on vancomycin at first because it is a broad-spectrum antibiotic. However, once the sputum culture comes back, the antibiotic may be changed to one that is more specific for the type of pathogen causing the infection. Supplemental oxygen was ordered because the patient is experiencing shortness of breath and dyspnea secondary to the infection. Droplet precautions have been initiated to prevent the spread of infection to staff and other patients on the unit.
5. The patient has been placed on droplet precautions, which requires the nurse to wear a mask when entering the room. If the patient requires transport outside of the room, the nurse should ensure the patient is wearing a surgical mask.

6. Findings that would indicate an improvement in the patient's condition include improved oxygen saturation with less supplemental oxygen needed, improved crackles in the lungs, no fever, normal respiratory rate, and improvement in shortness of breath. If the patient is not improving, it may require a change in antibiotics because the patient has MRSA, which is resistant to several kinds of antibiotics.

Chapter 16

Unfolding Case Study

1. The highest priority concern at this time is that the patient is requesting to discuss palliative care options. It is important for the nurse to ensure the patient has all the resources she needs to make an informed decision about her medical care.
2. Autonomy is the most relevant ethical principle to the patient's current condition. Autonomy refers to the patient's right to make their own care decisions, and in this case, the patient is advocating for herself to make the decision to pursue palliative care.
3. There are many reasons why the patient may not want her family to know about her decision to receive palliative care. She may not be close with her children or may not want them to feel sad about her condition, especially since they lost their father in a car accident only a few years ago. Ultimately, because she is of sound mind, she can make this decision for herself, and the nurse should respect her autonomy. However, the nurse could have a conversation with the patient about contacting her children to make sure that's really what she wants. The nurse must have this conversation in a nonjudgmental way, allowing for the patient's concerns to be expressed and then following her wishes as expressed.
4. The nurse has three options: The first option is to leave the situation alone and respect the patient's wishes to not contact her family. The second option is to go ahead and contact the family since the nurse knows they will want to know about her condition. The third option is to continue to discuss the situation with the patient and hope she changes her mind about contacting her family.
5. The nurse is obligated to honor the patient's autonomy, which means that contacting the family without the patient's consent would be inappropriate. This action would violate boundaries and disregard the patient's wishes, demonstrating a lack of respect for their autonomy. The nurse should maintain an open dialogue with the patient about contacting her family but should do so in a nonjudgmental way without trying to coerce the patient to do it. If the nurse is unable to have these kinds of conversations without patronizing the patient, it would be best for the nurse to proceed with option one, which is to respect the patient's wishes and leave the situation as is.
6. Moral distress in nurses often manifests as physical symptoms including headaches, gastrointestinal upset, and depression. If the nurse's distress has improved, these symptoms should be improved or resolved altogether. If the nurse is experiencing these symptoms or has feelings of dread or anxiety when caring for the patient, the distress is likely still present. If that is the case, it is important for the nurse to reflect on their feelings and values and actively find ways to resolve the internal distress.

Chapter 17

Check Your Understanding Questions

1. Answers will vary but should include at least three options from the following: knowledge allowing better choices, activities, understanding of health, wellness, medications; increased physical activity, improved nutrition, decreased risks; hygiene of self and environment.
2. Answers will vary; options include remembering different information; supporting, encouraging, and connecting with one another; asking different questions; fostering asking questions; fostering all learning methods.
3. Answers will vary but should include that direct instruction involves active participation or involvement of the teacher, and indirect instruction includes using other tools to fulfill and complete assignments without direct interaction with the teacher. Direct instruction examples include lecture, discussion, question and answer, demonstration, and video; indirect instruction examples include mention of problem-based learning, inquiry-based learning, experiential learning, and question and answer sessions specific to a laboratory class or clinical, demonstration of laboratory or clinical skills.

4. Answers will vary but should include the notion that health teaching and health promotion is one of the standards of nursing practice, and provide example(s) from the seven competencies.
5. Answers will vary but should capture that checklists can demonstrate completion of tasks, whether accomplished, and, if necessary, whether accomplished at increasing levels of skill, up to and including fully understanding and acquiring the task.

Chapter 19

Unfolding Case Study

1. The nurse should first recognize the patient is exhibiting signs of respiratory distress, including a low oxygen saturation level on room air, tachypnea, worsening shortness of breath, dyspnea, and crackles in the lungs. The nurse should also recognize the patient is experiencing tachycardia, hypertension, 6/10 pain, bilateral lower extremity edema, and fatigue.
2. Many of the patient's symptoms recognized in the previous question (e.g., crackles, tachypnea) are consistent with the patient's past medical history of heart failure. Additionally, the patient's blood pressure is elevated, which is consistent with her history of hypertension. The patient is also reporting 6/10 joint pain, which is likely related to her history of osteoarthritis.
3. The patient is likely experiencing a mix of both types. The patient is exhibiting crackles in the lungs, dyspnea, and tachypnea, which are consistent with left-sided heart failure. The patient is also experiencing bilateral lower extremity edema, which is more prevalent in cases of right-sided heart failure. Because this patient has a history of heart failure, it is possible that it originally started on the left but then began to affect the right side of the heart over time.
4. The provider has ordered that the patient be admitted to the telemetry unit. This is likely because the patient is exhibiting symptoms that are indicative of heart failure exacerbation, which will require close cardiac monitoring. The rationale for the 12-lead ECG is to monitor the electrical activity of the heart to make sure the patient is not experiencing any abnormal underlying cardiac dysrhythmias. The oxygen has been ordered because the patient's oxygen saturation is low (88 percent on room air). This indicates that the patient is not receiving an adequate amount of oxygen to perfuse the lungs and other tissues of the body, which can be improved with application of supplemental oxygen. The IV furosemide is ordered because it appears the patient is in a fluid overload state, related to her heart failure, as evidenced by the crackles in the lungs and bilateral lower extremity edema.
5. The nurse needs to keep a close watch on the patient's electrolyte levels due to the administration of an IV diuretic. Diuretics, especially when administered intravenously, can deplete electrolytes in the circulatory system, which can quickly become life-threatening if not replaced. The nurse should also closely monitor the patient's output, as the IV diuretic will cause the patient to urinate more frequently. She has not yet used the bathroom, so that will be something to monitor closely.
6. The patient's blood pressure, respiratory rate, oxygen saturation, and heart rate have all slightly improved, indicating that the interventions were effective. The patient is still reporting 6/10 joint pain, so this aspect of her condition is not showing signs of improvement. Now that the patient's vital signs are stabilizing, it is important for the nurse to address and treat the pain.

Chapter 22

Unfolding Case Study

1. The nurse would first assess the patient's respiratory and circulatory systems (based on the ABCs of prioritization). The patient's vital signs have improved since arriving at the emergency room and she is currently stable. At this point, it is most important for the nurse to recognize the patient is reporting moderate pain in the joints, rated 6/10 on the numerical scale.
2. The nurse would want to gather more information about the patient's pain. Using a mnemonic, such as OLDCARTES, the nurse will assess onset, location, duration, characteristics, aggravating factors, radiating, treatment, effect, and severity. The nurse may ask questions such as how long she has had the pain, if the pain is constant or intermittent, if anything makes it better, and if anything makes it worse. After obtaining that information, the nurse will be better prepared to initiate interventions for pain control.

3. The nurse would hypothesize that the patient's joint pain negatively impacts her quality of life and probably decreases her level of activity. Even though studies have shown improvement in joint pain from arthritis with increased exercise, patients often find that information to be counterintuitive, instead choosing to rest the joints in an effort to improve symptoms.
4. The nurse should perform a functional assessment to gain a better understanding of the patient's ability to perform ADLs. There are several assessments that can be used but it is most likely that the nurse will use the Katz Index of Independence in Activities of Daily Living.
5. The nurse should first relay these findings to the provider. The provider may order medications to better control her osteoarthritis symptoms or initiate a referral to physical or occupational therapy. Additionally, the nurse should offer support and encouragement to the patient, as losing the ability to perform ADLs can have a significant impact on a patient's mental health. The nurse should also connect the patient to other resources, such as support groups for individuals with osteoarthritis or access to companies that provide assistive devices.
6. Findings that would indicate that interventions were effective and optimal outcomes were achieved include improvement in pain level, improved range of motion, and increased ability to perform or assist with ADLs. The patient should also express an understanding of the need for occupational therapy and be an active participant in her plan of care.

Chapter 24

Unfolding Case Study

1. The most important cue for the nurse to recognize based on the provided information is the redness on the patient's sacrum. Specifically, the nurse should recognize that the redness is nonblanchable, meaning that it does not turn white when pressed, indicating that it is a stage one pressure injury. It is also important to recognize that the patient has tenderness in that area with sitting, which is consistent with a pressure injury.
2. The nurse should perform a focused skin assessment to confirm the staging of the redness on the sacrum. Based on its nonblanching status, it is likely to be stage one, but the nurse should assess more carefully to confirm. The nurse should also perform a skin assessment to determine the patient's risk for developing pressure injuries. This will allow the nurse to discover potential causes of the skin breakdown and initiate interventions to reduce risk factors.
3. The nurse should recognize that the patient has difficulty moving related to her osteoarthritis. This immobility is likely contributing to the development of the patient's pressure injury. Additionally, the nurse may hypothesize that factors related to the patient's hydration and nutrition status could be contributing as well.
4. The provider ordered a consultation with the wound care team because of the open wound found on the patient's foot. Based on the assessment findings, the wound appears to be infected, warranting more intense care and follow-up that are best provided by a specialized team. The provider has ordered a consultation with the diabetes educator because it is likely that the patient's foot wound is related to her diabetes. The wound has not healed even though it has been a month since the initial accident, indicating poor wound healing, which is consistent with diabetes. Also, the patient reports being unable to feel any pain on her foot, despite obvious signs of infection. This is concerning and likely related to peripheral neuropathy associated with her diabetes, thus indicating the need for more education about her condition. The provider ordered the application of a nonadherent gauze dressing on the foot to protect the wound site and promote optimal healing. Nonadherent gauze dressings are specifically designed to minimize trauma to the wound bed during dressing changes by reducing the likelihood of the dressing sticking to the wound.
5. The priority actions by the nurse include further assessment and documentation of the wound, initiation of ordered specialty consultations, and application of the ordered dressing. The nurse should closely assess the foot wound for size, drainage characteristics, and any other concerning findings. These should all be documented in the patient's chart, along with a picture of the wound to use for comparisons later. The nurse should also initiate the referrals to wound care and the diabetes educator to ensure that the patient receives these services before discharge. Last, the nurse should apply the nonadherent gauze dressing as ordered. This will keep the wound covered, preventing worsening infection, until the wound care team is able to take a look at it.
6. Findings that would indicate success of the interventions include a wound that is improving (as evidenced by

comparison to the original photo taken during the initial assessment), improved redness and swelling, stable vital signs that do not indicate the presence of an infection, and patient understanding of the need to change the dressing often and keep the area clean. Additionally, the patient should express an understanding of any education provided to them by the diabetes educator regarding the prevention of future injuries and delayed wound healing related to peripheral neuropathy.

Chapter 26

Unfolding Case Study

1. The most important cue for the nurse to recognize is that the patient is unable to void. This is concerning since the patient has been in the hospital for over six hours at this point.
2. Since the patient was given a diuretic six hours prior, the nurse would have expected the patient to void by now. This is concerning for urinary retention.
3. Patients with urinary retention may be asymptomatic, so it can be difficult to assess for. However, the nurse could assess for bladder distension on palpation, lower abdominal discomfort, and an inability to initiate or sustain a stream of urine.
4. First, the nurse should report the findings to the provider. It is likely the provider will order a bladder scan to measure how much urine is in the bladder. This is done with a bladder scanner (ultrasound) at the bedside by the nurse.
5. The nurse should anticipate that the provider will order a straight catheterization to empty the bladder. The provider might order an indwelling Foley catheter if the patient requires strict input and output documentation, or if the patient's condition worsens.
6. If performing straight catheterization, the nurse would expect to remove 500 mL of urine from the patient. If less is excreted, there may have been a problem with the catheter that warrants follow-up. The patient should also report less abdominal discomfort and lower abdomen distension if the interventions were effective.

Chapter 30

Unfolding Case Study

1. The nurse should recognize that the patient is experiencing severe 7/10 back pain. The rest of the patient's vitals are currently stable.
2. To gather subjective information about the patient's pain, the nurse should perform a "PQRSTU" assessment. During this assessment, the nurse can get more information about what makes the pain worse or better, what the pain feels like, where the pain is felt, how severe the pain is, when the pain started, and what the patient thinks is causing the pain. Objective information would be gathered by checking vital signs and assessing for body language that is indicative of pain such as grimacing or moaning.
3. The patient has a history of osteoarthritis, so the nurse might hypothesize that it could be contributing to some of the back pain. Additionally, the patient could be experiencing distress from being in the hospital that is manifesting as physical pain.
4. The rationale for the ketorolac is immediate pain control. Ketorolac is an NSAID that is indicated for the treatment of breakthrough pain and is used to manage moderate to severe pain, such as the pain displayed by the patient in this case study. Physical therapy is ordered to help the patient with exercise and movement that may improve the back pain related to immobility.
5. One of the main side effects of ketorolac is drowsiness, so the nurse should closely monitor for excessive fatigue. The nurse can monitor for this by frequently assessing the patient's level of consciousness and monitoring for changes. Another major adverse effect is GI bleeding. The nurse will monitor the patient closely for early warning signs such as tachycardia or a decrease in hemoglobin. Ketorolac can also cause Steven-Johnson syndrome, so the nurse should stay with the patient for a few minutes after administering the medication to watch for the development of a facial rash.
6. Assessment findings that would indicate effectiveness of the interventions include stable vital signs, lower pain score reported by the patient, and lack of body language cues (e.g., grimacing) that suggest pain.

Chapter 33

Unfolding Case Study

1. First, the nurse must recognize the patient's report about being unable to achieve or maintain an erection is significant because sexual dysfunction can negatively impact overall health. The nurse should also recognize the patient is actively being treated for depression and hypertension based on the current medications listed.
2. The nurse should recognize that both antidepressant and antihypertensive medications can contribute to the development of ED and this patient is on both types of medications. The patient also has a history of diabetes, which has been linked to ED. Additionally, the patient is experiencing depression, which may impact his sexual health and well-being.
3. The nurse should gather information about potential psychological and psychosocial factors that may be causing the ED symptoms. The nurse should first ask more about the patient's depression and if he feels that it is being treated effectively. The nurse should also gather information about the patient's body image, stress level, culture, religion, and lifestyle to gain a better understanding of any risk factors that may be present and contributing to his ED symptoms.
4. The nurse should anticipate the provider will want to obtain a more thorough history of the symptoms. Additionally, the nurse should anticipate the provider may suggest a combination of medications and counseling to treat the ED symptoms. The provider may also suggest counseling or support groups for spouses of cancer patients.
5. Because providing education about sexual health topics can be sensitive and difficult, the nurse should first create a safe and supportive environment for the patient to openly discuss his concerns. As an educator, the nurse should provide the patient with factual and easy-to-understand information about the potential causes of ED and what treatments are available. The nurse must employ good communication skills during this discussion, such as by using active listening and nonjudgmental language to create a safe place for the dialogue to occur. The nurse should focus on the facts, ensure that the patient understands that his symptoms are not his fault, and provide him with the education and resources that he needs to make informed decisions about his sexual health.
6. First and foremost, the patient should express an understanding of the provided information. The patient should also feel empowered to take control of his sexual health decisions versus feeling bad that he needs pharmacologic assistance to maintain an erection. Long-term positive outcomes after treatment initiation would include improvement in ED symptoms and less sexual frustration reported by both the patient and his wife.

Chapter 34

Unfolding Case Study

1. First, the nurse recognizes the patient's blood pressure and heart rate are both elevated. Additionally, the patient expresses concern about being unable to participate in sexual activity with his wife due to ED symptoms. The nurse should also recognize the patient has been under a lot of stress at work and is experiencing stress related to his wife's cancer diagnosis, which could be contributing to some of his symptoms.
2. When the patient experiences stress, his body releases hormones that activate the "fight-or-flight" response. In some cases, this can be beneficial as a compensatory response, but in this case, it is likely that the patient is experiencing chronic stress, which is no longer compensatory. Chronic stress tends to be responsible for negative physiological responses such as hypertension, gastrointestinal upset, anxiety, and heart failure. This patient is experiencing hypertension and depression, both of which are exacerbated by the chronic stress.
3. Chronic stress can have profound effects on the body, such as those that are reflected in the patient's laboratory results. First, the patient's kidney function is normal, but on the higher end of normal. Chronic stress can negatively affect the kidney's ability to function optimally, so these values could be related to stress. The patient is also experiencing elevated lab values related to his diabetes (e.g., HbA_{1C}, glucose), which may be exacerbated by stress. His elevated white blood cell count may indicate that his body is fighting an infection. Individuals who experience chronic stress have an increased risk of infections because the stress weakens their immune system. Last, the patient has elevated lipid levels, which are often associated

with stress.

4. First, the nurse should anticipate the provider will order counseling or other interventions to target the patient's stress levels. Chronic stress can result in many negative physiological symptoms, so treating the underlying stress may help address some of the other health issues the patient is experiencing. The nurse should also anticipate that the provider will order medications or lifestyle changes to address the elevated glucose, hemoglobin A_{1C}, and cholesterol levels.
5. One of the main components of Roy's adaptation model is nursing activities, which are equivalent to nursing actions/interventions. This model encompasses a foundation for all aspects of nursing and patient interactions, including the interventions prescribed by the provider. Additionally, this model states that an individual's potential for adaptation is limited to their ability to cope and the body's resources. In this case, another important nursing action would be for the nurse to assess the patient's ability to cope, which would give a better indication as to whether they will be able to adapt from their current stress level.
6. After meeting with the dietitian and making dietary changes, the nurse would recheck laboratory values and hope to see improvements (decreases) in cholesterol and hemoglobin A_{1C} over time. The nurse would also assess for improvement in depression symptoms and the patient's ability to cope with stress related to his wife's diagnosis, both of which would indicate a positive patient outcome.

Chapter 36

Unfolding Case Study

1. The nurse should recognize that both Mr. and Mrs. Morales are visibly upset by the news. While Mr. Morales appears to be angry, Mrs. Morales is experiencing sadness and disbelief. The nurse should recognize that both feelings are valid and allow them to grieve how they need to in this moment.
2. Mrs. Morales appears to be in the stage of denial based on her comments of disbelief. Mr. Morales, on the other hand, appears to be experiencing anger. He is having an angry outburst about the provider, requesting that they get a second opinion. It is important for the provider to recognize that the anger being directed at them is likely not personal, but a coping mechanism being used by the patient's husband.
3. Based on his questions about what to expect during the dying process, the nurse should anticipate he might like to receive information about physiological changes that might occur during the dying process.
4. The nurse should provide information about the specific stages of death (e.g., early, middle, late) and what symptoms and physiological changes the patient might experience during each. The nurse should also describe physical symptoms to look for, including restlessness, agitation, loss of consciousness, hallucinations, and agonal breathing.
5. The patient has a DNR order in place, so the hospice nurse should not begin CPR. Instead, the nurse should listen to the patient's heart and determine whether or not death has occurred. The nurse should also allow the husband and other family to be with the patient for as long as they need.
6. Everyone grieves death differently, so this could be subjective. However, the nurse would assess for healthy coping mechanisms such as attending support group meetings, spending time with family and loves ones, and showing a gradual improvement in grief symptoms.

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