

Lippincott[®] Essentials for Nursing Assistants

A Humanistic Approach to Caregiving

SIXTH EDITION



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Sixth edition

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Summary: "Nursing assistants are increasingly being hired by health care facilities of all types that are seeking ways to provide top-quality nursing care in the most efficient manner. As a result, the need for qualified, well-trained nursing assistants is growing rapidly. Programs that train nursing assistants are tasked with preparing competent workers to meet this growing need as quickly as possible. Different regions of the United States have different requirements that govern the training of nursing assistants. Although different in the depth of training and the number of hours required, all nursing assistant educational programs must meet the minimum requirements established by the Omnibus Budget Reconciliation Act of 1987 (OBRA) for the number of hours and specific areas of curriculum taught. Many nursing assistant educational programs focus on providing the student with the foundational concepts and facts that they will need to function competently in the workplace, whether that workplace is a long-term care facility, hospital, acute or extended care facility, hospice agency, or home health care agency. These essential requirements are the focus of this book"— Provided by publisher.

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This book is dedicated to my mother, Dortha “Dot” Carter. Mama, you have always been there for me, pushing me to succeed as a nurse and be a better person. You have attended football games, where you worked in the concession stand, ridden many miles in a band bus, and traveled to visit your grandchildren. We never once questioned the fact that you loved us with all your heart. You were always on my mind when I worked on these books, and I told my students constantly to care for their patients and residents as if they were their own mothers. Now, as you prepare to leave us soon, it is so hard to let you go, but you will always live in my heart.

*“I’ll love you forever,
I’ll like you for always,
As long as I’m living,
my Mommy you’ll be.”
—Robert Munsch*

Munsch, R. N., & McGraw, S. (1986). Love you forever. Firefly Books.

And a special thanks to the Memory Care staff at Signal Mountain Senior Living, Chattanooga, TN, and Hospice of Chattanooga.

—Pam

About the Author

Pamela J. Carter is a registered nurse and an award-winning teacher. After receiving her bachelor's degree in nursing from the University of Alabama in Huntsville, Pamela immediately began her career as a perioperative nurse. Over the course of her nursing career, she also worked in a physician's office and as a staff nurse in an intensive care unit.

Pamela started teaching informally while serving as an officer in the United States Air Force Nurse Corps. She formally entered the field of health care education by accepting a position at the Athens Area Technical Institute in Athens, Georgia, where she taught surgical technology.

After obtaining a master's degree in adult vocational education from the University of Georgia, Pamela moved to Florida and took a position teaching nursing assistant students. She continued teaching nursing assistants after accepting a position at Davis Technical College in Kaysville, Utah.

During her first year at Davis Tech, Pamela piloted a new “open-entry/open-exit” method of curriculum delivery for the nursing assistant program and was presented with the Superintendent's Award for Outstanding Faculty for her work. She then opened a surgical technology program at Davis Tech and has obtained national accreditation from the Commission on Accreditation of Allied Health Education Programs (CAAHEP) for delivery of this program using the “open-entry/open-exit” method.

In 2002, and again in 2014, 2015, 2016, and 2017, Pamela received a National Merit Award for having her program rank in the nation's top 10% for students passing their national certification exam. After enjoying over 26 years teaching and preparing students to become health care professionals, Pamela has decided to return to her love of providing patient care to finish out her nursing career.

In addition to this textbook, Pamela has also authored *Lippincott Textbook for Nursing Assistants*, *Lippincott Textbook for Long-Term Care Nursing Assistants*, as well as *Lippincott Acute Care Skills for Advanced Nursing Assistants*. Pamela's writing style reflects her love of teaching and of nursing. She is grateful for the opportunity that teaching and writing have afforded her in sharing her experience and knowledge with those just entering the health care profession and in helping those who are new to the profession understand how they can have a profound effect on the lives of others.



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Acknowledgments

As we provide the sixth edition of this textbook for faculty and students, I want to thank all of you for your support and input that have been necessary to help me keep up with the ever-changing profession of health care.

Health care has undergone some unique and challenging changes since our last edition! Not only have these changes affected our society and how we interact with others, but they have increased our need to practice tolerance and respect for everyone. The pandemic has changed how we provide health care and also how we live our daily lives. It has also stressed our health care providers to the breaking point. As we work to regroup and move forward, it is our responsibility to teach and support the next generation of health care workers as they enter this field and face new challenges. Thank you all for your hard work as you strive to mentor and nurture the future of health care.

I wish to extend my sincere thanks to Jennifer Harrington, my contributing editor, for your insight and new ideas. And to Devika Kishore, Associate Development Editor, for her exceptional assistance in helping make this edition more streamlined, inclusive, and sensitive in content. She is such a pleasure to work with! Also to Anthony Gonzalez, Editorial Coordinator, who has worked so hard to keep this project on track. And finally, to Jonathan Joyce, Senior Acquisitions Editor, for continuing to believe in me and what I write. Without your support Jonathan, I would truly go insane at times. You are all exceptional and I am truly honored to be able to work with such a great team!

Nursing assistants are increasingly being hired by health care facilities of all types that are seeking ways to provide top-quality nursing care in the most efficient manner. As a result, the need for qualified, well-trained nursing assistants is growing rapidly. Programs that train nursing assistants are tasked with preparing competent workers to meet this growing need as quickly as possible. Different regions of the United States have different requirements that govern the training of nursing assistants. Although different in the depth of training and the number of hours required, all nursing assistant educational programs must meet the minimum requirements established by the Omnibus Budget Reconciliation Act of 1987 (OBRA) for the number of hours and specific areas of curriculum taught. Our nursing assistant educational programs focus on providing the student with the foundational concepts and facts that they will need to function competently in the workplace, whether that workplace is a long-term care facility, hospital, acute or extended care facility, hospice agency, or home health care agency. These *essential* requirements are the focus of this book.

Nursing assistant education is required to focus on skill competency. However, instilling in a new nursing assistant the confidence that they can perform the required skills properly is hardly enough. To function effectively in the health care setting, nursing assistants must also be able to recognize the person within the patient, resident, or client and to understand that each person they are responsible for providing care is unique and special, with individual needs that are very different from those of the person in the next bed. This textbook, *Lippincott Essentials for Nursing Assistants*, is written not only to help students become competent in performing the skills that are the basis of the daily care they provide, but also to teach students to provide that care with compassion and humanism.

Guiding Principles

Three key beliefs guided the writing of this textbook:

1. Students need a textbook that provides foundational concepts and facts in a manner that is easy to comprehend and interesting to read.
2. Graduates of nursing assistant training programs must be able to provide competent, skilled care in a compassionate way.
3. The nursing assistant is a vital member of the health care team.

These beliefs form the basis for the textbook you hold in your hands.

Lippincott Essentials for Nursing Assistants, 6e Is Written With the Student in Mind

Educators know that a student can easily understand complex information if it is explained in a way that the student can understand. I have worked hard to develop a conversational, yet professional writing style that respects the student's intelligence. Concepts are presented in a straightforward, accessible way. Only the most basic, essential information is included with the understanding that this foundational knowledge will be supplemented by classroom instruction and on-the-job training.

The structure of each chapter helps students in fast-paced, shorter nursing assistant programs learn and retain the information in the chapter. Each chapter is broken down into major sections, each with its own learning objectives (“**What Will You Learn?**”), vocabulary, and summary (“**Putting It All Together!**”). This approach allows the student to break up the reading assignment into smaller, more manageable parts.

Vocabulary words are highlighted in the text and defined in the margin. Illustrations are used as necessary to enhance and support the definitions.

Numerous photographs, both alone and in combination with line art, help the student to visualize and remember important concepts. Graphic elements, such as boxes and tables (many of which are illustrated), add visual interest and help to break up the monotony of large expanses of text.

Although the page count makes one think that this text is not short or concise, pages are set up in a “one-column” writing format so that information is spread out. The rationale behind this format style is to make the printed information look less intimidating to the student and easier to read and absorb.

New to This Edition!

Health care is always evolving, with new discoveries and advances in treatment occurring constantly. It seems that the more we learn, the more there is to know. We strive to ensure that the material found in our textbook is based on the latest information and is current at the time of publication.

A primary focus of this new edition has been to streamline current information by focusing more on the “need to know” content that students need to succeed. The artwork has been reviewed and updated for relevancy and currency. Unit 3, which covers information on anatomy, physiology, normal aging, and system-specific diseases, has been reviewed and updated. Due to an increasing awareness of the need for mental health care, especially among our older population, we have added a new chapter in Unit 6 devoted specifically to mental health disorders.

With this 6th edition, we wish to highlight the impact the COVID-19 pandemic had on how health care is provided. Changes in how we respond to communicable diseases have affected not only how health care workers provide care, but also how patients, residents, and clients live their daily lives. The infection control content in this book has been thoroughly updated, expanded, and reorganized into two separate chapters to improve student comprehension of this important topic.

Long-term care information, with a focus on the needs of long-term care residents, has been condensed into one chapter. Also, a new chapter about admissions, transfers, and discharges has been added to the book.

Also new to the 6th edition is contributing editor Jennifer Harrington, DNP, RN, HCE! Jennifer is currently a nursing assisting educator who has added her expertise to this book to ensure our material is relevant for today’s students. In particular, she has thoroughly reviewed the chapters in Unit 5, which relates to the daily care and procedures that nursing assistants provide on a routine basis.

Other updates specific to this edition are summarized as follows:

- Terminology has been updated where needed throughout the text, particularly for inclusive language.
- Updated information related to nutrition and new dietary recommendations from the *2020–2025 Dietary Guidelines for Americans* has been included, along with the related art and descriptions of MyPlate and MyPlate for Older Adults.

- Stop and Think! Scenarios have all been reviewed and updated where needed to align closely with situations students may face in the health care setting today.

It is my desire to help prepare students to enter the health care profession with the knowledge, skills, and confidence that education and training can provide. In addition, I want to help students develop the compassion and the critical thinking and communication skills they need to function effectively in the health care setting. Several of the textbook's features were designed specifically with these goals in mind:

- **Procedure boxes.** Certainly, a major objective of any nursing assistant training course is to ensure that graduates are able to provide care in a safe and correct manner. Each procedure in this text has been revised and updated in accordance with new infection control standards, current practice, and the current National Nurse Aide Assessment Program (NNAAP®) Skills List. Those particular skills can be found in the following chapters:
 - **Hand Hygiene (Hand Washing):** Chapter 13
 - **Applies One Knee-High Elastic Stocking:** Chapter 32
 - **Assists to Ambulate Using Transfer Belt:** Chapter 18
 - **Assists With Use of Bedpan:** Chapter 25
 - **Cleans Upper or Lower Denture:** Chapter 21
 - **Counts and Records Radial Pulse/Respirations/Blood Pressure:** Chapter 20
 - **Donning and Removing PPE (Gown and Gloves):** Chapter 13
 - **Dresses Client With Affected (Weak) Right Arm:** Chapter 23
 - **Feeds Client Who Cannot Feed Self:** Chapter 24
 - **Gives Modified Bed Bath:** Chapter 21
 - **Measures and Records Urinary Output:** Chapter 25
 - **Measures and Records Weight of Ambulatory Client:** Chapter 20
 - **Performs Modified PROM for Knee and Ankle/Shoulder:** Chapter 18
 - **Positions on Side:** Chapter 17
 - **Provides Catheter Care for Female:** Chapter 25
 - **Provides Foot Care:** Chapter 23
 - **Provides Mouth Care:** Chapter 21
 - **Provides Perineal Care for Female:** Chapter 21
 - **Transfers From Bed to Wheelchair Using Transfer Belt:** Chapter 17

Seventy-four core procedures are presented in this text. The procedures for each chapter are grouped at the end of the chapter to avoid breaking up the text with lengthy boxes. Each procedure box begins with a “Why You Do It” statement to help students understand the “why behind the what.” This understanding is the foundation for the development of critical thinking skills. The concepts of privacy, safety, infection control, comfort, and communication are emphasized consistently in every procedure. “Getting Ready” and “Finishing Up” steps are included in every procedure box to help students remember these very important pre- and post-procedure actions. Mnemonics for the pre- and post-procedure actions are employed to help students remember the steps. The steps of the procedure are given using clear and concise language. Photographs and illustrations are provided as necessary. A “What You Document” section at the end of each procedure reminds students to document care given and what important observations should be noted.

PROCEDURE 20-8
Taking an Apical Pulse

WHYYOU DO IT: An apical pulse is taken when a person has a weak or irregular pulse that may be difficult to feel in the radial artery. An apical pulse may also be used to measure heart rate in infants and in people with known heart disease.

GETTING READY       

1. Complete the “Getting Ready” steps.

SUPPLIES

- Alcohol wipes
- Dual-sided stethoscope
- Watch with second hand

PROCEDURE

2. Help the person to a semi-sitting position by raising the head of the bed.
3. Using alcohol wipes, clean the earpieces, the diaphragm, and the bell of the stethoscope. Place the earpieces in your ears.
4. Place the diaphragm (or the bell, if the person is a child or an infant) of the stethoscope under the person’s clothing, on the apical pulse site (located approximately 2 inches below the person’s left nipple). The diaphragm or bell must be placed directly on the person’s skin because clothing will distort the sound.
5. Using two fingers, hold the diaphragm or bell firmly against the person’s chest. Look at your watch and wait until the second hand gets to the “12” or “6.” When the second hand reaches the “12” or the “6,” begin counting the heartbeat.
6. Count the number of heartbeats that occur in 60 seconds. Each time the heart beats, you will hear two sounds, best described as a “lubb” and a “dupp.” Both sounds make up one beat of the heart and should be counted as such.



STEP 5 Hold the diaphragm or bell firmly against the person’s chest.

7. After 60 seconds, remove the diaphragm of the stethoscope from the person’s chest. Adjust the person’s clothing as necessary and help the person back into a comfortable position. Lower the head of the bed, as the person requests.
8. Using alcohol wipes, clean the earpieces, the diaphragm, and the bell of the stethoscope.

FINISHING UP        

9. Complete the “Finishing Up” steps.

WHAT YOU DOCUMENT

- The date and time
- The pulse rate
- The pulse rhythm
- The pulse amplitude
- The method “A” for apical

Report an abnormal pulse rate, rhythm, or amplitude to the nurse immediately.

Procedure Box: Step-by-step instructions for key nursing assistant actions.

- **Guidelines (“What You Do/Why You Do It”) boxes.** These boxes summarize guidelines for carrying out key nursing assistant actions. The unique “What You Do/Why You Do It” format helps students to understand why things are done a certain way. I believe that if students understand why something is done a certain way, they will be more likely to remember to do it that way.

Guidelines Box (“What You Do/Why You Do It”): Guidelines and rationales for key nursing assistant actions.

Tell the Nurse! Note: Observations that need to be reported to the nurse.

Tell the Nurse!


Signs of infection

- Fever (older people may only have a slight increase in body temperature, or even no increase at all)
- A rapid pulse, a rapid respiratory rate, or changes in blood pressure
- Pain or difficulty breathing
- Redness, swelling, or pain
- Foul-smelling or cloudy urine
- Pain or difficulty urinating
- Diarrhea or foul-smelling feces
- Nausea or vomiting
- Lack of appetite
- Skin rashes
- Fatigue
- Increased confusion or disorientation
- Any unusual discharge or drainage from the body

Stop and Think! Scenario: Situations to promote critical thinking.

GUIDELINES BOX 13-2 Guidelines for Using Gloves	
What you do	Why you do it
If the glove tears when you are putting it on, discard it.	A glove that has a hole or tear will not protect your hands from contamination.
Choose gloves that fit properly.	Gloves that are too tight are uncomfortable and may tear. Gloves that are too loose will not stay on your hands.
Use gloves made from another material if you or the person you are caring for is sensitive to latex.	Depending on the severity of the allergy, exposure to latex can cause redness and cracking of the skin, a severe rash, or problems breathing.
Remove contaminated gloves before touching any other surface. You may need to change gloves several times during one procedure.	Replacing your gloves when they become contaminated prevents the transfer of pathogens from dirty areas to clean areas. If you touch a surface (such as the side rail, light switch, or doorknob) with your contaminated gloves, the pathogens will be transferred from your gloves to that surface. The next person who touches the surface could then pick up the pathogens you left there with your contaminated gloves.
Perform hand hygiene after removing gloves.	Gloves are easily torn or may have holes too small to see, causing your hands to become contaminated. Proper hand hygiene removes any microbes that may be on your hands.

- **Tell the Nurse! notes.** A recurrent theme throughout the book is the important role the nursing assistant plays in making observations about the patient’s or resident’s condition and reporting these observations to the nurse. The *Tell the Nurse!* notes highlight and summarize signs and symptoms that a nursing assistant may observe that should be reported to the nurse. This information is presented within a context to help students remember and apply the information.
- **Stop and Think! scenarios.** Each chapter concludes with one or more *Stop and Think!* scenario. These updated scenarios encourage students to critically solve problems and help them to see that many situations they will encounter in the workplace do not have cut-and-dried answers.



Mr. Joyce, one of the residents with dementia at the long-term care facility where you work, has been agitated since the nurse placed an indwelling Foley catheter at the start of the shift. You notice Mr. Joyce has been tugging on the catheter tubing and you are very concerned that he may injure himself by tugging too hard. You can’t distract him all day, because you have other residents to attend to as well. Describe some things you could do to help keep Mr. Joyce safe, and prevent him from doing serious harm.

- **Nurse Pam.** Nurse Pam, modeled and named after the author of this book, appears throughout the text in various scenarios to encourage students to better empathize with their patients or residents.

Nurse Pam: Highlights humanistic care.

When caring for a person with a communicable disease, it is very important to remember the person's feelings. We work hard to follow all of the procedures that help to prevent the spread of infection, and this is a very important part of providing care. However, sometimes it is easy to forget about how the person with the infection might feel. How would you feel if a health care worker had to wear gloves or a mask every time they came near you? How would you feel if you had to stay in your room all of the time with the door closed? The person may feel isolated and lonely, and desperately miss the company of other people. When you are caring for a patient or resident with a communicable disease, checking on the person frequently and taking the time to talk with the person when you are providing care can help to make the person feel better.



- **Concerns for Long-Term Care.** This feature is found throughout the textbook and focuses on specific information that is important to remember when providing care for older residents in Long-Term Care settings.

CONCERNS FOR LONG-TERM CARE

Long-term care facilities are often understaffed, creating an increased workload for the nursing assistants who work there. There are so many residents who need assistance getting to the dining hall or to the activities room and only one you! Although using a wheelchair to transfer a resident may be quicker or easier for you, it can result in unnecessary dependence and a decline in the resident's overall abilities. Walking helps to preserve mobility, improves heart and lung function, and promotes digestion. Walking can also stimulate and help preserve a resident's mental functioning.

Concerns for Long-Term Care: Covers needs for residents in long-term care settings.

Taking It to the Next Level: Advanced Skills

More in-depth information related to advanced skills used when performing procedures requiring sterile technique can be found in *Lippincott Acute Care Skills for Advanced Nursing Assistants*.

Visit [thePoint®](http://thePoint.com) at thePoint.com. Visit www.com/CarterAcuteCare1e for access to the ebook.

- **Taking It to the Next Level: Advanced Skills.** This feature is found throughout the textbook where related information on advanced skills that nursing assistants may be providing in an advanced care setting can be accessed through the e-book.

Taking It to the Next Level: Advanced Skills: Highlights skills in an acute care setting.

Lippincott Essentials for Nursing Assistants, 6e **Promotes Pride in the Profession**

It is my desire to impress upon students entering the health care profession that no one is “just” a nursing assistant. Nursing assistants are often the members of the health care team with the most day-to-day contact with patients, residents, and clients. As such, they bear a large part of the responsibility for the well-being of those in their care. Nursing assistants who feel that they can and do make a difference in the lives of others will go the “extra mile” to ensure that the care they provide is humanistic.

An Overview of Lippincott Essentials for Nursing Assistants, 6e

This textbook consists of six units. The following is a brief survey of these units and the information they contain.

Unit 1: Introduction to Health Care

The four chapters that make up Unit 1 provide the student with basic background knowledge:

- **Chapter 1** introduces the student to the health care setting and the governmental regulations that play a role in establishing standards and funding for health care. The nursing home survey process is introduced so that students become better informed of how regulatory organizations determine a facility’s ability to provide quality care to the residents. Chapter 1 also introduces the humanistic approach to health care.
- **Chapter 2** focuses on the nursing assistant’s responsibilities as a member of the health care team. The concepts of delegation and the nursing process are introduced. In addition, Chapter 2 explores legal and ethical issues related to the nursing assistant’s job, including patient and resident rights, the Health Insurance Portability and Accountability Act (HIPAA), advance directives, and abuse. Information that is specific to abuse and defining “vulnerable adults” who are often victims of abuse is included.
- **Chapter 3** discusses the many aspects of professionalism, job-seeking skills, and the concept of work ethic. It introduces students to the idea that a professional attitude promotes respect and is necessary for career advancement.
- **Chapter 4** discusses communication, one of the most essential responsibilities of the nursing assistant.

Unit 2: Caring for People in a Health Care Setting

Unit 2 is a new, reorganized unit that contains four chapters focusing on the needs of people receiving care in the health care setting.

- **Chapter 5** focuses on the central member of the health care team—the patient, resident, or client. This chapter introduces the concept of human needs and explains how the person being cared for in a health setting has many needs other than those specifically associated with illness or disability. The impact that illness and disability have on a patient’s or resident’s family members and their need to be involved in the person’s plan of care are also addressed.

- **Chapter 6** introduces the student to the long-term care setting. This chapter discusses the people who receive care in the long-term care facility, the factors leading up to their admission, and the special needs they and their families may have.
- **Chapter 7** focuses on the person's environment in a health care setting. OBRA requirements related to the physical environment of a long-term care setting are listed and explained.
- **Chapter 8** is a new chapter that explains the processes for admitting, transferring, or discharging people within the health care setting.

Unit 3: Body Systems: Normal Function and the Effects of Aging and Disease

Unit 3 has been reviewed and updated to provide the most current information related to body systems. Having a basic understanding of how each of the body's organ systems functions in health is essential to understanding how failure of an organ system to work properly leads to disease and disability.

- **Chapter 9** gives a basic description of the structure and function of each of the body's organ systems. In addition, for each organ system, the effects of the normal aging process on that organ system's function are described.
- **Chapter 10** discusses disorders that frequently create the need for a person to be cared for in a health care setting. Information related to caring for people who have cancer has been added to this chapter.
- **Chapter 11** emphasizes the importance of the role that the nursing assistant plays in rehabilitation and restorative care.

Unit 4: Safety

The five chapters in this unit are concerned with measures taken to ensure safety, both for the patient or resident and for the nursing assistant.

- **Chapter 12** covers current information about communicable diseases and how they are transmitted in the health care setting. Common communicable diseases are discussed, along with how they affect a person who has been infected.
- **Chapter 13** continues the discussion with information on how the spread of communicable disease is prevented in the health care setting. Updated recommendations by the CDC and information regarding the management of epidemics and pandemics are also included.
- **Chapter 14** deals with workplace safety and includes an extensive discussion about the importance of using proper body mechanics and ergonomics to prevent work-related injuries. Information related to workplace violence and tips on how to avoid violence and remain safe at the workplace has been included. Also in Chapter 14, the student is introduced to the "Getting Ready" and "Finishing Up" steps that are taken before and after each procedure. Colorful and descriptive mnemonics help students to easily remember each of these important pre- and post-procedure steps.
- **Chapter 15** explores some of the conditions that put patients and residents at risk for injury, followed by a discussion about methods used to prevent accidents from occurring. Restraints, with a focus on methods that can be used as alternatives to restraints, are discussed in-depth. Information and guidelines to help prevent "entrapment" have been included in this chapter.

- **Chapter 16** contains information related to recognizing emergencies and responding to them. This chapter also includes the current AHA Guidelines for BLS and procedures for clearing an obstructed airway.

Unit 5: Basic Patient and Resident Care

The eleven chapters in this unit focus on the skills and equipment used to provide basic daily care to people in a health care setting. Each chapter has been reviewed for adherence to current practice in the health care setting.

- **Chapter 17** explains the techniques used to safely assist patients and residents with repositioning and transferring.
- **Chapter 18** discusses the complications that can result from immobility and explains how to safely assist a person with ambulation and exercise in a health care setting.
- **Chapter 19** describes bedmaking skills.
- **Chapter 20** covers vital signs, height, and weight. Many students find the procedures related to taking vital signs intimidating and difficult to master at first, so encouragement and practical tips are included throughout.
- **Chapter 21** covers bathing and routine skin care.
- **Chapter 22** focuses on the prevention and treatment of pressure ulcers and other types of wound care. This chapter also contains current information about the staging of pressure ulcers.
- **Chapter 23** covers routine grooming.
- **Chapter 24** contains current dietary recommendations from the 2020–2025 *Dietary Guidelines for Americans* and introduces MyPlate and MyPlate for Older Adults. Basic nutrition is presented in a factual, useful manner without undue emphasis on specific diets, as research indicates these diets continue to change. Information about preparing and serving thickened liquids is included.
- **Chapters 25 and 26** cover urinary and bowel elimination, respectively.
- **Chapter 27** concludes the unit explaining how the nursing assistant helps to promote comfort, including a discussion about the importance of recognizing and reporting signs of pain.

Unit 6: Special Care Concerns

The final unit in this text contains five chapters that cover special care situations that the nursing assistant will most likely encounter during a career in health care. A new chapter focusing on mental health disorders has been included.

- **Chapter 28** describes how a person and their loved ones cope with a terminal illness and impending death. The care provided to the dying person in the hours leading up to, and following, death is also discussed.
- **Chapter 29** discusses the different types of dementia, a condition that affects many long-term care residents.
- **Chapter 30** reviews some of the major types of developmental disabilities, along with updated information related to each disability.
- **Chapter 31** is a new chapter dedicated to a discussion about mental health disorders, including the importance of recognizing depression in older adults. Information regarding post-traumatic stress disorder and substance use disorder has also been included.
- **Chapter 32** discusses the special care required by patients and residents before and after a surgical procedure.

Appendices

The textbook concludes with two appendices.

- **Appendix A** consists of the answers to the **What Did You Learn?** exercises that appear at the end of each chapter.
- **Appendix B** introduces the student to the language of health care. This discussion about medical terminology is included as an appendix so that it can be introduced at any point during the training course and referred to frequently. The tables containing common roots, prefixes and suffixes, and abbreviations are in close physical proximity to the glossary for easy and quick reference. Also included in Appendix B is The Joint Commission's "Do Not Use" abbreviations list.

A Note About the Language Used in This Book

Wolters Kluwer recognizes that people have a diverse range of identities, and we are committed to using inclusive and nonbiased language in our content. In line with the principles of nursing, we strive not to define people by their diagnoses, but to recognize their personhood first and foremost, using as much as possible the language diverse groups use to define themselves, and including only information that is relevant to nursing care.

We strive to better address the unique perspectives, complex challenges, and lived experiences of diverse populations traditionally underrepresented in health literature. When describing or referencing populations discussed in research studies, we will adhere to the identities presented in those studies to maintain fidelity to the evidence presented by the study investigators. We follow best practices of language set forth by the Publication Manual of the American Psychological Association, 7th edition, but acknowledge that language evolves rapidly, and we will update the language used in future editions of this book as necessary.

A Comprehensive Package for Teaching and Learning

A carefully designed ancillary package of multimedia tools is available for this text to further facilitate teaching and learning.

Resources for Instructors

Tools to assist you with teaching your course are available on **thePoint**[®] at <https://thePoint.lww.com/CarterEss6e>.

- *Lippincott Acute Care Skills for Advanced Nursing Assistants* first edition ebook. Depending on the needs of the different types of facilities that hire nursing assistants, the skills required and the daily duties of the nursing assistant vary greatly. As a nursing assistant advances within their career, the need for additional training increases.

Because of this, we are providing an ebook addition, titled *Lippincott Acute Care Skills for Advanced Nursing Assistants*, as a companion to this textbook. We feel that the ebook companion will be a useful tool for nursing assisting instructors who teach advanced skills in their programs. It has also been

developed for use by nursing assistants who have completed their basic nursing assisting training and have obtained employment in an acute care setting where they are required to perform advanced skills.

- **Lippincott CoursePoint.** This integrated, digital curriculum solution for nursing education provides other course knowledge and prepares students for practice. The time-tested, easy-to-use and trusted solution includes engaging learning tools and in-depth reporting to meet students where they are in their learning. This easy-to-use digital learning solution of *Lippincott CoursePoint*, combined with unmatched support, gives instructors and students everything they need for course and curriculum success!

Lippincott CoursePoint includes:

- Engaging course content provides a variety of learning tools to engage students of all learning styles.
 - Adaptive and personalized learning helps students learn the critical thinking and clinical judgment skills needed to help them become practice-ready nursing assistants.
 - Unparalleled reporting provides in-depth dashboards with several data points to track student progress and help identify strengths and weaknesses.
 - Unmatched support includes training coaches, product trainers, and nursing education consultants to help educators and student implement CoursePoint with ease.
- **Lippincott Video Series for Nursing Assistants.** Procedure-based modules provide step-by-step demonstrations of the core skills that form the basis of the daily care the nursing assistant provides. As in the textbook, all procedures have been reviewed and updated in accordance to current practice, infection control, and the current NNAAP skills. *Getting Ready and Finishing Up* actions are reviewed on every procedure-based module, and the concepts of privacy, safety, infection control, comfort, and communication are emphasized throughout. Four non-procedure-based modules, on the topics of preparing for entry into the workforce, caring for people with dementia, death and dying, and communication and patient and resident rights, are also available. Tools to assist you with teaching your course are available upon adoption of this text on [thePoint®](https://thePoint.lww.com/CarterEss6e) at <https://thePoint.lww.com/CarterEss6e>.
 - **Updated Stop and Think! Scenario Discussion Points** outline the main concepts of the text's *Stop and Think!* feature.
 - A **Test Generator** lets you put together exclusive new tests from a bank containing hundreds of questions to help you in assessing your students' understanding of the material. Test questions link to chapter learning objectives.
 - **PowerPoint Presentations** provide an easy way for you to integrate the textbook with your students' classroom experience, either via slide shows or handouts. Multiple-choice and true/false questions are integrated into the presentations to promote class participation and allow you to use i-clicker technology.
 - **Answers to Workbook for Lippincott Essentials Nursing Assistants, 6e**
 - **Assignments, Pre-Lecture Quizzes, and Discussion Topics**, along with their answers, are ready to use in-class or at-home as supplemental exercises for your students.
 - **Guided Lecture Notes** include Learning Objectives and references to PowerPoint presentation slides.
 - Plus an **Image Bank** and **Sample Syllabi** for long and short courses

Resources for Students

An exciting set of free resources is available on [thePoint](#)[®] to help students review material and become even more familiar with vital concepts. Students can access all these resources at thePoint.lww.com/CarterEss6e using the codes printed in the front of their textbooks.

- **Watch and Learn!**, a series of video clips that support information given in the text
- **Certification-Style Review Questions** for each chapter help students review important concepts and practice for certification exams.
- Plus downloadable **Procedure Checklists** created from the procedures in each chapter walk through each procedure step by step.

Students can also supplement their studying with the *Workbook for Lippincott Essentials for Nursing Assistants, 6e*. This illustrated workbook provides the student with a fun and engaging way of reviewing important concepts and vocabulary. Each part of the student workbook has been updated and revised alongside the changes made in the sixth edition of the textbook. Multiple-choice questions, matching exercises, true–false exercises, word finds, crossword puzzles, coloring and labeling exercises, and other types of active learning tools appeal to many different learning styles. The workbook also contains procedure checklists for each procedure in the textbook.

It is with great pleasure that my colleagues and I introduce these resources to you. One of our primary goals in creating these resources has been to share with those just entering the health care field our sense of excitement about the health care profession and our commitment to the idea that being a nursing assistant involves much more than just “bedpans and blood pressures.” I hope we have succeeded in that goal, and I welcome feedback from our readers.

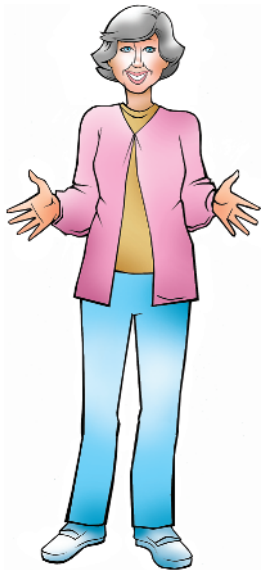
Pamela J. Carter

How to Use This Book to Prepare for Class and Study

Learning is an active process. You need to read, make notes, and ask questions about anything you are having trouble understanding. Most students who are successful learners take a three-step approach to learning:

Preview

During the *preview* stage of learning, you focus on preparing yourself for class. Most likely, your instructor will give you reading and possibly video assignments



Welcome! Health care is an exciting, yet demanding, field. During your training course, you will be expected to learn and apply a lot of new information. My name is Pam Carter, and I am the author of this book. It is my pleasure and my honor to assist you on your journey toward becoming a health care professional. Let me begin by explaining to you a little bit about how you can use this book to prepare for class and study.

that must be completed before each class. The course *syllabus* that you will receive at the beginning of the course will tell you when each reading assignment must be completed. The reading assignments give you the chance to get a general idea of what is going to be discussed in the next class.

To prepare for class, just read the assignment as if you were reading a novel, magazine, or a news story for enjoyment. During the preview, you do not need to take notes or try to memorize facts—just read through the material to get the “big picture” of the information you are about to learn. Some people find it helpful to read the chapter out loud to themselves

(or record themselves reading it so that they can listen to the chapter again later). Others like to highlight parts of the chapter or make notes in the margin. Learning becomes much easier when you discover what methods work best for you.

To assist you with previewing, each section in each chapter begins with a *What Will You Learn?* section. This section contains a list of specific goals for that section, called *learning objectives*. Learning objectives tell you what you will be expected to know or be able to do to demonstrate complete understanding of the material in that section of the chapter. During the preview stage, the learning objectives can be very useful in giving you an overview of the key goals of that section.

What Will You Learn?:
Specific goals for the section.

What will you learn?

When you are finished with this section, you will be able to:

1. Briefly describe the different types of germs that can cause disease.
2. Discuss the conditions that promote the growth of germs.
3. Define the words **microbe** and **pathogen**.

The *What Will You Learn?* section also contains a list of the new vocabulary words you will need to learn. The vocabulary words, which appear in **bold type** throughout the chapter, are listed in the order that they appear. The definition of each vocabulary word is found in the margin near where the word appears in the text. Familiarizing yourself with the chapter's vocabulary words before class puts you one step ahead because when you hear those words in class, they will not sound strange to you, and you may already know what they mean.

View

The *viewing* stage is when you get down to business and really work to understand the material. During the classroom lecture or discussion, highlight important points and take notes as you need to. Ask questions about any of the material that you do not fully understand. Remember, there are no “stupid” questions! If you do not fully understand something, you need to speak up so that the instructor can help you. This is your instructor's job.

Review

After class, go back over the notes you took in class and review the chapter in your book. Some students like to read the entire chapter over again. Others just skim the chapter, paying close attention to the topics they still have questions about. Each section in the chapter closes with a short summary called *Putting It All Together!*, which repeats and summarizes the key concepts of that section.

When you feel comfortable with your understanding of the material, test yourself! Go back to the learning objectives in the *What Will You Learn?* section at the beginning of each section in the chapter and pretend they are questions. Try to answer them. If you have trouble answering them, then you know that you need to review those sections of the chapter again.

You can also test yourself using the *What Did You Learn?* section at the end of each chapter. The answers to the questions in the *What Did You Learn?* section are in Appendix A at the back of the book, so that you can see how well you understood the material you just studied. Again, if you have trouble answering these questions, then you will know that your studying is not quite finished! You may need to read certain parts of the chapter again, or ask your instructor for help.

Try to set aside short periods of time for studying each day. For example, you might study for 30 to 45 minutes, take a break to do other activities or chores, and then come back and study for another 30 to 45 minutes. After 30 to 45 minutes of studying, most people become tired and lose their ability to concentrate. Studying in short bursts will help keep you focused on the material you are trying to learn.

Putting it all together!

- Communicable infections are infections that can be spread from one person to another.
 - Microbes are generally classified as bacteria, viruses, fungi, or parasites.
 - Microbes that cause illness are called pathogens.
 - Most pathogens prefer an environment that is warm, moist, dark, and with proper amounts of oxygen.
-

Putting It All Together!:
A review of key points from the section.

WHAT DID YOU LEARN?

MULTIPLE CHOICE

Select the single best answer for each of the following questions.

1. Mr. Davis is recovering from a stroke that left him weak on his right side. He is now ready to start walking again. Which assistive device would be best for Mr. Davis?
 - a. Crutches
 - b. A cane held in his right hand
 - c. A walker
 - d. A cane held in his left hand
2. Assisting a person to walk on a regular basis helps to do all of the following except:
 - a. Improve a person's appetite
 - b. Prevent complications of immobility
 - c. Cause constipation
 - d. Promote rest and sleep
3. A patient or resident performs the ordered range-of-motion exercises independently in which type of exercise?
 - a. Active-assistive
 - b. Passive
 - c. Active
 - d. Flexion
4. The proper height for a cane is:
 - a. Handle level with the person's hip
 - b. Handle level with the person's waist
 - c. Handle slightly above the person's waist
 - d. Handle slightly below the person's hip

What Did You Learn?: A tool for self-assessment.

How to Prepare for Tests

Did you learn the material or not? This is what instructors want to know when they give tests, quizzes, and exams. Not doing well on a test does not mean that you are a failure. It just means that you need to figure out what went wrong and make an effort to improve the next time. Perhaps you did not study as well as you could have for the test. Or maybe you got so nervous, you forgot everything you learned when it came time to take the test!

The course syllabus will tell you when a test is scheduled to be given and what material it will cover. Mark these dates on your calendar, so you are not surprised! Preparing for a test should not be a major event. If you use the preview-view-review approach and study each day, when the time comes to prepare for the test, you will be very well prepared. In the days leading up to the test, all you will need to do is review the material that will be covered on the test one more time, by skimming the chapters in the book and reviewing the notes you took in class.

When it is time to actually take the test, remember the following tips:

- Relax! You have prepared for this test, and you know the answers to these questions!
- Take a deep breath and make sure you read the directions carefully. The directions will tell you whether there is only one correct answer for each question or whether it is possible for a question to have more than one correct answer.
- Read each question completely and carefully. Many students answer questions incorrectly simply because they are in a hurry and miss important words, like “except” or “not.”
- If the question is a multiple-choice question, try to state the answer in your head before looking at the answer choices. Then read each answer choice before

choosing the one that best matches the answer you have in your head. This will increase your confidence that the answer you have selected is the correct one.

- After selecting an answer, avoid second-guessing yourself. Research has shown that your first choice is most likely to be correct, if you studied the material well. Sometimes, however, you will come across a question later in the test that makes you realize that you answered an earlier question incorrectly. In this case, when you are sure that you have made a mistake, it is alright to go back and change your answer. But if you do not have a clear idea of what the correct answer is, doubting your first choice will most likely result in changing a correct answer to an incorrect one!
- If you cannot answer a question, go on to the next. Often, another question on the test will jog your memory and help you to remember the answer to the question you skipped earlier. Just remember to go back over your answer sheet before you hand in your test to make sure you have answered all of the questions.

Many people think that the goal of studying is to pass a test. It is true that as you work through your training course, you will have to pass many tests. And most states require people who want to be nursing assistants to pass a certification exam at the end of the training course. But passing the test is a short-term goal. It is more important for you to be able to remember and use the information that you learned during your training course long after you complete the course and pass the certification exam. The people you will be caring for are depending on you to be knowledgeable and good at what you do. They will be trusting you with their health and well-being. Study hard, ask questions, and remember that each and every person you care for throughout your career deserves the same type of competent, compassionate care that you would expect to be given to your own parents, partner, sibling, or child. As a nursing assistant, you will have the chance to have a positive effect on the lives of many people.

Caring for those in need is very important work. Let me be among the first to thank you for your interest in pursuing a career in health care and to wish you luck on your journey.

Sincerely,
Pam

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Safety

As a nursing assistant, one of your most important responsibilities is to keep your patients or residents safe. Keeping yourself safe while you are at work is important too. Maintaining safety is the focus of Unit 4.

- 12 Communicable Disease
- 13 Preventing the Spread of Communicable Disease
- 14 Workplace Safety
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Communicable Disease

An infection is an illness caused by germs. Many (but not all) infections are *communicable*, which means that they can be spread from one person to another. Some communicable infections, such as the common cold and the flu, are very easily spread and are considered *contagious*. There are many factors that come together in the health care setting to make it easy for infections to spread. In this chapter, you will learn about common communicable diseases found in the health care setting and how they are spread.



Photo: Immunizations help to control the spread of communicable disease, both within the health care setting and in the outside world.

Causes of Infection

What Will You Learn?

When you are finished with this section, you will be able to:

1. Briefly describe the different types of germs that can cause disease.
2. Discuss the conditions that promote the growth of germs.
3. Define the words **microbe** and **pathogen**.

Microbe a living thing that cannot be seen with the naked eye; examples include bacteria and viruses

Pathogen a microbe that can cause illness

Infections occur when the body has been invaded by **microbes** or “germs.” There are many different types of microbes. Microbes can be generally classified as bacteria, viruses, fungi, or parasites (Table 12-1). Some microbes are harmless or even helpful. But others can cause disease. A microbe that can cause disease or infection is called a **pathogen**.

Pathogens, like any other type of living thing, require certain conditions to grow and multiply. Most pathogens prefer an environment that is warm, moist, and dark. Some pathogens need oxygen to live, while others do not. When you are caring for people in a health care setting, you can make it harder for pathogens to grow and multiply just by keeping your patients and residents clean and dry and their environment clean, dry, and well lighted.

Putting it all together!

- Communicable diseases are infections that can be spread from one person to another.
- Microbes are generally classified as bacteria, viruses, fungi, or parasites.
- Microbes that cause illness are called pathogens.
- Most pathogens prefer an environment that is warm, moist, dark, and with proper amounts of oxygen.

Defenses Against Infection

What will you learn?


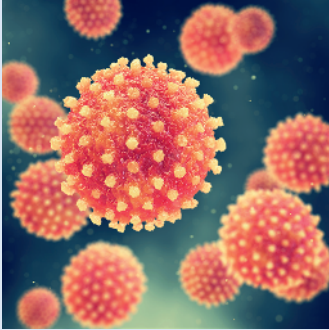
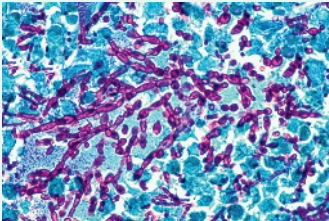


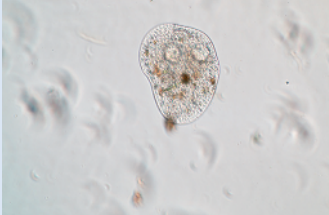
When you are finished with this section, you will be able to:

1. Explain the defense mechanisms the body uses to fight infection.
2. Define the word **antibodies**.

The Immune System

Some of the body’s defenses against pathogens are *nonspecific*, which means that they help to protect us from all infections. Other defenses are *specific*, which means that they help to protect us only from certain infections.

Table 12-1 Types of Microbes

	Type	Examples of Commonly Caused Infections
	Bacteria	Strep throat, urinary tract infections, abscesses, tuberculosis (TB), bacterial meningitis, Lyme disease, Rocky Mountain spotted fever, syphilis
	Viruses	HIV/AIDS, hepatitis, fever blisters, common cold
	Fungi	Ringworm, athlete's foot, vaginal yeast infections (candidiasis), oral yeast infections (thrush)
	Parasites Insects	Scabies, pediculosis (lice)
	Helminths (worms)	Pinworm infestation
	Protozoa	Malaria, amebic dysentery (traveler's diarrhea)

Tell the Nurse!

Signs of infection

- Fever (older people may only have a slight increase in body temperature, or even no increase at all)
- A rapid pulse, a rapid respiratory rate, or changes in blood pressure
- Coughing, pain, or difficulty with breathing
- Redness, swelling, or pain
- Foul-smelling or cloudy urine
- Pain or difficulty urinating
- Diarrhea or foul-smelling feces
- Nausea or vomiting
- Lack of appetite
- Skin rashes
- Fatigue
- Increased confusion or disorientation
- Any unusual discharge or drainage from the body

Antibodies specialized proteins produced by the immune system that help our bodies fight off specific pathogens, preventing infection

Nonspecific Defense Mechanisms

Our first line of defense against infection includes healthy skin and mucous membranes:

- Skin that is without cuts, scrapes, or wounds physically prevents pathogens from entering the body. Keeping the skin clean and dry helps to reduce the number of pathogens on the skin, also reducing the risk of infection.
- Mucous membranes line all of the organ systems that open to the outside of the body (the respiratory system, the digestive system, the urinary system, and the reproductive system). The sticky mucus they secrete traps and destroys pathogens. Practicing good oral hygiene and drinking plenty of fluids help to keep mucous membranes functioning properly.

If a pathogen manages to get past these first lines of defense and an infection results, the body activates a general immune response that helps to fight off the infection:

- Blood vessels around the site of the infection dilate (widen), allowing more blood flow to the area. The increased blood flow causes the area to become red, hot, swollen, and painful. But the increased blood flow also brings more oxygen and nutrients to the tissues, along with large numbers of white blood cells (leukocytes). White blood cells destroy pathogens that invade the body either by eating them (Fig. 12-1) or by secreting substances that cause them to die.
- The person may also develop a fever (high body temperature). The fever causes the pathogen's environment to become too hot, and the pathogen dies. Fever is a normal response in many infections.

As a nursing assistant, it is important for you to watch for signs of infection in your patients or residents. Some infections, if not treated at an early stage, can be very dangerous.

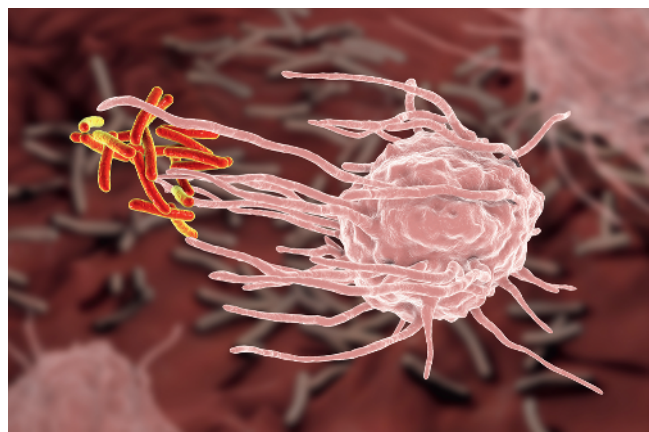
Specific Defense Mechanisms

Our bodies produce **antibodies** following exposure to certain pathogens. This exposure may come from a previous infection with the pathogen or through a vaccination (shot). For example, the antibodies that build up in the body following an episode of chickenpox are the reason most of us only get this “childhood disease”

FIGURE 12-1

In this photograph, a white blood cell has trapped and is preparing to engulf and kill a pathogen by eating it. This is a process called phagocytosis (*phago* means “eat” and *cyt* means “cell”).

(Kateryna Kon/Shutterstock.com)



once. Similarly, when you get your annual “flu shot,” what you are getting is a dose of the virus strains that cause the flu. The viruses have been killed so that you do not actually get sick, but the exposure is enough to cause your immune system to begin producing antibodies against those particular strains of the virus. That way, if you are exposed later, you will not get sick.

Medications

Many medications are available to help us fight infections:

- *Antibiotics* are used to treat bacterial infections.
- *Antimicrobial agents* are used to treat fungal and parasitic infections.
- *Antiviral agents* are used to treat viral infections.

Although these medications help us to treat many infections, not all infections can be treated with medications. In some cases, no medication has been found that is effective against the pathogen. In other cases, a medication that used to work against the pathogen no longer works. These bacteria, known as “multidrug-resistant organisms (MDROs),” are resistant to one or more types of antibiotics that could have been effectively used against them in the past. Two particular MDROs, methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcus (VRE), are easily spread from person to person in a health care setting, usually by the hands of health care workers. Bacteria that have become resistant to antibiotics can cause serious problems, especially for people who are in a health care setting.

Sometimes, the powerful antibiotics that are used to treat infections destroy other bacteria that help keep us healthy. When this happens, other bacteria that are not destroyed will grow rapidly. One such bacterium, *Clostridium difficile* (commonly called *C. diff*) is a major cause of health care–associated diarrhea. *C. diff* is easily spread from person to person in a health care setting and has been responsible for large outbreaks that can be fatal for patients or residents already weakened by illness or advanced age.



Putting it all together!

- The immune system’s nonspecific defense mechanisms against pathogens include the physical barriers provided by the skin and mucous membranes and the general immune response.
- The immune system’s specific defense mechanisms against pathogens include antibodies. A person can develop antibodies either by having an infection or by receiving a vaccination.
- Antibiotics, antimicrobial agents, and antiviral agents are medications that are used to treat some kinds of infections. Not all infections can be treated with medications.

The Chain of Infection

What will you learn?

When you are finished with this section, you will be able to:

1. List and describe the six key conditions that must be met for an infection to be spread from one person to another.
2. Explain how the chain of infection can be broken.
3. List reasons why communicable diseases may be more easily transmitted in a health care setting.
4. Define the words **health care–associated infections (HAIs)** and **nosocomial infections**.

For a person to get a communicable disease, six key conditions must be met. These six key elements are known as the chain of infection (Fig. 12-2). The chain of infection can be broken by taking away just one of the six required elements (Fig. 12-3).

In the health care setting, it is common to have a large number of patients and residents living in a small area. There are also many people providing care for those people and visitors who come into a facility on a regular basis. Just this sheer number of people under one roof dramatically increases the types of communicable diseases and the methods in which they can be transmitted. Exposure to pathogens is increased in health care facilities, which can lead to **health care–associated infections (HAIs)**.

In addition, most of the people needing care in a health care facility are there because they are not in good overall health. Therefore, their potential to get a communicable disease is increased (Box 12-1). The chance of a patient or resident getting an infection while in a health care facility is so great that there is even a name for it: **nosocomial infections**. According to statistics from the Centers for Disease Control and Prevention (CDC), approximately 2 million people get HAIs each year!

Health care–associated infections (HAIs) infections that patients or residents get while receiving treatment in a hospital or other health care facility or that health care workers get while performing their duties within a health care setting

Nosocomial infections infections that patients or residents get while receiving treatment in a hospital or other health care facility; a type of HAI

Box 12-1 Risk Factors That Increase a Person’s Risk for Infection

- **Very young or very old age.** People who are very young or much older are more likely to get an infection. The young have not had time to develop an effective defense mechanism for fighting infections, and older adults lose their defenses as they age, especially if they also have other chronic health conditions.
- **Poor general health.** A person who is sick or debilitated (“worn down”) is more at risk for infection because the body’s defenses are already weakened by illness. Therefore, the person is not able to fight off the pathogen as easily. In addition, certain medical treatments, such as chemotherapy and radiation therapy, can negatively affect the functioning of the body’s immune system and put a person more at risk for infection.
- **Stress and fatigue.** Lack of rest and emotional stress can affect the body’s ability to defend itself from pathogens.
- **Indwelling medical devices.** Medical devices, such as catheters, feeding tubes, and intravenous (IV) lines, increase a person’s risk of infection by making it easier for pathogens to enter the body.

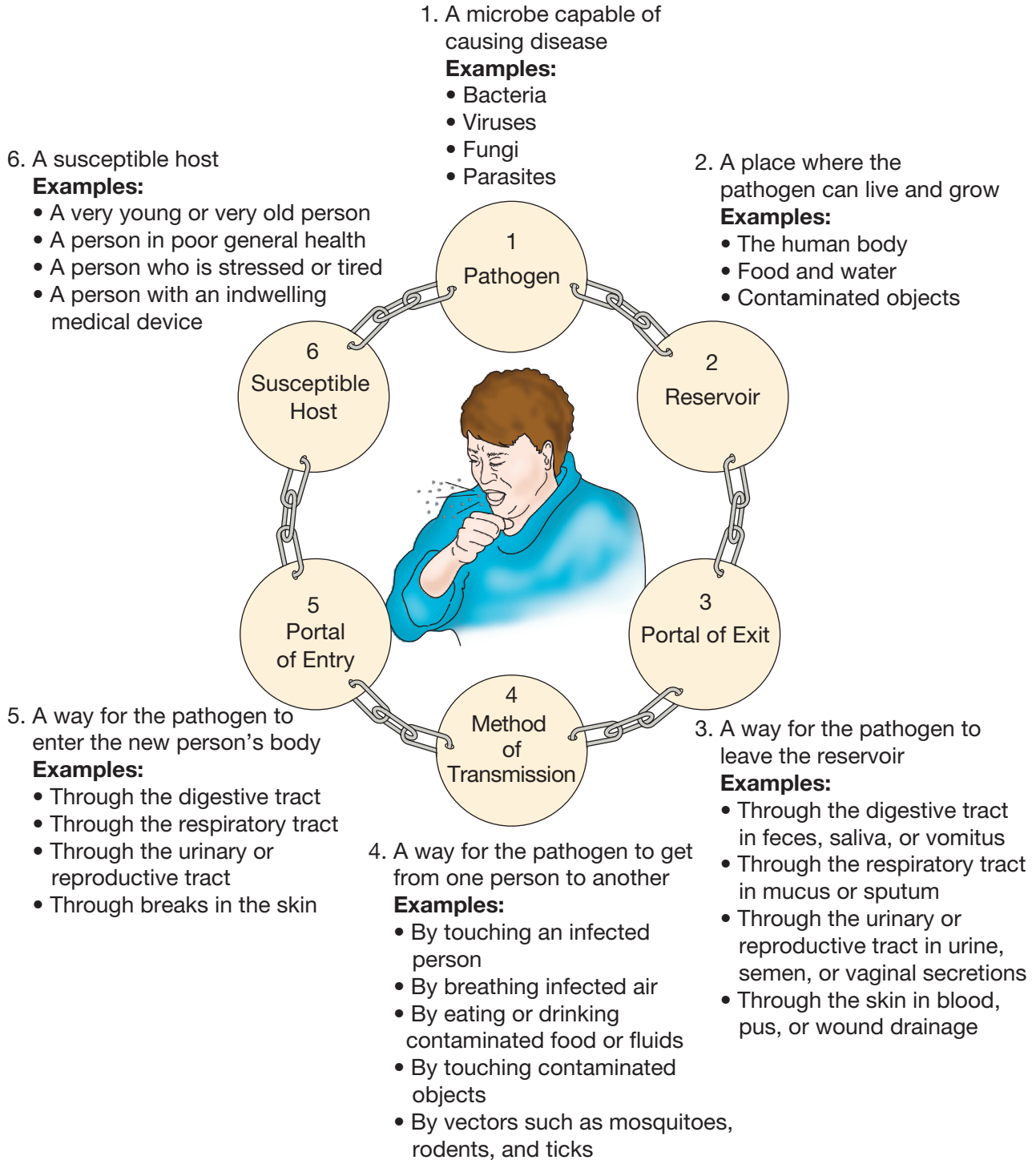
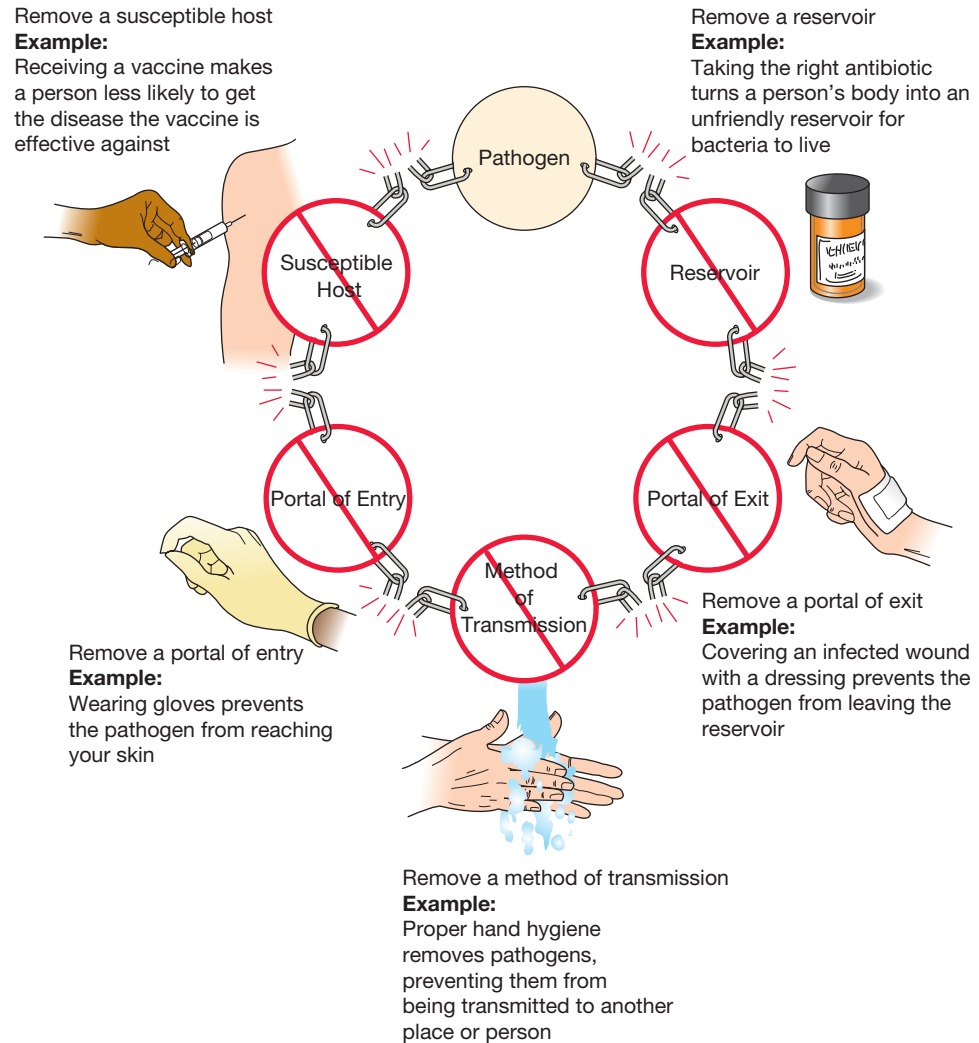


FIGURE 12-2

The chain of infection. For a person to get an infection, all six links in the chain must be present.

**FIGURE 12-3**

The chain of infection can be broken by removing just one of the six elements that must be present for infection to occur.

Putting it all together!

- The chain of infection describes the elements that must be present for an infection to occur. The six elements of the chain of infection are pathogen, reservoir, portal of exit, method of transmission, portal of entry, and susceptible host.
- Breaking just one link in the chain of infection stops the spread of infection from one person to another.
- Communicable diseases can spread easily through a health care facility. Many of the people you will care for will have risk factors for infection.

Ways Infections Are Transmitted

What will you learn?

When you are finished with this section, you will be able to:

1. Describe the airborne route of transmission and list illnesses that are transmitted in this way.
2. Describe the contact route of transmission and list illnesses that are transmitted in this way.
3. Describe the oral–fecal route of transmission and list illnesses that are transmitted in this way.
4. Describe the bloodborne route of transmission and list illnesses that are transmitted in this way.
5. Identify body fluids that are most likely to contain bloodborne pathogens.
6. List three diseases caused by bloodborne pathogens that pose a risk to health care workers.
7. Define the words **airborne pathogens**, **oral–fecal route**, **bloodborne pathogen**, and **body fluids**.

Airborne Transmission

Some infections can be spread through the air. When the person coughs or sneezes, **airborne pathogens** leave the body through particles of saliva or sputum. As these particles spray through the air, some may dry out and remain in the air for a long time. The dried-out droplets containing pathogens are in the air we breathe and on the surfaces we touch. Infection spreads when a person breathes the air containing the pathogens. Infections that are transmitted in this way include tuberculosis (TB) (Box 12-2), measles, SARS, smallpox, and chickenpox.

Airborne pathogens pathogens that can be transmitted through the air

Box 12-2 Tuberculosis

Tuberculosis (TB) is an airborne infection that usually involves the lungs, but may also involve the kidneys or bones. The infection is spread when the person coughs, sneezes, speaks, or sings. People who have close, frequent contact with a person who has TB are most likely to get the disease. A person infected with TB may have the disease for years before they show any symptoms. TB is usually diagnosed following a routine skin test (used to screen for the disease) or chest x-ray. Treatment is complicated and involves taking many different drugs for a long period of time. If not treated, TB can be fatal.



(TimoninalShutterstock.com)

Other airborne pathogens are transmitted in a similar fashion, called *droplets*. These microbes are suspended in larger droplets of saliva or sputum, but the pathogen usually does not remain alive or active after drying out. Like other airborne pathogens, they are released from the infected person during coughing, sneezing, or talking, but because they are heavier particles, most only remain suspended in the air for about 3 to 6 feet from the person. Infections that are transmitted in this way include mumps, influenza, whooping cough, strep throat, some types of pneumonia, and COVID-19. However, the virus that causes COVID-19 is found in very fine droplets that an infected person exhales. It can remain suspended in the air longer than other types of microbes.

Close and/or extended contact with a person who has an airborne infection increases your chances of catching that infection from them. Crowded conditions, such as those on public transportation or in elevators or busy indoor spaces, increase exposure to airborne infections.

It is important to understand that although these infections are primarily transmitted from one person to another through the air, they can also be transmitted through contact. When an infected person sneezes or coughs into their hands and then touches another person's hand or surface that is then soon touched by another person, that person can transmit the microorganism to themselves by then touching their face.

Contact Transmission

Bacteria are the cause of most common diseases spread by contact in the health care setting. Many infections are spread directly from one person to another when an uninfected person touches an infected person. Infection can also spread indirectly when an uninfected person touches objects that the infected person has touched, such as drinking glasses, door handles, side rails, light switches, bedpans, or bed linens. Interestingly, the most common direct contact transmission occurs from the hands of the health care workers themselves! Infections that are transmitted in this way include wound infections and MRSA.

Other communicable diseases, such as VRE and *C. diff*, are easily spread through contact transmission in a health care setting from contact with contaminated feces. Most people suffering from these infections will have diarrhea and may soil their clothing, bedding, chairs, and other surfaces. Hands that come in contact with these items or the diarrhea can then spread the organisms easily to other people. Other types of intestinal viruses can be spread in this manner also.

Oral–Fecal Transmission

Some pathogens are transmitted through the **oral–fecal route**. The pathogen lives in an infected person's digestive tract and leaves the body in the feces. The feces can contaminate food or water. Then, when another person eats or drinks the contaminated food or water, they become infected. Infections that are transmitted in this way include hepatitis A, hepatitis E, VRE, and some types of parasitic infections.

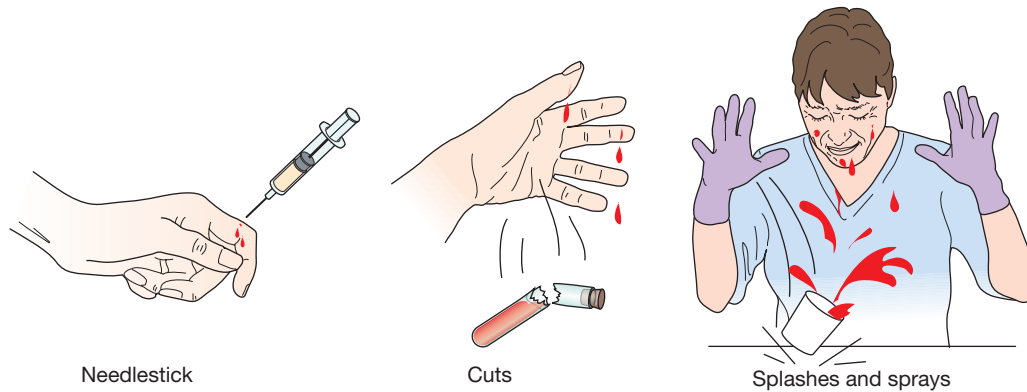
Bloodborne Transmission

For a **bloodborne pathogen** to be transmitted from one person to another, blood or **body fluids** from an infected person must enter the bloodstream of a person who is not infected. There are several ways this could occur in the workplace:

Oral–fecal route a method of transmitting an infection; occurs when feces containing a pathogen contaminate food or water, which is then consumed by another person

Bloodborne pathogens pathogens that can be transmitted to another person through blood or other body fluids

Body fluids liquid or semiliquid substances produced by the body, such as blood, urine, feces, vomitus, saliva, drainage from wounds, sweat, semen, vaginal secretions, tears, cerebrospinal fluid, amniotic fluid, and breast milk; also referred to as *other potentially infected materials (OPIM)*

**FIGURE 12-4**

Transmission of bloodborne pathogens in the workplace.

- Needlesticks (puncture wounds caused by used needles)
- Cuts from contaminated, broken glass (such as that from a broken blood tube)
- Direct contact between infected blood and broken skin, mucous membranes, or the eyes (Fig. 12-4)

Body fluids that are most likely to contain bloodborne pathogens include:

- Blood
- Semen
- Vaginal secretions
- Wound drainage
- Cerebrospinal fluid (CSF)
- Amniotic fluid
- Breast milk

Infections that are transmitted this way include hepatitis B, hepatitis C, malaria, syphilis, Ebola, and HIV/AIDS.

Because of the type of work you do, you will come in contact with body fluids that carry bloodborne pathogens. Bloodborne pathogens that pose the greatest risk to health care workers in the workplace are hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). The diseases caused by these pathogens are potentially life threatening (Box 12-3). In many cases, you will not be able to easily identify patients or residents who are infected with bloodborne pathogens. This is why you must treat each patient or resident you have contact with as if they *may be* infected with a bloodborne pathogen. To protect yourself from exposure to bloodborne pathogens, you will take *standard precautions*, discussed in Chapter 13, with every patient or resident.

Box 12-3 Hepatitis B, C, and D and HIV/AIDS

METHODS OF TRANSMISSION

Bloodborne diseases that pose the most risk to health care workers include hepatitis B, hepatitis C, and HIV/AIDS. The viruses that cause these diseases are found in blood, as well as in other body fluids, such as semen and vaginal secretions. This means that these viruses can be transmitted through transfusion of infected blood or blood products, across the placenta from birthing parent to infant, through unprotected sexual intercourse, and by sharing needles used to inject drugs. These viruses can also be transmitted to health care workers through needlestick injuries, cuts with contaminated glass, or direct contact with blood.

CONSEQUENCES OF INFECTION

HEPATITIS B

Infection with hepatitis B virus (HBV) causes inflammation of the liver, the organ that removes toxic substances from the blood. Infection with HBV causes an acute illness in most people, but between 5% and 10% of HBV infections become chronic. People with chronic infections may never have symptoms, but they can still pass the virus on to others. Or, they may have flare-ups of symptoms every so often, resulting in months of disability. Some people who are infected with HBV may eventually develop liver failure or liver cancer as a result of the infection. These conditions are potentially fatal.

A vaccine against HBV is available and is recommended for all health care workers.

HEPATITIS C

Infection with hepatitis C virus (HCV) also causes inflammation of the liver. The illness that results from infection with HCV tends to be more chronic and serious than that resulting from infection with HBV. As many as 85% of people with hepatitis C develop chronic disease, and of these, 20% go on to develop liver failure or liver

cancer. Many people with hepatitis C will eventually require a liver transplant to save their lives. Currently, no vaccine against HCV is available.

HEPATITIS D

Hepatitis D virus (HDV), also known as “delta hepatitis,” is found only in people who are already infected with HBV. Hepatitis D is uncommon in the United States. There is no vaccine for HDV, but it can be prevented by vaccination against HBV.

HIV/AIDS

Acquired immunodeficiency syndrome (AIDS) is caused by infection with human immunodeficiency virus (HIV). HIV invades the body’s T cells, which are special white blood cells that help protect the body from infection. Instead of killing the T cell immediately, HIV uses the T cell to make copies of itself and increase its numbers. Eventually, the virus kills the T cell, and then, the virus and all of its copies move on to repeat the process in other T cells. Over time, the number of T cells in the body decreases. The body becomes unable to fight off infections and the person dies. To date, there is no cure for AIDS and no vaccine against HIV.

RISK TO THE HEALTH CARE WORKER

Of the bloodborne pathogens that you may be exposed to, HIV is the least likely one that you will catch. Your chances of becoming infected with HBV or HCV on the job are much higher (approximately 30%) than your chances of becoming infected with HIV (less than 0.1%). However, it is important for you to know that although your work as a nursing assistant does put you at risk for being exposed to bloodborne pathogens, your behavior outside of work could put you at much higher risk for getting a bloodborne disease. Having unprotected sexual intercourse is the most common way of getting hepatitis B and HIV.

 **Putting it all together!**

- Infections can spread easily through a health care facility. Many of the people you will care for will have risk factors for infection.
 - Some infections are transmitted through the air. The person becomes infected when they breathe contaminated air.
 - Some infections are transmitted through contact with an infected person or objects that the infected person has touched.
 - Some infections are transmitted when feces containing a pathogen contaminate food or water that is then consumed by another person.
 - Some infections are transmitted when blood or body fluids from an infected person enter the bloodstream of a noninfected person.
 - Needlesticks, cuts from contaminated glass, and splashes and sprays of contaminated body fluids can put a health care worker at risk for a bloodborne disease.
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WHAT DID YOU LEARN?

MULTIPLE CHOICE

Select the single best answer for each of the following questions.

1. Bacteria may enter the body through:
 - a. The mouth
 - b. The nose
 - c. Cuts in the skin
 - d. All of the above
2. Microbes can be spread by:
 - a. Looking at a person with a communicable disease
 - b. Coughing or sneezing
 - c. Touching a person with a communicable disease
 - d. Both “b” and “c”
3. Which one of the following must be present in order for infection to spread?
 - a. A nursing assistant
 - b. An indwelling medical device
 - c. A susceptible host
 - d. A patient or resident who looks ill
4. Hepatitis B virus (HBV), a bloodborne pathogen, can be found in all of the following body fluids except:
 - a. Blood
 - b. Semen
 - c. Wound drainage
 - d. Sweat
5. Human immunodeficiency virus (HIV) can be transmitted through all of the following means except:
 - a. Blood splash to mucous membrane
 - b. Sexual intercourse
 - c. Sharing needles
 - d. A mosquito bite
6. A vaccination against which one of the following bloodborne diseases is available?
 - a. Lyme disease
 - b. AIDS
 - c. Hepatitis C
 - d. Hepatitis B
7. Hepatitis B is a viral disease of the:
 - a. Spleen
 - b. Liver
 - c. Blood
 - d. Heart
8. Infections such as the common cold and the flu are usually caused by:
 - a. Bacteria
 - b. Viruses
 - c. Fungi
 - d. Parasites
9. TB, influenza, and COVID-19 are infections that are primarily transmitted through:
 - a. Blood
 - b. Skin-to-skin contact
 - c. Airborne droplets
 - d. Needlestick injuries

MATCHING

Match each word with its definition.

- | | |
|---|--|
| _____ 1. Communicable disease | a. Special proteins that help fight specific pathogens |
| _____ 2. Pathogen | b. Can be transferred from one person to another |
| _____ 3. Leukocyte | c. Microbe that can cause illness |
| _____ 4. Health care–associated infection (HAI) | d. White blood cell that helps to fight pathogens |
| _____ 5. Antibodies | e. Infection acquired in the health care setting |



You and another nursing assistant are caring for a resident with *C. diff* when you are both needed urgently in another resident's room. Acting in haste, the other nursing assistant neglects to wash their hands. Why is this a concern? What should you do to protect the residents and other health care providers working at this facility?