INTRODUCTION TO
QUALITY AND SAFETY EDUCATION FOR NURSES
Core Competencies for Nursing Leadership and Management, SECOND EDITION

EDITORS
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The second edition of Introduction to Quality and Safety Education for Nurses has been thoroughly updated with an emphasis on leadership and management. The content continues to focus on knowledge and skills required of entry-level nurses in the six Quality and Safety Education for Nurses (QSEN) domains. After heart disease and cancer, patient safety errors rank as the third-leading cause of death in the United States. As patients' needs have increased in complexity and inter-professional teamwork and collaboration have become essential, only strong leadership skills can ensure high-quality and safe care. Nurses, the largest group of healthcare professionals that spend the most time with patients, are uniquely suited to lead through effective management and communication in this dynamic environment.

With contributions from nurses, physicians, pharmacists, librarians, attorneys, and other healthcare professionals throughout the United States and beyond, Introduction to Quality and Safety Education for Nurses, Second Edition underscores the inter-professional focus grounding healthcare practice today. The updated edition includes four new chapters on implementing quality and safety initiatives from a leadership and management perspective, and state-of-the-art information on quality improvement. Each chapter contains learning objectives, opening scenarios, case studies, interviews, critical thinking exercises, key concepts, clinical discussion points, review activities, NCLEX-style questions, and web resources.

New to the Second Edition:
• Increased focus on leadership and management aspects of quality and safety
• Updated information from national and state healthcare and nursing organizations
• An evolving clinical case study for application of concepts throughout the text
• Additional patient care cases and real-life examples
• Interviews with a myriad of healthcare professionals such as educators, library scientists, lawyers, psychologists, risk managers, and many others
• Four new chapters addressing nurse leadership and management of high-quality care, legal and ethical aspects of quality and safety, delegating patient care and setting priorities, and quality improvement project management

Key Features:
• Helps nursing schools to fulfill accreditation standards for quality and safety curricula
• Maps the QSEN competencies for knowledge, skills, and attitudes (KSAs) for each chapter
• Includes objectives, critical thinking exercises, case studies, interviews, NCLEX-style questions, photos, tables, suggested readings, and more in each chapter
• Provides instructor package with PowerPoint slides, Q&A, answers for case study and critical thinking exercises, and more
• Provides knowledge for nursing education QSEN-specific courses
• KSAs throughout chapters
INTRODUCTION TO
QUALITY AND SAFETY
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Patricia Kelly, MSN, RN, earned her diploma in nursing from St. Margaret Hospital School of Nursing, Hammond, Indiana; baccalaureate in nursing from DePaul University in Chicago, Illinois; and master’s degree in nursing from Loyola University in Chicago, Illinois. She is Professor Emeritus, Purdue University Northwest, Hammond, Indiana. She has worked as a staff nurse, travel nurse, school nurse, and nurse educator. Patricia has traveled extensively in the United States, Canada, and Puerto Rico, teaching at conferences for the Joint Commission, Resource Applications, Pediatric Concepts, and Kaplan, Inc. She currently teaches nationwide National Council Licensure Examination for Registered Nurses® (NCLEX-RN®) review courses for Evolve Testing & Remediation/Health Education Systems, Inc. (HESI), Houston, Texas. She also currently volunteers in a level one trauma center, emergency room, Advocate Christ Medical Center, Oak Lawn, Illinois and has been a nursing volunteer at the Old Irving Park Community Clinic in Chicago, a free clinic for patients without healthcare insurance.

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Patricia has served on the board of directors of Tri-City Mental Health Center, St. Anthony’s Home, and the Mosby Quality Connection. She is a coeditor/author of *Introduction to Quality and Safety Education for Nurses, Core Competencies*, first edition, with coeditors/authors Beth A. Vottero and Carolyn Christie-McAuliffe. Patricia is also an editor/author of *Nursing Leadership and Management*, now in its third edition in the United States and Canada; *Essentials of Nursing Leadership and Management* (with Janice Tazbir, coeditor/author), now in its third edition; and *Nursing Delegation, Setting Priorities, and Making Patient Care Assignments* (with Maureen Marthaler, coeditor/author), second edition. She contributed a chapter, “Preparing the Undergraduate Student and Faculty to Use Quality Improvement in Practice,” in *Improving Quality*, second edition, by Claire Gavin Meisenheimer. Patricia also contributed a chapter on Obstructive Lung Disease: Nursing Management in *Contemporary Medical-Surgical Nursing* by Rick Daniels. She has served as a national disaster volunteer for the American Red Cross and has also been a team member on healthcare relief trips to Nicaragua. Patricia has been a nurse for 50 years and currently lives in Chicago, Illinois, and in Fort Myers, Florida. She can be reached at patkelly777@aol.com.

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Beth’s background includes over 18 years as a staff and charge nurse. After completing her doctorate, Beth coordinated and led a successful Magnet redesignation for Indiana University Health La Porte Hospital in La Porte, Indiana. She brought a desire to instill quality concepts to academia where she created an undergraduate quality course at Purdue Northwest focused on quality and safety in healthcare. Beth is a research associate with the Indiana Center for Evidence-Based Practice in Hammond, Indiana, a Joanna Briggs Institute (JBI) Collaborating Center. Through this association, she has completed systematic reviews on various topics. In collaboration with Dr. Lisa Hopp, she assisted in developing an Evidence Implementation Workshop to train nurses in translation science using an evidence-based quality improvement focus. Beth is a certified Comprehensive Systematic Review Program Trainer with JBI and conducts weeklong training for healthcare providers nationally.

Beth has published chapters in Hopp and Rittenmeyer’s *Introduction to Evidence-Based Practice: A Practical Guide for Nurses*; Bristol and Zerwekh’s *Essentials of E-Learning for Nurse Educators*; and has developed case studies for Zerwekh and Zerwekh’s *Nursing Today: Transitions and Trends*. She has published several articles on “Teaching Informatics” (Nurse Educator QSEN Supplement), “Conducting a Root Cause Analysis” (Nursing Education Perspectives), and “3D Simulation of Complex Health Care Environments” (Clinical Simulation in Nursing). Beth is an active member of the QSEN Academic Task Force with multisite studies on quality and safety education for nurses (QSEN) teaching strategies. As a funded researcher through Purdue University, Beth has studied factors affecting medication errors in the clinical setting. Beth can be reached at bstarnes@pnw.edu.

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This book is dedicated by Patricia Kelly to her loving Dad and Mom, Ed and Jean Kelly (Dad was a Safety Engineer at Inland Steel Company); to her charming, wonderful fiancé, Ron Vana; to her super sisters, Tessie Kelly Dybel and Kathy Kelly Milch; to her dear aunts and uncles, Aunt Pat and Uncle Bill Kelly and Aunt Verna and Uncle Archie Payne; her nephew, John Milch; her nieces, Natalie Dybel Bevil, Melissa Milch Arredondo, and Stacey Milch Monks; her nephews-in-law, Tracy Bevil, Peter Arredondo, and Derek Monks; her grandnephew, Brock Bevil, and her grandniece, Reese Bevil. I love you all!

Beth Vottero would like to thank her support, her rock, and her hero . . . her ever-patient husband Dino. Thanks also go to her children Tom (Army Strong), Mitchell (ump extraordinaire), Micah (King of Games), Michelle (ever-patient educator), and Trisha (the beautiful mother); to her amazing parents Tom and Judy, Ray and Dolly; and to her dog Ben, who sat on a chair and stared at her for hours while she worked. To her super-human coworkers—you know who you are and how much you motivate me.

Carolyn A. Christie-McAuliffe would like to acknowledge all the patients she has been graced to know and work with. Her efforts on this book are dedicated to them: for the trust and honor they place in her; for the honesty and courage they exhibit; but most of all, for the privilege to hear, and see, and witness healing of mind, body, and spirit. For that privilege, she will always feel a sense of responsibility to do what she can to facilitate higher levels of safety and quality in healthcare.
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Nurses are at the core of healthcare delivery and their role requires both competence and leadership to ensure that high quality and safe care is provided. It is exciting to see the publication of the second edition of Quality and Safety Education for Nurses: Core Competencies for Nursing Leadership and Management. Based on the Quality and Safety Education for Nurses (QSEN) competencies (Cronenwett et al., 2007) and emphasizing leadership and management principles, this book is a valuable educational resource that facilitates teaching contemporary nursing practice. Nursing students and faculty across the nation will benefit from the content of the book. It includes personal interviews, essential content, and study questions that promote reflection and critical thinking. The book is an essential resource to learning and applying the QSEN competencies.

Now is the time for nurses to have the knowledge, skills, attitudes, and leadership to provide consistent high quality and safe care. Although there is evidence that we have made some progress in the delivery of care (National Patient Safety Foundation, 2015) since the Institute of Medicine (IOM) report over 17 years ago (IOM, 2000, 2003), medical error remains the third leading cause of death (Makary & Daniels, 2016). This is due in part to the increasing complexity and dynamic nature of healthcare, the delivery of care by interprofessional teams that demands new types of communication strategies, and the challenge of integrating informatics and the electronic health record. The delivery of healthcare is not what it used to be and new educational strategies are needed to address these changes.

The QSEN competencies were developed over 12 years ago and schools of nursing continue to report that the QSEN competencies are not integrated into their curriculum (Altmiller & Armstrong, 2017). This is concerning as 24% of NCLEX® questions are directly related to quality and safety content. Since 2012, the QSEN Institute at the Case Western Reserve University Frances Payne Bolton School of Nursing has continued the QSEN movement by continuing to provide resources to integrate the QSEN competencies into the curriculum in the classroom, simulation lab, and clinical experiences. The qsen.org website provides ready-to-use teaching strategies, resources, and connections to QSEN experts. A monthly newsletter and annual conference connect nurse educators and nurse practice leaders to ensure that nursing students are quality and safety practice ready and that nurse preceptors and practicing nurses are ready to role-model quality and safety standards.
The QSEN movement includes a fundamental paradigm shift: a shift from nurses not just doing their work but improving their work. This requires nurses and other healthcare professionals to “systems think” and garner the power to change the systems in which they work (Dolansky & Moore, 2013). Systems thinking moves nurses to not just have the knowledge and skill to deliver care to their patients (e.g., use the five steps to safe medication administration) but to understand and value the connections of their actions to the systems of care around them (e.g., ask how many medication errors are occurring on my unit and what actions are being taken to reduce these errors). This paradigm shift to systems thinking requires nurses to embrace a philosophy of continuous improvement that facilitates learning from errors and designing new ways of providing care that ensure high quality and safe care.

Professor Emerita Patricia Kelly, Dr. Beth Vottero, and Dr. Carolyn Christie-McAuliffe bring the QSEN core competencies alive in this introductory book to improve student preparation. The addition of leadership and management to this second edition of the book is important as they are important at both the front line and the management level of patient care. Leadership and management are essential to move from traditional nursing care to nursing care that includes systems change to improve patient care. Leadership is the necessary ingredient to empower nurses to stand-up and speak out and say, “I am not going to do this workaround any longer as it violates my core value of delivering high quality and safe care.” As Eleanor Roosevelt said, “With the new day comes new strength and new thoughts.” Let us embrace these words and move quality and safety to new heights.

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Healthcare providers and consumers of care demand excellence. When that is not achieved, and less than optimal outcomes are realized, the competence of individual providers pushes to the forefront of discussions, complaints, and root cause investigations. Assuming or judging individual competence is complicated, particularly when other causes, such as organizational factors, are disregarded or not appreciated. In too many instances, particularly when care does not meet our expectations or an adverse event occurs, the key factors indicate troubles with the competency of not just one but many.

With the increasing complexity of healthcare and patient needs, there is a demand for qualified and competent healthcare providers for high-quality, safe patient care. The attainment of nursing quality and safety competencies begins during coursework and clinical preparation, is developed in practice, and is refined with experience. While we may agree that all healthcare providers need to demonstrate specific competencies in practice, we struggle with the definition, context, attainment, importance, and demonstration of competencies within various healthcare environments. A common understanding of the definitions, standards, and domains of competencies is essential and antecedent to potential associations with understanding and improving organizational, professional, and patient outcomes.

Each day, nurses fulfill many different expectations in different contexts with changing demands and multiple challenges. To do so, nurses apply and adapt their competencies as part of their professional practice performance. The application and adaptation of one’s competencies are influenced by many factors, including attitudes, motives, and perceptions. Notwithstanding, perceptions of functioning competencies or levels of competencies may be intertwined with the performance of other nurses and healthcare providers. As such, there are challenges in measuring competencies and understanding the confluence of competencies across healthcare teams. It may be that differences in scope of practice among the professions do not necessarily indicate discipline-specific competencies. Instead, competencies are interdependent and practice specific.

Core competencies for quality and patient safety have been defined by the Quality and Safety Education for Nurses (QSEN) initiative, funded by the Robert Wood Johnson Foundation, to prepare the future nursing workforce with necessary knowledge, skills, and attitudes to be actively engaged in improving the quality and safety of healthcare. The approach in this book is based on QSEN and is structured to ensure that
students will obtain the recommended competencies and knowledge necessary to provide care that is both high quality and safe in practice. Patricia Kelly, Beth A. Vottero, and Carolyn A. Christie-McAuliffe bring the QSEN core competencies together with leadership and management in an introductory book to improve student preparation. It is a book that will be an essential tool on our journey to realize the quality and safety of care we all demand.

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The 1994 Institute of Medicine (IOM) report, *America’s Health in Transition: Protecting and Improving Quality*, highlighted the seriousness and pervasiveness of healthcare error rates and their effect on patient outcomes and morbidity and mortality rates. Then, in 2000, the IOM released the report, *To Err Is Human: Building a Safer Health System*. This IOM report instantly received national attention from policymakers, healthcare providers, and consumers. The IOM report stated, “At least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented.” This IOM report caused major ripples throughout the healthcare system and highlighted the need to change how healthcare is delivered. Shockingly, recent research by Makary and Daniel (2016) has found that more than 250,000 deaths each year are the result of errors within healthcare. That means that after heart disease and cancer, patient safety errors are the third leading cause of death in the United States (Makary & Daniel, 2016).

America has some of the best hospitals in the world but it is also the only large, rich country without Universal Healthcare coverage. About half of Americans have their health insurance provided by their employers. Healthcare costs can be financially ruinous for others. In 2016, America spent $10,348 per person on healthcare, roughly twice as much as the average for comparably rich countries. On average, both hospital cost and drug prices can be 60% higher than in Europe. The American Affordable Care Act expanded the health insurance system and cut the number of uninsured people from 44 million to 28 million but still left a gap among people not poor enough to qualify for Medicaid, but not rich enough to buy private insurance.

In the U.S., prices for the same service can vary enormously. Having your appendix removed, for example, can cost anywhere from $1,500 to $183,000 depending on the insurer. Add to this the fact that 9 of the 10 best-paid occupations in the U.S. involve medicine, and we see that doctors and other healthcare providers have little incentive to change the system.

The 2001 release of the IOM report, *Crossing the Quality Chasm: A New Health System* for the 21st century, spotlighted general problems in healthcare in an attempt to close the gap between what is known to provide quality healthcare and what is actually occurring in practice. This IOM report defined six principles for healthcare: Healthcare should be Safe, Timely, Effective, Efficient, Equitable, and Patient-Centered (STEEP Principles). This IOM report also identified 10 rules for care delivery redesign (available at www.nap.edu/catalog/10027/crossing-the-quality-chasm-a-new-health-system-for-the). This IOM report spawned a series of other IOM reports on priority healthcare areas, for example,
public health; biomedical and health research; diseases; quality and patient safety; health services, coverage, and access; select populations and health disparities; food and nutrition; veterans’ health; healthcare workforce; environmental health; global health; substance abuse and mental health; women’s health; aging; and education.

The IOM report, *The Future of Nursing: Leading Change, Advancing Health* (2011), recommended that nurses practice to the full extent of their education, improve nursing education, provide nursing leadership positions in healthcare redesign, and improve data collection for workplace planning and policy making. This IOM report further states that strong leadership is critical if the vision of a transformed healthcare system is to be realized. The nursing profession must produce leaders throughout the healthcare system. Everyone from the bedside to the boardroom must engage colleagues, subordinates, and executives so that together they can identify and achieve common goals (Bradford & Cohen, 1998). Nurses must understand that their leadership is as important to providing quality care as is their technical ability to deliver care at the bedside in a safe and effective manner.

Care has been provided to patients from early history, often by religious orders. More recently, Florence Nightingale led 38 women into Scutari Barrack Hospital in Turkey in 1854 to manage care for British casualties of the Crimean War. She went on to establish Saint Thomas Hospital and the Nightingale Training School for Nurses in 1860. Many other nurses have also led and managed patient care; some of them honored in the American Nurses Association Hall of Fame (see www.nursingworld.org/Hall-of-Fame for a listing of ANA Hall of Fame inductees).

Every nurse is a nursing leader and manager, from the beginning frontline nurse who works directly with patients and takes action to ensure their safety and care quality to the advanced practice nurse clinician to the top federal nurse administrator in health services, scientific and academic organizations, and public health and community-based organizations. All of these nurses continuously demonstrate leadership and management and work with the interprofessional team to ensure patient-centered, high quality, safe, evidence-based care, utilizing informatics as appropriate.

The IOM reports also called for changes in how healthcare organizations provide safe, high-quality patient care services. Currently, the IOM and many others, including clinicians, healthcare organizations, employers, consumers, foundations, research agencies, government agencies, and quality organizations are working to create a more patient-centered, 21st-century healthcare system.

A primary movement for change in nursing academia toward the inclusion of more educational information on STEEEP Principles has been the Quality and Safety Education for Nurses (QSEN) initiative. QSEN followed the IOM lead and stated that changes in healthcare needed to focus on the development of nursing competencies in patient-centered care, teamwork and collaboration, quality improvement, evidence-based practice, and informatics. Because of nurses’ unique position at the sharp end, front line of care in direct contact with patients, safety was added as a sixth QSEN competency. The QSEN initiative convened a national panel of experts to identify the core knowledge, skills, and attitudes (KSAs) required for each of the six competencies. Information about the KSAs is available at qsen.org. QSEN also sponsors nursing conferences including:

- An annual QSEN Forum to attract nursing leaders in academia and practice to share innovations and research in patient quality and safety.
- An annual Summit on Leadership and Quality Improvement to explore interprofessional and frontline leadership strategies that will help to accelerate organizational and systems cost, safety, and quality improvement performance in organizations (qsen.org/conferences/1st-annual-summit-on-leadership-and-quality-improvement-accelerating-change-through-positive-forms-of-leadership/).
Another significant movement for healthcare change comes from the Agency for Healthcare Research and Quality (AHRQ). This agency, with funding from the Robert Wood Johnson Foundation, published Patient Safety and Quality: An Evidence-Based Handbook for Nurses (2008), edited by Ronda G. Hughes, to provide all nurses with evidence-based techniques and interventions to improve patient outcomes. AHRQ also provides many other resources for Quality and Patient Safety at their website.

WHY THIS BOOK, QUALITY AND SAFETY EDUCATION FOR NURSES: CORE COMPETENCIES FOR NURSING LEADERSHIP AND MANAGEMENT, SECOND EDITION?

The idea for this book was born when two of the editors, Patricia Kelly and Dr. Beth A. Vottero attended the 2011 QSEN conference in Milwaukee, Wisconsin. Patricia and Beth, both from the Chicago area, invited Dr. Carolyn A. Christie-McAuliffe, from New York, to join them as the third editor to facilitate the development of a broad look at quality and safety. The three coeditors experienced the rapid evolution of quality and safety information in their clinical and academic practices and they identified the need for nursing students to receive an understanding of quality and safety in their basic nursing preparation. The three editors believed in the need to organize existing information about quality and safety into one basic, easily understood textbook. This need was recently emphasized with the publication of the Makary and Daniel report (2016), mentioned earlier. This report is shocking to us as nurses who have been delivering what we believe is safe high-quality nursing care for a combined total from the three editors of approximately 112 years! The purpose of this book is to provide a comprehensive overview of the essential QSEN KSAs about the six quality and safety competencies in nursing practice to beginning frontline leaders and managers of interprofessional patient care. These frontline nursing leaders and managers use informatics and work with interprofessional teams to deliver patient-centered, evidence-based, safe, high-quality patient care.

Many practical examples from real-life experiences are discussed in this text for students. The contributors to this text include nurse educators, nurse faculty, nurse researchers, library scientists, nurse administrators, nurse case managers, physicians, lawyers, nurse quality improvement practitioners, nurse practitioners, nurse entrepreneurs, psychologists, and others. The contributors are from all over the United States, emphasizing a broad view of quality and safety. There are U.S. contributors from Colorado, Florida, Illinois, Indiana, New Hampshire, New Jersey, Massachusetts, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, and Washington, DC, as well as an international contributor.

Each chapter includes interviews with experts in their respective healthcare field to provide an interprofessional team perspective. Interviewees include pharmacists, nurses, lawyers, physicians, library scientists, quality improvement nurses, radiology technologists, nurse practitioners, hospital board members, members from the Committee of Directors for Joanna Briggs Institute, patients, and others.

An important feature of this book is the listing of QSEN competencies and the associated KSAs found in Appendix B. Appendix B also identifies the chapter in which the QSEN competency’s KSA information can be found in the text. This will help both students and faculty plan for the development of KSA competency in students.

ORGANIZATION

Quality and Safety Education for Nurses: Core Competencies for Nursing Leadership and Management, Second Edition, consists of 17 chapters. Each chapter provides nursing students and
beginning nurses with a background and foundational knowledge of quality and safety to assist them in their role as sharp end, frontline leaders in today’s healthcare environment.

- Unit I, “Introduction to Quality and Safety Education for Nurses: Core Competencies for Nursing Leadership and Management,” includes eight chapters. They are “Overview of Patient Safety and Quality of Care,” “Quality and Safety Education for Nurses,” “Nurses as Leaders and Managers for Safe, High-Quality Patient Care,” “Quality and Safety in High-Reliability Organizations,” “Legal and Ethical Aspects of Quality and Safety,” “Delegation and Setting Priorities for Safe, High-Quality Nursing Care,” “Patient-Centered Care,” and “Interprofessional Teamwork and Collaboration.”
- Unit II, “The Use of Quality and Safety Education Concepts by Nursing Leaders and Managers” includes four chapters. They are “Informatics,” “Basic Literature Search Strategies,” “Evidence-Based Nursing Practice,” and “Patient Safety.”
- Unit III, “Nurse Leadership and Management for Quality Improvement,” includes five chapters. They are “Essentials of Quality Improvement,” “Tools of Quality Improvement,” “Quality Improvement and Project Management,” “The Future Role of the Registered Nurse in Patient Safety and Quality,” and “Transition from Student Nurse to Leadership and Management of Your Future as a Registered Nurse.”

**CHAPTER FEATURES**

Several chapter features are used throughout the text to provide the reader with a consistent format for learning. Chapter features include the following:

- Photos, tables, and figures to enhance student understanding
- Healthcare or nursing quotes and interviews to illustrate the chapter content
- Objectives that state the chapter’s learning goals
- Opening Scenario, a mini entry-level clinical situation that relates to the chapter, with two or three critical thinking questions
- Key Concepts, a listing of the primary understandings the reader is to take from the chapter
- Key Terms, a listing of important new terms defined in the chapter and identified within the chapter by bold type
- Clinical Discussion Points for nurses, several questions to engage students in dialogue (guidelines for discussion are available online)
- Review Questions, several multiple-choice and alternate-style National Council Licensure Examination for Registered Nurses (NCLEX-RN) questions (answers to Review Questions available online)
- Review Activities, to help students apply chapter content to patient care situations (answers to Review Activities available online)
- Exploring Websites
- References
- Suggested Readings
- QSEN Activities

Special elements are sprinkled throughout several chapters to enhance student learning and encourage critical thinking and application of the knowledge presented. These include the following:

- Highlights of historical nursing leaders and managers, many of them in the American Nurses Association Hall of Fame
- Evidence From the Literature with a synopsis of key findings from nursing and healthcare literature

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• Real-World Interviews with healthcare leaders and managers, including nursing staff, clinicians, administrators, risk managers, faculty, nurses, physicians, patients, nursing assistive personnel, lawyers, pharmacists, hospital administrators, and others
• Critical Thinking Exercises regarding a safety- or quality-related issue (answers to Critical Thinking exercises available to faculty online)
• Case Studies to provide the nursing student with a patient care situation calling for critical thinking to solve an open-ended problem (answers to Case Study questions available to faculty online)
• Answers to all questions, opening scenarios, and QSEN activities are available to faculty online

HIGHLIGHTS OF THE TEXT

New to the Second Edition is a robust online evolving clinical case study as an instructional supplement for faculty to guide teaching the content, with options for how to use the case study for student learning. The content includes discussion questions for each section of the case study or guidance for a written paper assignment. The evolving case study pulls content from the text into how to address an evidence-based quality improvement project as a new nurse.

• A strong foundation for evidence-based healthcare with attention to high quality, safe care is emphasized throughout the text.
• Chapters include new information from national, federal, and state healthcare and nursing organizations.
• Leadership and management for frontline nurses are highlighted throughout the text and within each topic.
• Teamwork and interprofessional collaboration is stressed throughout the text.
• The six QSEN competencies with their KSAs are highlighted in the chapters.
• There are many critical thinking activities, case studies, and clinical discussion points for nurses throughout the chapters.
• There is an additional set of critical thinking exercise in Appendix C (answers are available to faculty online).

INSTRUCTOR RESOURCES

1. PowerPoint lecture slides for each chapter serve as guides for faculty presentations in the classroom. These can be obtained for qualified instructors by emailing Springer Publishing Company.

Patricia Kelly
Beth A. Vottero
Carolyn A. Christie-McAuliffe

REFERENCES


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Introduction to Quality and Safety Education for Nurses: Core Competencies for Nursing Leadership and Management, Second Edition
INTERPROFESSIONAL TEAMWORK AND COLLABORATION

Gerry Altmiller

It’s less of a thing to do … and more of a way to be. (Unknown Participant, 2007)

Upon completion of this chapter, the reader should be able to

1. Define interprofessional team.
2. Describe how a rapid response team (RRT) contributes to patient safety.
3. Identify the benefit of collaborative interprofessional teams on patient outcomes.
4. Describe resources interprofessional teams can employ to improve quality and safety for patients.
5. Identify the characteristics of effective interprofessional teams.
6. List the three steps of the TeamSTEPPS Delivery System.
7. Describe how informatics supports the interprofessional team’s ability to more efficiently and effectively solve problems.
8. Describe how constructive feedback and reflection contribute to positive patient outcomes.
9. Discuss strategies the nurse can implement to include the patient as a partner on the interprofessional team.
10. Discuss strategies and techniques to overcome challenges to teamwork and maximize effective interprofessional communication.
A patient’s family approaches the nurse’s station and verbalizes concerns regarding their family member’s care. They are worried about the patient’s lack of energy following surgery to correct a bowel obstruction. They are concerned because the patient is elderly and has not been out of bed for 2 days. He is not eating well and he has diabetes. They ask to speak to the people in charge of the patient’s care.

- What do you know about the members of the interprofessional team caring for the patient?
- How will you bring the patient’s immediate problems to the appropriate team member’s attention?
- How will you convey the family’s concerns to the interprofessional team?
- How can the interprofessional team work together to address this patient’s needs?

With the increasing complexity of patient care, it is clear that no one person can address a single patient’s needs. It takes an interprofessional team of people working together, each contributing their individual expertise for the well-being of the patient. Care for the patient extends beyond the hands-on care provided by direct caregivers. To be effective, patient care requires the coordinated services of many people, some not even directly involved with the patient, yet all focused on one thing, a positive outcome and experience for the patient.

This chapter describes what an interprofessional team is and discusses the characteristics that make a team most effective. It describes how at the very center of the interprofessional team is the patient and the patient’s family and how their individual preferences influence the decisions that the team makes as they assist the patient in achieving optimal patient outcomes. Within this goal of putting the patient front and center of the interprofessional healthcare team, strategies for how best to include the patient as a partner are presented. This chapter highlights resources that can be utilized as well as strategies that individuals and institutions can implement to create an environment where effective interprofessional communication supports patient safety and improves the overall quality of the care provided to patients, including the use of rapid response teams (RRTs). With the increasing emphasis on quality and safety, techniques to improve communication between interprofessional healthcare team members continue to be of great importance. Tools, techniques, and strategies for communication aimed at facilitating patient safety and quality of care are described, including the use of reflection by the nurse and other members of the interprofessional healthcare team as a means of improving patient outcomes. Likewise, TeamSTEPPS is presented as an effective way to ensure interprofessional healthcare teams are able to communicate with each other to promote situational awareness and patient safety. Strategies to create and develop effective team functioning are identified in this chapter. In addition, this chapter discusses how the World Wide Web has increased the availability of resources to support improved interprofessional communication and the dissemination of information. Informatics has contributed to effective teamwork by making information available at a moment’s notice so that team members can exchange ideas to solve problems (Figure 8.1).
Nursing holds a key position on the healthcare team, contributing to the plan of care, delivering nursing services, and providing that vital link between the patient, the patient’s family, and the other members of the healthcare team. Skilled communication between the nurse and other members of the interprofessional healthcare team promote the exchange of clear and concise information, which allows the team to react quickly and appropriately to meet patients’ needs.

WHAT IS AN INTERPROFESSIONAL TEAM?

A team is a group of individuals who work together for a common goal. In healthcare, the interprofessional team consists of people who have a stake or interest in and contribute to the well-being of the patient. An interprofessional team not only includes those directly involved in the patient’s physical care such as the physicians, nurses, and family members, but it also includes those who provide support services such as pharmacists, social workers, dieticians, and those from departments such as housekeeping, radiology, the laboratory, transport services, and physical and occupational therapy. It is important to recognize the valuable contribution that all these interprofessional team members make to the patient’s care.

RAPID RESPONSE TEAMS

Interprofessional teams in the hospital setting may be brought together to focus on identified problems and find solutions. This can happen on a patient care unit or in other areas of the hospital. One common example of an effective team in the hospital is an RRT. An RRT is a team that includes specific healthcare professionals with specialized skills, who can mobilize and deliver immediate patient assessment and intervention if needed at the patient’s bedside any time of day or night, 7 days a week at the beginning signs of deterioration in the patient’s health status. The RRT is separate from a “code” or resuscitation team that is also composed of specialized interprofessional team members who would respond to cardiac and/or respiratory arrest. RRTs were formed based on recommendations by the Institute for Healthcare Improvement (IHI) to improve safety and quality, with the intention of preventing deaths outside of the ICU (IHI, 2012). RRTs may be structured differently within institutions, but most RRTs consist of a physician, critical care nurse, and respiratory therapist, along with other designated interprofessional members, as needed. Expert communication skills are required by RRT members because the patient’s safety and well-being depends on the rapid and accurate exchange of pertinent and clear information between team members coming together in a concerted effort to aid the patient. RRTs support an institution’s nurses by providing access to immediate assistance for any patient with a deteriorating condition. RRTs may be summoned to a patient’s bedside by anyone, including family members. Providing RRT support allows for early intervention at the first sign of deterioration in patients, before they become critically ill or experience a cardiac arrest.

BENEFITS OF COLLABORATIVE INTERPROFESSIONAL TEAMS

At the center of the interprofessional healthcare team is the patient and the patient’s family. Patient-centered care ensures that the patient is an integral part of the team and is central in all interactions and decisions. With patient-centered care, the
interprofessional team acknowledges patient preferences regarding care and acknowledges individual health values and priorities. Without the patient, there would be no need for the team.

Like patients, nurses have not always been considered members of the interprofessional healthcare team; traditionally they have taken direction from hospital administrators and physicians rather than directly contributing to a collaborative plan of care. Historically, nurses were charged with direct patient care and focused mostly on providing patient hygiene under the direction of the physician. Differences in educational requirements prevented even routine tasks such as obtaining a patient’s blood pressure from being delegated to the nurse. Nurses did not have a role in advocating for the patient and physicians did not confer with nurses regarding any aspect of the patient’s care. The interprofessional relationship was strictly one of orders being dictated by the physician team member and orders being carried out by the nursing team member.

Gender issues have also contributed to the lack of interprofessional collaboration or the ability to effectively work together. In the past, males traditionally assumed the physician role while nurses have primarily been female. Much has changed in recent decades with both males and females assuming roles as physicians and nurses, independent of gender. Females still dominate the nursing profession; however, with the U.S. Department of Labor reporting that in 2011, males made up only 9% of the nursing workforce (U.S. Department of Labor, 2013). In comparison, females were reported to make up 36% of the physician workforce (U.S. Department of Labor).

Economic issues have also contributed to the lack of interprofessional collaboration. Nurses represent the largest segment of the hospital-based employee workforce and have been paid as hourly workers by the hospital. Physicians have been community based and have managed their practice as a business, directly billing their patients and the insurance companies. Some of this is changing as the expanding roles of nurses have created opportunities for hospital-based nurses and for advanced practice nurses in all areas of healthcare. Both of these groups of RNs have increased their education and have contributed to bridging the gap between nurses and physicians. Greater requirements in prelicensure education of nurses have also resulted in a bedside nurse that is able to assess, plan, implement, and evaluate care provided to patients, making the nurse a valuable team member.

Nursing knowledge is based on science combined with the art of caring for the individual needs of patients. Nursing brings a holistic perspective to patient care. The connection of the nurse to the patient and family through close and continued interaction allows nurses to understand and advocate for patient concerns and needs regardless of their practice level. Nurses can build rapport between patients and the team and facilitate collaboration between the interprofessional healthcare disciplines involved in the patient’s care. Nurses’ knowledge of the patient experience allows them to identify subtle changes in the patient’s condition and act quickly to prevent complications of illness. The ability of the nurse to function proactively helps to reduce unnecessary costs to hospitals as well as improve patient satisfaction and outcomes.

Nurses need to recognize the value of this perspective and acknowledge the positive impact they have on patient outcomes. It is important that nurses articulate the value of this positive effect on patient satisfaction as well as the financial benefit that nurses bring to the institutions they serve to enhance their role as contributing team members and to advance the profession of nursing.
Recognizing the value of nursing, the Institute of Medicine (IOM), now known as the National Academy of Medicine, in collaboration with the Robert Wood Johnson Foundation (RWJF), published its report, *The Future of Nursing: Leading Change, Advancing Health* (IOM, 2010). This report identified the barriers that prevent nurses from being able to respond to the rapidly changing healthcare system. It also validated the important role that nurses play in the delivery of seamless, high-quality, affordable healthcare to all. The four key recommendations from the report were focused on the role that nursing should have in providing care (Table 8.1).

**Advancing Healthcare Through Improved Education**

Although educational differences exist among interprofessional team members, it is important to recognize that each team member brings a perspective to the team that represents specialized knowledge from his or her discipline. For physicians, the educational requirements include a baccalaureate degree with an additional 4 years of medical school, followed by a year of internship in clinical practice, and 2 years of residency. Medical specialization adds additional years of training and fellowship. For nurses, there are varied levels of educational requirements for entry into practice. These include a 3-year diploma school education, a 2-year associate degree education, and a 4-year baccalaureate degree education as well as master’s completion programs. Other healthcare disciplines have varied educational degree requirements as well. No matter the educational requirements, each healthcare discipline needs to be able to collaborate with others to provide the highest quality care for the patient. While concepts of interprofessional collaboration are included in the educational process of each healthcare discipline, Hood et al. (2014) notes that purposeful planning and early integration of interprofessional learning would foster an enhanced group dynamic as well as a shared commitment to collaboration with recognition of the value of other disciplines.

To support the appreciation of each healthcare discipline’s perspective, expertise, and values, many programs now include an integration of interprofessional education as part of their curriculum. **Interprofessional education** is the opportunity for multiple healthcare disciplines to learn together in the same learning environment simultaneously, gaining a greater understanding for each discipline’s role and contributions. A common example of this is medical and nursing students taking an ethics class together or participating in a communication exercise as part of an orientation program.
The changing socialization of physicians and nurses as well as other disciplines has allowed for the formation of interprofessional teams that not only care for patients but also tackle some of the toughest problems facing healthcare today. In part, this change has come from changes in traditional gender roles as well as the attainment of bachelor and master’s degrees by more and more nurses. Working together, physicians and nurses have developed work processes to address quality and safety on all levels of patient care.

Methods such as **root cause analysis** (RCA) are employed to identify problems within the healthcare system. With RCA, teams work together to systematically
investigate serious adverse events and identify the root cause and contributing factors that lead to error, patient injury, or a negative outcome so that those factors can be corrected. An RCA can be conducted to identify mechanisms within the healthcare system that allowed for the error or near miss to occur. A near miss is an event that could have resulted in an error but was caught in time before it could cause injury. This reporting process allows for both individual growth and development for the nurse as well as correction within the healthcare system’s practices to prevent future errors. RCA discovers the root of a problem by not stopping at the first answer it arrives at for its cause, but by delving deeper into why the problem occurred, asking questions until there are no more questions to ask.

Another process used to improve quality and safety is the Six Sigma method. Six Sigma is a quality assurance strategy developed in corporate America in the mid-1980s by the Motorola Corporation (Stanton et al., 2014). Six Sigma, used to improve existing healthcare processes, involves five steps, also referred to as DMAIC: define; measure; analyze; improve; and control. During the define step of Six Sigma, potential team members are identified that are knowledgeable about the healthcare process or service that has been identified as needing improvement. These team members must have a clear understanding of what the expectation and needs are so they know where to aim the improvement. During the measure step of Six Sigma, the problem is investigated and data are gathered to determine how, when, and where the problem is occurring. The analyze step of Six Sigma allows the team to look for trends and patterns of the healthcare problem from the data so they can identify a root cause. During the improve step of Six Sigma, solutions are identified and implemented, and finally, during the control step of Six Sigma, control mechanisms such as retraining or monitoring systems that ensure that the problem does not occur again are put in place.

RESOURCES FOR INTERPROFESSIONAL TEAMWORK AND COLLABORATION

Nowhere is interprofessional teamwork and collaboration more important than in providing required healthcare to patients in need. Although all members of the interprofessional healthcare team possess specific expertise that would benefit the patient, if they were unable to coordinate those skills and connect vital services together, the patient would not have the best possible outcome. Team members must work together to provide coordinated care to achieve the best results.

Patients are at greater risk during transitions between care. Handoff is a term used to describe the communication method that the interprofessional team uses to transfer patient care information to one another between shifts or between patient care units or hospitals. In healthcare, poor outcomes occur when there are breakdowns in communication, poor teamwork, or inefficient communication “handoffs” that create situations that can lead to errors. Effective interprofessional teams involved in direct patient care have common goals of high quality and safety, and ensuring that information about the patient is communicated accurately and completely supports those goals during transitions of care.

Interprofessional teams in healthcare may be focused on more long-term projects. These interprofessional teams may be assembled to address a number of concerns which may include anything from quality improvement (QI) processes to planning for the future of the healthcare institution. Although the work of
these types of interprofessional teams may seem slower and more deliberate, the
principles that guide them are the same as teams that respond to patient emergen-
cies. For example, a long-term goal of a hospital might be to increase the num-
ber of baccalaureate-prepared RNs to 80% within 10 years. Collaboration between
hospital administration, finance, nursing leadership, and broad representation
from nursing staff, all using effective teamwork and communication strategies,
would be needed to conduct the same steps of assessment, definition of problem,
goal setting, implementation, and evaluation that are part of the nursing process
to achieve goals.

CHARACTERISTICS OF EFFECTIVE INTERPROFESSIONAL
HEALTHCARE TEAMS

Effective interprofessional teams are able to think reflectively about the situation at
hand considering past experiences, contemplate options from all perspectives, and
deliberate the options in an atmosphere of mutual respect. In high-functioning,
successful interprofessional teams, members can voice concerns and opinions,
creating a group dynamic where all members contribute and share in the deci-
sion making. Clear, focused communication and respectful negotiation decrease
the potential for misunderstandings and promote camaraderie among the team
members.

Accountability and Stages of Team Development

_Forming, storming, norming, and performing_ are terms used to describe the stages
experienced by teams as they progress from formation to functioning as high-
performance teams (Tuckman, 1965). The forming stage is generally a short phase
when team members are introduced and objectives are established. As the team
moves into the storming stage, team roles become clarified and processes as well
as structures for the team are established. It is within this process that the details
of the approach being used to accomplish the goals or assignment are decided
upon. The workload of the task becomes clear during this storming phase and can
overwhelm the team members. Conflicts may arise and members build relation-
ships with other team members as they work through conflict resolution. In this
storming stage, teams will fail if work processes and team relationships have not
been well established.

In the norming stage, team members develop a stronger commitment to the
team’s goals and assume responsibility for the team’s progress. Individuals show
leadership in specific areas and team members come to respect each other’s roles.
As members become socialized as a team, they are able to provide construc-
tive feedback to each other. It is important to note that teams can pass back and
forth between the storming and norming stages as new tasks are assigned to the
team. The performing stage is realized through achievement of the team’s shared
vision of the goal. At this point, teamwork feels easier and members can for the
most part join and leave the team without affecting the team’s performance. The
progress achieved from the members’ hard work establishes the team as a high-
performance team.

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Delegation

Willingness to assist colleagues is pivotal to interprofessional teamwork and collaboration. Teamwork requires that members can effectively delegate work to each other. In patient care, it is essential that delegated tasks are within the scope of practice of the individual to whom the task is being delegated. For example, inserting an indwelling urinary catheter could be delegated by a nurse to another nurse. It could not be delegated to a nursing assistant. When delegating, the nurse employs the following steps: assess and plan; communicate what needs to be done; ensure availability to assist and support; and finally, evaluate effectiveness and give feedback (National Council of State Boards of Nursing, 2016).

With all delegation, clear communication of what needs to be done and confirmation of understanding from the individual being delegated to is essential to ensure patient safety. The nurse, who is delegating, needs to provide an opportunity for clarification and questions. If an outcome does not meet expectations, the nurse should lead the discussion with those involved to identify reasons for the unexpected outcome and determine what could be learned from the experience to improve care and to ensure a successful outcome in the future.

Crew Resource Management

Crew resource management (CRM) refers to educating individuals that work in high-stress systems where the human aspect of operations can create an increased potential
for error. Originating in the aviation industry for the cockpit crew, CRM develops communication, leadership, and decision-making safety strategies to combat the potential for human error that is inherent in high-stress systems and its devastating effects. The healthcare industry shares an interest in interprofessional teamwork and clear communication with the aviation industry to prevent catastrophic events. Healthcare has applied many CRM strategies to the daily interactions and continuous QI processes of the interprofessional healthcare team. CRM communication, leadership, and decision-making safety strategies focus on cognitive and interpersonal skills to promote situational awareness.

**Situational awareness** is having the right information at the right time alongside the ability to analyze that information to appropriately and effectively take action. Having this awareness, allows for all team members to be conscientious of the facts in any given situation. The vehicle for this attentiveness is effective communication between interprofessional healthcare team members.

### TEAMSTEPPS

Within healthcare, TeamSTEPPS is a program developed to provide training for effective communication techniques similar to those promoted by CRM. The program is designed to teach interprofessional teams how to communicate with each other to promote situational awareness and patient safety. Specifically TeamSTEPPS is

- A powerful solution to improving patient safety within an organization
- An evidence-based teamwork system to improve communication and teamwork skills among healthcare professionals
- A source for ready-to-use materials and a training curriculum to successfully integrate teamwork principles into all areas of the healthcare system
- Scientifically rooted in more than 20 years of research and lessons from the application of teamwork principles (Agency for Healthcare Research and Quality [AHRQ], n.d., p. 2)

Developed in collaboration with the Department of Defense, the Agency for Healthcare Research and Quality (AHRQ) initiated TeamSTEPPS to augment the effort and abilities of interprofessional teams specially to ensure the highest patient outcomes within healthcare institutions and systems. By focusing on a three-phased process of team development, the program optimizes resources within a team, provides a framework for resolving conflict and enhancing communications, and provides the basis to effectively address potential barriers to effective patient safety and quality care.

AHRQ lists the three phases of TeamSTEPPS as (a) assessment; (b) planning, training, and implementation; and (c) sustainment. Assessment involves pretraining evaluation to determine the willingness and capacity of an organization to change. Within this phase of the process, an interprofessional team is established that is made up of a cross-section of healthcare leaders and professionals within the organization itself. This phase also involves conducting a comprehensive site assessment that identifies areas of weakness and needs relative to teamwork. From this assessment, the second phase of TeamSTEPPS is initiated: a training program is developed to effectively overcome the deficiencies of the team as well as maximize its strengths. Once this education has occurred, the third and final phase can be initiated. The long-range goal of the third phase is to maintain and continually improve teamwork efforts throughout the organization. Through coaching, feedback, and reinforcement of strategies taught,
teamwork and communication skills can be continually reinforced and built upon as opportunities for improvement in clinical and administrative situations throughout the organization.

Situation, Background, Assessment, and Recommendation

A framework for communication that has been implemented in many healthcare settings is SBAR, an acronym for the words situation, background, assessment, and recommendation (AHRQ, n.d.). It was developed by the military and is now applied to healthcare as a means to relay significant information regarding a patient’s condition or to be used as patients’ care is communicated and handed off from one caregiver to another (Table 8.2).

### TABLE 8.2 SITUATION, BACKGROUND, ASSESSMENT, AND RECOMMENDATION

<table>
<thead>
<tr>
<th>SBAR</th>
<th>MEANING</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Situation: Describe what is happening with the patient</td>
<td>Doctor, I am calling about Mrs. Smith, your patient admitted yesterday to room 304 with respiratory distress.</td>
</tr>
<tr>
<td>B</td>
<td>Background: Explain the background of the patient’s circumstances</td>
<td>She was comfortable during the evening after being placed on 2 L oxygen by nasal cannula and receiving 20 mg of furosemide (Lasix) intravenously, but is now complaining of shortness of breath.</td>
</tr>
<tr>
<td>A</td>
<td>Assessment: Identify what data you have regarding the situation</td>
<td>Her respiratory rate is 28. Pulse is 110/min and her oximetry measures 91%. She has crackles in the lower third of her lung fields bilaterally. She is laboring to breathe.</td>
</tr>
<tr>
<td>R</td>
<td>Recommendation: Identify what you think needs to be done to correct the situation</td>
<td>I think she may need her furosemide (Lasix) dose increased.</td>
</tr>
</tbody>
</table>

SBAR, situation, background, assessment, and recommendation.

**ADDITIONAL TECHNIQUES FOR EFFECTIVE COMMUNICATION WITHIN INTERPROFESSIONAL TEAMS**

Clear and open communication among team members allows ideas to be shared and counteracts the potential for human errors of judgment. Techniques such as cross-monitoring require that team members listen carefully to the details being communicated and provide correction for the team if needed. **Cross-monitoring** is the process of monitoring the actions of other team members for the purpose of sharing the workload and reducing or avoiding errors (AHRQ, n.d.). An example of this technique can occur during grand rounds where interventions are discussed by a group of physicians, nurses, pharmacists, and other healthcare providers. Decisions verbally agreed upon can sometimes be missed as orders are articulated for the patient. A nurse asking for clarification of an order he or she recalls differently is an example of cross-monitoring.
Other communication techniques can be used to bring attention to patient situations. A callout is used to communicate important information to the entire team simultaneously (AHRQ, n.d.). In a callout, the team member would callout to others for assistance. For example, during a resuscitation effort, also known as a code, a nurse monitoring the patient’s blood pressure might assertively state the changing status to the medical resident. Typically, the callout is then followed by a check back, which verifies receipt of the information and provides feedback and appropriate response. In this example, the resident might acknowledge the callout by asking for medication to be given to stabilize the patient’s blood pressure. Check back requires the receiver verbally acknowledge the message to provide opportunity for correction if needed.

The two-challenge rule states that if an individual does not believe that his or her first attempt to bring attention to a concerning patient situation has been successful, the individual is obligated to make a second attempt to make the problem known to others on the team (AHRQ, n.d.). The two-challenge rule is designed for when team member’s input is ignored purposely. It is the obligation of the person to bring it forward again to make sure it is not ignored. An example of the two-challenge rule is when a nurse tells a physician about a concern she has for the patient, like a low urine output, and the physician does not address it for one reason or another. The nurse is obligated to bring it forward again.

Another tool that can be used to advocate for a patient is CUS, which is an acronym for the words concerned, uncomfortable, and safety (AHRQ, n.d.). Frequently, nurses are expected to advocate for their patients but they may not know how to do so. CUS is a tool that assists the nurse in taking an assertive stance to do what the nurse believes is needed for the patient. For example, in the case of a larger than recommended dose of medication being ordered for a patient, the nurse may approach the ordering provider and state, “I’m concerned with the dose that has been ordered. I am uncomfortable giving such a large dose to this patient because of her renal condition. I don’t think it is safe.”

### STRATEGIES FOR EFFECTIVE COMMUNICATION WITHIN INTERPROFESSIONAL TEAMS

Time-outs are mandated in the operating room (OR) and procedure suites by The Joint Commission to help ensure patient safety (The Joint Commission, n.d.). Time-outs can also be initiated during any procedure at the bedside. The time-out is an opportunity for everyone in the room to stop and ensure that the correct patient is having the correct procedure done to the correct site. The time-out requires that everyone stop his or her clinical work and devote his or her attention to the patient. Another safety strategy the team can employ is the use of safety huddles. Safety huddles allow those caring for the patient to review pertinent information and the plan of care. It is similar to a team huddle used in sports and ensures everyone is aware and working toward the same goals for the patient. An example of when a huddle would facilitate effective, coordinated care is when medications need to be altered due to change in a patient’s status. Responding to an adverse reaction of a patient to a specific medication for instance would best be handled with a focused, coordinated approach by as many of the interprofessional team members as possible.

All of the aforementioned communication strategies are developed by the AHRQ which provides reference videos for clinicians, administrators, and educators demonstrating TeamSTEPPS tools, strategies, and techniques at its website, www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/instructor/videos/index.html (Table 8.3).
Another way that team members can work to prevent errors is by reporting them to other members of the healthcare team. Timely reporting of errors and near misses, also known as close calls where an error could have occurred but was stopped before it caused harm, provides an opportunity for the team to learn from them. In most cases, errors and near misses are not the result of a single person’s actions. They are often the result of a failure within a healthcare system. By reporting all errors or near misses, the need for an RCA can be evaluated more completely and effectively and actions can be taken to ensure the same situation does not put patients at risk in the future.

<table>
<thead>
<tr>
<th>TABLE 8.3 AVAILABLE TOPICS FOR REFERENCE AND EDUCATION ON AHRQ TEAMSTEPPS WEBSITE</th>
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<tbody>
<tr>
<td><strong>SBAR</strong></td>
</tr>
<tr>
<td><strong>Cross-monitoring</strong></td>
</tr>
<tr>
<td><strong>Callout</strong></td>
</tr>
<tr>
<td><strong>Two-challenge rule</strong></td>
</tr>
<tr>
<td><strong>CUS</strong></td>
</tr>
<tr>
<td><strong>Check back/read back</strong></td>
</tr>
<tr>
<td><strong>Handoff</strong></td>
</tr>
</tbody>
</table>

CUS, concerned, uncomfortable, and safety; SBAR, situation, background, assessment, and recommendation.

**CRITICAL THINKING 8.1**

The nurse calls the physician to report that a patient has suddenly developed hives while receiving an IV dose of antibiotic. The hives are covering most of his back. The physician tells the nurse that he does not think that the antibiotic is the cause and that she should just continue to monitor the patient. The nurse is concerned that the hives may be the beginning of a serious allergic reaction.

1. What safety strategy would be most effective for the nurse to use to advocate for the patient in this situation?

Another way that team members can work to prevent errors is by reporting them to other members of the healthcare team. Timely reporting of errors and near misses, also known as close calls where an error could have occurred but was stopped before it caused harm, provides an opportunity for the team to learn from them. In most cases, errors and near misses are not the result of a single person’s actions. They are often the result of a failure within a healthcare system. By reporting all errors or near misses, the need for an RCA can be evaluated more completely and effectively and actions can be taken to ensure the same situation does not put patients at risk in the future.

**USE OF INFORMATICS FOR EFFECTIVE PROBLEM SOLVING**

Minimizing the potential for errors is the goal of everyone on the healthcare team. Participating in behaviors that guard against error and protect patients is a fundamental part of daily healthcare practice. There are many available web resources funded by government agencies and national healthcare organizations that are designed to improve teamwork and collaboration, prevent error, promote patient safety, and
improve the quality of the care that patients receive. Nurses, as well as other team members, can access these resources to learn about strategies that address quality and safety as a way to improve their practice and keep patients safe from errors (Table 8.4).

Communication and Interprofessional Teamwork in QI

All members of the interprofessional healthcare team have an obligation to improve patient care processes and outcomes by focusing on communication and QI. **Debriefing** is the process of reviewing performance effectiveness following challenging patient care situations. Utilizing strategies such as debriefing allows the interprofessional team to evaluate the effectiveness of their communication and teamwork and to identify areas where improvement is possible. It is during debriefing that constructive feedback is given and received. All team members should feel comfortable to participate in this process. Individuals may differ in how they provide feedback to peers, but feedback, whether positive or negative, should always be an unbiased reflection of what occurred, opening the door to a discussion of evidence-based practice (Clynes & Raftery, 2008). Constructive feedback should carefully detail events as they occurred and avoid opinion. Constructive feedback recounts events, offering options for improvement. Constructive feedback is most effective when focused on a task, a process used, or on self-regulation, because that focus contributes to learning; feedback focused on the individual is less effective because it does not increase learning (Hattie & Timperley, 2007). For instance, feedback such as “It was wise to gather your supplies before you went into the patient’s room” focuses on the task. Feedback such as “Your explanation to the patient before you began allowed the patient to trust you” focuses on the healthcare process. Feedback such as “It is good that you realized you broke sterile technique and changed your gloves” focuses on self-monitoring. All of these support knowledge development. Feedback such as “You did a good job” focuses on the individual and is least effective because it does not add to one’s understanding of what aspects of his or her practice were effective and “a good job.” Although it is difficult to give and receive unflattering feedback, team members must understand that feedback is essential for growth. Feedback is the mechanism that allows one to make continual adjustments in practice. Receiving feedback is often the catalyst for change and should be viewed as an opportunity for growth. Sometimes when receiving feedback that is perceived as negative, it challenges the team member to consider the validity of the comments made, particularly
considering whether the same feedback has been provided previously by other sources. If after consideration, feedback is perceived as inaccurate, the team member can ask for examples of poor performance and focus on improvement, asking the person providing feedback how he or she feels improvement can be achieved.

Auditing Patient Care and Outcomes

Teams can work together to conduct audits and other organizational studies that measure quality, safety, and patient outcomes which can have a significant impact on the process of QI. Collecting and analyzing data regarding patient care practices and patient outcomes allows the team to document differences between the actual system’s performance and the goals of the organization. By documenting differences, changes can be made to narrow the gap between the two and improve team performance for quality of care and patient safety.

REFLECTION AND FEEDBACK

Communication and interprofessional teamwork skills are a huge part of the protection from injury and complications that nurses provide for patients. These skills help not only when interacting with patients and healthcare team members to solve problems but also when nurses reflect on patient care events and discuss ways to improve outcomes. Providing feedback to team members allows the team to identify strengths and weaknesses, make changes to the healthcare system, and adjust practice for individual growth and development.

Self-evaluation of one’s communication and decision making is a crucial element of professional growth and strengthens one’s ability to contribute to the team’s decisions by employing strong clinical judgment. As discussed earlier in the chapter, reflection supports confidence in decision making and provides an opportunity for the individual to consider his or her interactions with others and determine what actions enhanced a positive outcome and what actions worked against it. Reflecting on clinical situations and their outcomes allows team members to make positive changes to improve practice (Figure 8.2).

Tanner Model of Thinking Like a Nurse

Tanner’s model of Thinking Like a Nurse (2006) demonstrates how clinical judgment is developed through reflection, enhancing critical thinking skills. These skills are essential to develop as one gains expertise in protecting patients through situational awareness and mindfulness. Mindfulness in this context implies staying focused with the ability to see the significance of early and weak signals as well as to take strong and decisive action to prevent harm (Weick & Sutcliff, 2001). Tanner’s model stems from review of approximately 200 studies focused on the nurses’ development of clinical judgment. From her review, she concluded that
Clinical judgments are more influenced by what nurses bring to the situation than the objective data about the situation at hand. Sound clinical judgment rests to some degree on knowing the patient and his or her typical pattern of responses, as well as an engagement with the patient and his or her concerns. Clinical judgments are influenced by the context in which the situation occurs and the culture of the nursing care unit.

**EVIDENCE FROM THE LITERATURE**

**Citation**


**Discussion**

The complexity of today’s health problems requires more than the knowledge of one provider. This necessitates an interprofessional collaborative approach. Identified by the Institute of Medicine (IOM) as a core competency of all healthcare professionals, interprofessional collaboration has different meanings to different people. Examples of interprofessional collaboration include understaffed hospital personnel working together during the night shift to ensure patient safety or nurses and physicians discussing a patient plan to decrease complications or multiple disciplines working in partnership for education and research endeavors to decrease mortality and morbidity within their institution.

One of the barriers to achieving interprofessional collaboration has been the socialization of the separate healthcare disciplines, which has been focused on how they differ from one another. Up until recently, each healthcare discipline was taught without interacting with the other healthcare disciplines; each establishing its own distinct body of knowledge.

**Implications for Nursing**

Nursing has built a large body of knowledge based on scientific research. Nursing’s strengths include its holistic orientation to the patient and its ability to facilitate the bridging of disciplines and boundaries, thus supporting interprofessional collaboration. The reward of interprofessional collaboration is an expanded perspective where multiple healthcare disciplines work together to develop new models of care, new methods of care delivery, and breakthroughs in disease management, and health promotion. Through interprofessional collaboration, knowledge obtained from research can be translated into practice for the benefit of human health. The nursing profession is in a key position to support collaboration between all healthcare professionals from all disciplines as they move forward to meet the core competencies identified by the IOM.
Nurses use a variety of reasoning patterns alone or in combination. Reflection on practice is often triggered by a breakdown in clinical judgment and is critical for the development of clinical knowledge and improvement in clinical reasoning (Tanner, 2006, p. 204).

STRATEGIES TO INCLUDE THE PATIENT AS PARTNER

Communication between the healthcare team, the patient, and the patient’s family during times of stress and illness can be challenging but it is essential to safety and a key factor in patient satisfaction. Patients and families look to the nurse to provide a personal connection with the team. In addition, many patients and families look to the nurse as a source of information. The nurse should use language that is understandable to the patient and provide patient-centered information that allows the patient to assume a role of partnership rather than dependency. The nurse plays a pivotal role in including the patient, providing explanations, and providing access for the patient to communicate with other members of the interprofessional team. To promote the patient’s partnership with the interprofessional healthcare team, the nurse can create connections for the patient to other members of the team, such as providing information regarding when the physician usually makes rounds. The nurse can encourage the patient and family to write down their questions for the physician and put the questions in the chart so that the physician may address them.

Developing Enhanced Communication Skills

The nurse must possess strong communication skills to contribute to effective team functioning. Communication is the interactive process of exchanging information. Effective communication is clear, precise, and concise, with no ambiguities. Safety is enhanced when the communication sender uses the proper terminology and provides an opportunity for clarification. Ideally, in response, the receiver of the communication acknowledges the message as heard and understood.

Many barriers can interfere with communication, such as knowledge gaps, education levels, culture, language barriers, or stress. It is important for nurses to develop strategies to identify and overcome these barriers. Nonverbal cues, such as the patient’s facial expression, eye contact, and body posturing, may signal a message from the patient, but when safety is a priority such as it is in healthcare, interpreting nonverbal cues only is not an acceptable technique for communicating. Any perception one develops from nonverbal communication must be verified verbally to maintain a safe environment.

Effective communication is essential to maintaining a safe and protected environment for patients. Ineffective communication continues to be identified as the root cause for many sentinel events reported to The Joint Commission (2016), which explains why improving communication is a safety priority for the next decade. Students and nurses who are new to practice may find team interaction intimidating for several reasons, including that they do not clearly understand the culture of healthcare communication, they have known knowledge gaps, and they have not yet gained enough experience in the healthcare setting from which they can draw. Recognizing what information needs to be communicated to which individuals on the team and in what time frame is essential to developing effective communication skills. Regularly scheduled meetings of key team members help to ensure effective
communications. Quality and safety in patient care are strongly influenced by the ability of the healthcare team to communicate clearly without uncertainty, in a timely manner, and to contribute to the healthcare team’s productive, efficient approach to patient care.

REAL-WORLD INTERVIEW

In the operating room (OR), no one can be an individual. Everyone works as a team. We make it a team effort from the minute we meet the patient. The nurse anesthetist and the circulating nurse go together to pick up the patient. Even moving the patient onto the table is a team effort to ensure the patient’s safety. Everyone has to share information and be able to communicate. The time-out procedure is a great example of teamwork and communication in the OR. Everyone must stop what he or she is doing and be attentive to the exchange of information to ensure the patient’s safety. There is a lot of camaraderie in the OR because of the high stress associated with the work we do. Each member of the team contributes. The nurse anesthetist has to be a calming force in the room to instill confidence in the rest of the team. In the OR, there is a lot of autonomy. As an advance practice RN, I feel valued as a team member. It motivates me to communicate with everyone, go above and beyond what is required, and take pride in what I do.

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Strategies for Communication in Difficult Situations

Challenging patient care situations such as patient resuscitations, difficult patient procedures, rapid response efforts, or end-of-life events require extreme attention and clarity. Unnecessary conversation should cease during these situations and all communication should focus on the situation at hand without distractions. To ensure patient safety at these times, communication senders and receivers should continually verify their communication using read backs or check backs. For example, during a difficult labor and delivery, the physician might assertively request many urgent medications and interventions. In this chaotic and unnerving scenario, it is essential that the nurse and other healthcare professional verify what orders and instructions are being relayed by repeating them to those giving the orders. In addition, documentation must be clear and accurate during these times so as to provide a written account of events. It is during these types of challenging patient care situations that communication with patients and families can sometimes be overlooked. This can be avoided by including the patient in decision making whenever possible and appointing someone on the team to provide updates to the family. Family presence at patient resuscitations is becoming more commonplace. Institutions that support this practice designate a member of the team, frequently a nurse, to support the family and explain the interventions and actions of the healthcare team’s efforts. Supporting the family during such a high-stress, high-stakes event requires skillful communication that is clear, accurate, and compassionate.
Managing Conflict

It is vital to patient safety that the lines of communication remain open among all those involved in the patient’s care. When there is disruption in the smooth flow of communication among team members, it is important to address it promptly before it becomes a more prolonged barrier to communication. Destructive events such as physicians who will not respond to pages, nurses who are resistant to carrying out legitimate orders, or pharmacists who do not move quickly to fill STAT or urgent orders prescriptions, create difficult communications among healthcare providers that can negatively impact patient care (Table 8.5). It is important to address misunderstandings and conflicts promptly so that they do not become long-standing barriers to communication. Team members must be vigilant in fulfilling their ethical duty to work together for the patient’s well-being.

Negative or difficult communication in the work environment can come from patients, families, physicians, other nurses, or any person involved in the operations of the institution. Physicians who yell, do not answer calls, and display disrespect and condescension toward colleagues make it uncomfortable to practice. Miscommunications between the interprofessional team can put patients at risk. Stressed patients, families, and/or staff can act out frustrations and aggression. It is important that all members of the interprofessional team respect the expertise of each individual, giving each the power to speak up and provide input in decision making with the team. Those in leadership roles should work to equalize the power structure so that all feel safe to contribute (Rittenmyer, Huffman, Hopp, & Block, 2013).

Horizontal Violence

One of the most troubling conflicts for nurses is nurse-to-nurse aggression, also known as lateral violence or horizontal violence (Rittenmeyer et al., 2013). Horizontal violence is uncivil behavior toward colleagues that may manifest as making faces or raising eyebrows in response to comments, making snide remarks, withholding information that interferes with a colleague’s ability to perform professionally, refusing to help, or appearing not available to give help. Scapegoating (blaming one person for all negative things that have happened), criticizing, breaking confidences, fighting among nurses, and excluding peers from dialogue and activities are all forms of horizontal violence and result in injury to the dignity of another (Griffin, 2004). Nurses can experience...
physical consequences (loss of sleep, weight loss, irritable bowel syndrome) and/or psychological consequences (depression, anxiety, and loss of confidence) as a result of lateral violence (Becher & Visovsky, 2012). In addition, lateral violence can interfere with continuity of care and be detrimental to patients and to the institutions that provide care.

When encountering lateral violence, nurses should respond to it in a manner that focuses on consensus building rather than respond emotionally with anger. If a communication becomes angry or difficult, the nurse can refocus the interaction on the patient’s safety and well-being. Refocusing on the patient’s needs will take the focus off of the power struggle that occurs when people are angry. In addition to protecting one’s self, nurses have an obligation to report behaviors that compromise patient safety or the well-being of coworkers to their supervisor or someone else in authority to adequately address the problem. Conflicts and negative behaviors place patients at risk because they serve as a distraction preventing nurse from functioning at their best. In addition, conflicts can keep nurses from communicating concerns to physicians, from asking questions when they are unsure, and from asking for help when critical situations arise.

Besides horizontal violence between and among nurses themselves, nurses can experience hostile work conditions from physicians, patients, or their families. The nurse can utilize refocusing or de-escalation strategies with physicians, patients, and families as

<table>
<thead>
<tr>
<th>HEALTHCARE PROVIDER</th>
<th>COMMUNICATION ISSUE</th>
<th>THE NURSE’S BEST COMMUNICATION APPROACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>Not answering page</td>
<td>Call physician’s office or overhead page to solve immediate problem; later discuss with physician that the patient’s needs are the primary concern and give the reason for the page.</td>
</tr>
<tr>
<td>Physician</td>
<td>Speaking in an angry condescending manner</td>
<td>Maintain calm and keep focus on the patient; state your primary concern is to solve the patient’s immediate need. Identify the patient’s need clearly and succinctly.</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>Not filling STAT orders quickly</td>
<td>Maintain calm and explain patient’s immediate need.</td>
</tr>
<tr>
<td>Unlicensed assistive personal</td>
<td>Not following through with delegated duties</td>
<td>Explore reasons for why duties were not completed. If needed, make adjustment to workload. Develop plan for future communication regarding delegated duties.</td>
</tr>
<tr>
<td>Nurse</td>
<td>Rolls eyes and sighs during report; indicates irritation with you</td>
<td>Respond in civil tone, stating that you sense there is something the nurse wants to say and that you learn when people are direct. Ask nurse to please be direct with his or her concerns.</td>
</tr>
<tr>
<td>Nurse</td>
<td>Does not provide assistance when needed</td>
<td>Explore reasons for lack of assistance; be quick to volunteer to help others so they will be just as quick to return the favor when you need help.</td>
</tr>
<tr>
<td>Nurse</td>
<td>Resistant to carrying out legitimate orders</td>
<td>Explore concerns related to orders; develop plan. Offer assistance to peers when able.</td>
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well. Again, an effective tool to de-escalate difficult or angry communication is to bring
the focus of the conversation back to the patient. Refocusing the discussion back on
the patient’s needs takes the focus off any perceived power struggle and helps everyone
to refocus on the priorities at hand. Nurses can enlist the support of more senior colleagues
when conflicts arise with team members. Other useful neutralizing techniques include
listening attentively to others and demonstrating concern. Nurses can reduce negative
situations by identifying people that are receptive to their questions and are willing to
serve as resources. It is important for nurses to set the example by ending conversations
where coworkers are being discussed in a negative manner.

New-to-practice nurses are more vulnerable to horizontal violence and hos-
tile work conditions in the healthcare environment due to their lack of experience.
Addressing these conditions as soon as possible frequently puts an end to it. However,
it is important not to be confrontational in one’s approach. An effective tactic against
horizontal violence is to develop de-escalation strategies for these encounters, which
can decrease the intensity, and stress of the situation. When confronted with nonverbal
innuendos such as eyebrow raising, rolling of eyes, and long sighs by peers, one can be
direct and say, “I sense that there is something that you want to say to me. I learn best
when people are direct. It’s okay if you are direct with me” (Griffin, 2004). This type of
response directly addresses the horizontal violence in a civil manner without aggres-
sion. It indicates to the violator that his or her body language is perceived as negative
and that it is preferable for the recipient to discuss the reason for it rather than ignore
it. It should be said in earnest and not with anger to de-escalate the situation and open
the lines of communication. When de-escalation strategies are not successful, Griffin
and Clark (2014) suggest using the CUS acronym stating “I’m concerned with the way
you are speaking to me, I’m uncomfortable with where this conversation is going, and
I don’t think it is safe for us to continue.” Using this strategy allows the exchange to
end in a civil manner before it escalates further.

Those in leadership positions have a crucial role in creating a workplace envi-
nronment where horizontal violence and hostile communications are not tolerated.
Promoting a team structure where power is shared among all members improves deci-
sion making and workload distribution (Rittenmeyer et al., 2013). Leaders need to set
the standard for realistic expectations regarding workload so that their staff can meet
those expectations and have a sense of accomplishment and satisfaction with their
work and their work environment rather than feeling discouraged. Nursing leaders
within the organization have an obligation to their direct care nurses to establish poli-
cies that discourage horizontal violence and help staff feel comfortable in confronting
such behavior without fear of retaliation (Rittenmeyer et al).

**CRITICAL THINKING 8.3**

A new-to-practice nurse who is on orientation is assigned a complex patient to care for
with his preceptor. During a stressful exchange, the preceptor states, “You’re way too
slow! You are never going to make it here if you don’t pick up the pace.”

1. What strategies for difficult communications would be most appropriate to
use in this instance?
2. When should the new-to-practice nurse address this with the preceptor?
3. What would be the new-to-practice nurse’s best communication approach
with the preceptor?
Communicating With Preceptors

Preceptors are experienced nurses who provide orientation and support to new-to-practice nurses as they learn the roles and responsibilities of a new job. Preceptors have increased responsibilities of caring for patients while providing instruction to new nurses. They are frequently chosen for this important role because of their expertise in caring for patients and because they exemplify professional behaviors. New-to-practice nurses rely heavily on their preceptors to guide them in learning how to communicate with other team members and become a productive member of the healthcare team. Communicating with team members requires that nurses maintain a professional presence and act with confidence. During the orientation period, communication can be intimidating for the new nurse. It is difficult to feel like a valued member of the team when one is not sure about what to anticipate next. It can be a stressful time for both the preceptor and the orientee, particularly during challenging patient care situations. To diffuse any stressful communication, an honest and open exchange between the preceptor and the orientee at a quiet moment later will provide an opportunity to clarify concerns and reach an understanding about expectations. The new nurse can open the discussion by identifying his or her desire to learn and understand the situation. New nurses need to maintain realistic expectations regarding their knowledge base and expertise and seek feedback that will help them develop skill and effective clinical judgment. Accepting that he or she has knowledge gaps will allow the new nurse to ask questions without injury to self-esteem. Collaboration skills improve as the nurse develops a better understanding of the work expectation and unit routine.

Cognitive Rehearsal

It is most important to continually promote an environment of respect and collaboration. Nurses must challenge themselves to use respectful negotiation when disagreements occur between members of the healthcare team and to remain civil in the face of incivility as part of their professional development. Cognitive rehearsal is one strategy that the nurse can use when confronted with incivility from a coworker or another person. Cognitive rehearsal is a prepared response that one practices ahead of time that would address a negative comment or situation in a civil manner. It allows one not to react emotionally but to pause and respond with a rehearsed, intellectually driven, civil response. For instance, if a coworker harshly criticizes the speed with which you
complete a task, rather than react emotionally and become hurt and angry, you might respond by saying, “This is different from how I learned. Can you help me to understand how you complete it so quickly?”

As mentioned earlier, reflection and the ability to gain insight into one’s actions can facilitate powerful, effective change. Specifically, reflecting on your ability to communicate with colleagues and other members of the interprofessional team provides an opportunity to consider behaviors that build consensus among colleagues and behaviors that create barriers to communication and interfere with safe patient care. During reflection, one should ask oneself, “What went well?” “What could have gone better?” “What could I have done to improve this situation?”

REAL-WORLD INTERVIEW

Being a new nurse had its challenges. I had worked as an extern and then as a technician, but when I transitioned to an RN, I realized how much I was responsible for and had to learn quickly how to deal with the stress. The hardest part was knowing the right thing to do for the patient and who I could comfortably go to for questions. Even though I felt I had a good education, it took a good year to feel comfortable with my practice and confident with my knowledge and skills. I was hired at the same time as another nurse and we supported each other during orientation. My hospital also had a nurse residency program and it helped me to know that my peers on other units were having the same feelings and difficulties that I was having. In the program, we talked about communication and about working with complex patient and family situations. We supported each other a lot through my first year of nursing practice.

Katie Bicknell
Children’s Hospital of Pennsylvania
Philadelphia, Pennsylvania

You and a senior colleague are assigned to the same patient room. You are caring for the patient in Bed B and she is caring for the patient in Bed A. You notice that the patient in Bed A is sleeping. On the bedside table, there is a filled medication syringe and an empty vial labeled heparin, 10,000 units/mL. You carry the medication syringe and heparin out to the nurse’s station and state to your colleague, “These were on the bedside table.” She takes them from you and states, “Yes, I have to remember to give the heparin to him when he wakes up” and returns them to the patient’s bedside table.

1. What standard is your colleague violating?
2. Recognizing that your colleague did not react to your implied concern for the patient’s safety and the standard of practice, what communication strategy would you implement to maintain this patient’s safety?
3. How can you address practice concerns like this from an organization’s point of view to prevent this type of practice?
Hospital and Nursing Leadership

Hospital and nursing leadership have a significant influence on how teams function. Leaders can set the tone for communication, role model effective conflict management, and create and foster an environment that facilitates safety and quality care. Nurse managers, preceptors, and other leaders within the healthcare organization can support new-to-practice nurses by providing effective feedback. Nurses can approach leaders to facilitate needed change when a chain of command authority is needed. Most leaders continually assess their environment as well as the people that report to them to determine if adequate support is provided for their subordinates to do their jobs. However, leaders can miss subtle signs of trouble or inefficiency. In that case, nurses must take it upon themselves to approach the leader to ask for help. Effective communication and team building help ensure the message for requesting help or clarification will be heard.

The responsibility of the nurse manager to serve as a role model for team building and collaboration cannot be understated. The nurse manager will be the leader that direct care nurses will have the greatest amount of interaction with, making it essential that he or she demonstrate active listening and partnership in solving problems. Engagement is supported by feedback that builds rather than tears down so skills in delivering and receiving constructive feedback can be demonstrated by the nurse manager so that others can emulate them. Behaviors that demonstrate respect and collegiality will build and sustain a civil work environment and set the expectation for the interprofessional team.

Interprofessional teamwork and collaboration is essential to ensure quality healthcare for patients and maintain safety. Nurses are valued members of the interprofessional healthcare team. Nurses’ contribution to the patient’s care include knowledgeable assessments, reflective thinking, effective planning, thoughtful interventions based on evidenced-based practice, and careful evaluation of care. Nurses’ communication skills play a pivotal role in team building. Nurses who communicate concerns and address problems enhance their ability to prevent errors, achieve positive patient outcomes and patient satisfaction, and improve the system in which they work.

KEY CONCEPTS

1. An interprofessional healthcare team consists of people who have a stake or interest in and contribute to the well-being of the patient, for example, physicians, nurses, family members, those who provide support services, such as pharmacists, social workers, dieticians, and those from departments such as housekeeping, radiology, the laboratory, transport services, and physical and occupational therapy.

2. A rapid response team (RRT) is a team that includes specific healthcare professionals with specialized skills, who can mobilize and deliver immediate patient assessment and intervention if needed at the patient’s bedside any time of day or night, 7 days a week at the beginning signs of deterioration in the patient’s health status.

3. Recognizing the value of nursing, the Institute of Medicine (IOM), now known as the National Academy of Medicine, in collaboration with the Robert Wood Johnson
Foundation (RWJF), published its report, *The Future of Nursing: Leading Change, Advancing Health* (IOM, 2010). The four key recommendations from the report were focused on the role that nursing should have in providing care (Table 8.1).

4. To effectively care for and coordinate care delivery, interprofessional healthcare professionals require repeated blended educational experiences to achieve four interprofessional educational competencies, that is, understand the scope of responsibilities of each team member, maintain ethical conduct and quality of care within the team to develop respect and trust, communicate effectively with patients, families, and healthcare team members, and utilize teamwork behaviors in executing patient care requirements.

5. Root cause analysis (RCA) discovers the root of a problem by not stopping at the first answer it arrives at for its cause, but by delving deeper into why the problem occurred, asking questions until there are no more questions to ask.

6. Six Sigma, used to improve existing healthcare processes, involves five steps, also referred to as DMAIC.

7. In healthcare, poor outcomes occur when there are breakdowns in communication, poor teamwork, or inefficient communication “handoffs” that create situations that can lead to errors.

8. *Forming, storming, norming, and performing* are terms used to describe the stages experienced by teams as they progress from formation to functioning as high-performance teams (Tuckman, 1965).

9. When delegating, the nurse employs the following steps: assess and plan; communicate what needs to be done; ensure availability to assist and support; and finally, evaluate effectiveness.

10. Originating in the aviation industry for the cockpit crew, crew resource management (CRM) develops communication, leadership, and decision-making safety strategies to combat the potential for human error that is inherent in high-stress systems and its devastating effects.

11. Situational awareness is having the right information at the right time alongside the ability to analyze that information to appropriately and effectively take action. The vehicle for this attentiveness is effective communication between interprofessional healthcare team members.

12. TeamSTEPPS is a program designed to teach interprofessional teams how to communicate with each other to promote situational awareness and patient safety (AHRQ, n.d., p. 2).

13. Situation, background, assessment, and recommendation (SBAR; AHRQ, n.d.) was developed by the military and is now applied to healthcare as a means to relay significant information regarding a patient’s condition or to be used as patients’ care is communicated and handed off from one caregiver to another (Table 8.2).

14. Time-outs are an opportunity for everyone in the room to stop and ensure that the correct patient is having the correct procedure done to the correct site.

15. Safety huddles allow those caring for the patient to review pertinent information and the plan of

16. Cross-monitoring, callout, two-challenge rule, concerned, uncomfortable, and safety (CUS), check back/read back, and handoff are developed by the AHRQ which provides reference videos for clinicians, administrators, and educators demonstrating TeamSTEPPS tools, strategies, and techniques at its website, www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/instructor/videos/index.html (Table 8.3).

17. Timely reporting of errors and near misses, also known as close calls where an error could have occurred but was stopped before it caused harm, provides an
opportunity for the team to learn from them. In most cases, errors and near misses are often the result of a failure within a healthcare system.

18. There are many available web resources funded by government agencies and national healthcare organizations that are designed to improve teamwork and collaboration, prevent error, promote patient safety, and improve the quality of the care that patients receive (Table 8.4).

19. Debriefing is the process of reviewing performance effectiveness following challenging patient care situations.

20. Feedback, whether positive or negative, should always be an unbiased reflection of what occurred, opening the door to a discussion of evidence-based practice (Clynes & Raftery, 2008). Constructive feedback should carefully detail events as they occurred and avoid opinion.

21. Teams can work together to conduct audits and other organizational studies that measure quality, safety, and patient outcomes which can have a significant impact on the process of quality improvement (QI).

22. Providing feedback to team members allows the team to identify strengths and weaknesses, make changes to the healthcare system, and adjust practice for individual growth and development.

23. Self-evaluation of one’s communication and decision making is a crucial element of professional growth and strengthens one’s ability to contribute to the team’s decisions by employing strong clinical judgment.

24. Tanner’s model of Thinking Like a Nurse (2006) demonstrates how clinical judgment is developed through reflection, enhancing critical thinking skills.

25. Mindfulness implies staying focused with the ability to see the significance of early and weak signals as well as to take strong and decisive action to prevent harm (Weick & Sutcliffe, 2001).

26. Communication between the healthcare team, the patient, and the patient’s family during times of stress and illness can be challenging but it is essential to safety and a key factor in patient satisfaction.

27. Many barriers can interfere with communication, such as knowledge gaps, education levels, culture, language barriers, or stress. It is important for nurses to develop strategies to identify and overcome these barriers.

28. Effective communication is essential to maintaining a safe and protected environment for patients. Ineffective communication continues to be identified as the root cause for many sentinel events reported to The Joint Commission (2016).

29. Destructive events such as physicians who will not respond to pages, nurses who are resistant to carrying out legitimate orders, or pharmacists who do not move quickly to fill STAT prescriptions, create difficult communications among healthcare providers that can negatively impact patient care (Table 8.5).

30. One of the most troubling conflicts for nurses is nurse-to-nurse aggression, also known as lateral violence or horizontal violence (Rittenmeyer et al., 2013).

31. New-to-practice nurses are more vulnerable to horizontal violence and hostile work conditions in the healthcare environment due to their lack of experience.

32. Preceptors are experienced nurses who provide orientation and support to new-to-practice nurses as they learn the roles and responsibilities of a new job.

33. Reflection and the ability to gain insight into one’s one actions can facilitate powerful, effective change.

34. Hospital and nursing leadership have a significant influence on how teams function.
KEY TERMS

Collaboration
Cross monitoring
Debriefing
De-escalation strategies
Hand-off
Interprofessional education
Mindfulness
Near miss
Rapid Response Teams
Root cause analysis
Situational awareness

REVIEW QUESTIONS

1. A nurse receives a telephone order from a physician for specific x-ray tests. The nurse established the identity of the patient involved and the name of the ordering physician. Which of the following should she do next?
   A. Write the order on the order sheet in the chart.
   B. Repeat what the physician says and then write it down on the order sheet.
   C. Ask the physician to directly place the order with the radiology department.
   D. Write the order on the order sheet and then perform a read back to the physician to verify the order is accurate.

2. The nurse is informed that an RRT will be initiated at the hospital to better meet the needs of patients. Which of the following best describes the way in which the nurse should utilize the RRT?
   A. Provide support for medical-surgical nurses and decrease the number of patient arrests requiring ICU admission.
   B. Rapidly move patients through the hospital system at time of transfer.
   C. Notify the attending physician of the client’s deteriorating status.
   D. Provide immediate assistance to patients in the ICU.

3. The nurse is transferring a patient from the ICU to the step-down patient care unit. When the ICU nurse calls report to the receiving unit, what is the best way for the nurse to provide the handoff information?
   A. Situation, Background, Assessment, Requirements
   B. Situation, Background, Assessment, Recommendations
   C. Systems, Background, Activities, Recommendations
   D. Systems, Background, Activities, Requirements

4. The nurse pages a physician due to the patient’s change in status. When the physician calls the unit, the physician yells at the nurse for interrupting dinner. Which of the following would be the nurse’s best approach?
   A. Tell the physician that she is going to report him to the nursing supervisor.
   B. Tell the physician that she is doing her job and does not deserve to be yelled at.
   C. Refocus the communication on the patient and the reason for the call.
   D. Apologize for interrupting the dinner and page his partner.
5. The nurse attends an interprofessional meeting to discuss the care of a patient who is a paraplegic after an automobile accident. Which of the following best describes the purpose of assembling an interprofessional team?

A. To provide multiple perspectives to contribute to the patient’s care and well-being
B. To divide the work appropriately among disciplines
C. To ensure that the physician controls the patient outcome
D. To provide support in difficult patient care situations

6. Following a serious medication error that resulted in patient injury, a nurse is assigned to a team assembled to investigate the cause. The nurse knows which of the following represents the best method for doing so?

A. Root cause analysis
B. Debriefing
C. Six Sigma
D. Crew resource management

7. The nurse on the oncology unit cares for a patient who frequently comments that she would like better pain control through the night. The nurse tells the patient that a note will be placed on the front of the patient’s chart alerting the physician in case the nurse misses the physician during her rounds. Which of the following represents a better process to ensure the patient’s needs are met?

A. Nursing rounds
B. Team huddle
C. Debriefing
D. Root cause analysis

8. A patient’s family is angry about their family member’s deteriorating condition and tells the nurse that they are not satisfied with the patient’s care. Which of the following would be the most appropriate action by the nurse?

A. Notify the hospital administration
B. Explain to the family that the patient’s condition is complex and that the patient is receiving appropriate care
C. Convey understanding and notify members of the healthcare team so that a family meeting with the team can be provided
D. Ask the family members why they feel that way

9. Which of the following processes would best assist the nurse to increase expertise, adjust practice, and improve self-regulation?

A. Conduct a RCA
B. Elicit constructive feedback from others
C. Participate in debriefing
D. Use the CUS technique

10. Skilled communication is essential to patient safety for which of the following reasons?

A. Patients need to be convinced to receive specific treatments.
B. Nurses need to explain procedures to patients.
C. Miscommunication is responsible for many harmful events in the hospital.
D. Poor quality is associated with poor communication.
REVIEW ACTIVITIES

1. A patient calls the nurse into the room and complains of shortness of breath. The patient was admitted yesterday for pulmonary edema and has been successfully treated with nasal oxygen at 4 L, and furosemide (Lasix) 40 mg IV every 12 hours. The nurse determines that the patient’s respiratory rate is 30, the pulse oximetry reading is 91%, and auscultation of the lungs reveals crackles halfway up the back. Using SBAR technique, provide report to the physician regarding the previously mentioned patient.

2. The nurse believes the dose of a medication ordered for a patient is too high and may be dangerous for the patient to receive. What communication strategy would the nurse implement to verbalize this? How would it be implemented?

3. The nurse receives a critical lab result via telephone from the laboratory. What safety strategy should the nurse implement to ensure safety regarding the lab value?

CRITICAL DISCUSSION POINTS

1. During your last clinical experience, what interprofessional teamwork and collaboration initiatives were underway on the nursing unit or within the department of nursing?

2. What interprofessional teamwork and collaboration resources are available to nurses within the nursing unit or department of nursing where you have your clinical rotation?

3. How has interprofessional teamwork and collaboration improved for patients and families in your clinical site?

4. How do the nurses feel about the culture of interprofessional teamwork and collaboration within their work environment?

5. How are nurses involved in interprofessional teamwork and collaboration in the health system?

6. How are patients, nurses, and the interprofessional team included in daily interprofessional rounds in your clinical site?

7. If a nurse has an idea that will improve the interprofessional teamwork and collaboration regarding patient care delivery, where would he or she take that idea within the organization?

8. Interprofessional teams include physicians and nurses that provide direct patient care but also include the patient, family members, and many others who provide support services such as pharmacists, dieticians, social workers, and physical and occupational therapists.

9. All members of the interprofessional team should be valued for their contribution of a specific expertise to the plan of care for the patient.

10. Interprofessional education as well as quality and safety standards can improve the collegial interactions of members of the team.

11. Attention to quality and safety improvement have resulted in national organizations promoting the implementation of processes such as RCA, Six Sigma, and RRTs to raise the standard of care.

12. The human factors associated with providing healthcare contribute to the potential for errors but effective teams incorporate safety strategies to communicate, monitor each other’s work, and prevent injury to patients.

13. Good communication skills for exchanging information and delegating are an essential element of successful teamwork and collaboration.
14. Giving and receiving feedback provides an opportunity for individuals and teams to identify areas for improvement and alter their practice.

15. Healthcare team members have an ethical duty to work together for the patient’s well-being.

16. Difficult or strained communications place patients at risk because team members are afraid to ask questions or confirm practice standards.

17. Nurses can promote teamwork and prevent communication barriers by using strategies to de-escalate tense situations, by framing their communications in safety language, by using cognitive rehearsal, and by reflecting on events to consider opportunities for building consensus.

**QSEN WEBSITE EXERCISES**


   Discussion: This PowerPoint presentation is a brief overview for individuals that are unfamiliar with the IOM/QSEN competencies and wish to introduce ideas that promote development of the knowledge, skills, and attitudes that support the competencies. It includes direct links to helpful resources such as the First Touch website, to Infection Control Bundles at The Joint Commission website, and to the TeamSTEPPS video collection at the Agency for Healthcare Research and Quality website.

2. Giving and Receiving Constructive Feedback. Review this 18-minute narrated presentation to learn how to give and to receive constructive feedback to improve practice and build teamwork: qsen.org/giving-and-receiving-constructive-feedback/

   Discussion: This is a narrated presentation focused on helping students to understand the importance of learning to give and to receive constructive feedback. Key points include understanding constructive feedback’s role in quality improvement and patient safety, and learning to view constructive feedback as an opportunity for improvement. Students may listen to it online, at home, or in the classroom with a faculty member. The presentation can be loaded into Electronic Course Frameworks and assigned. If assigned as an out of class activity, faculty can have students blog or post in discussions about what they gained from the presentation.

**EXPLORING THE WEB**

1. Go to qsen.org and find the Teamwork and Collaboration Competency. Review the knowledge, skill, and attitude a graduate nurse should exhibit. Then go to the Publication tab and review the various articles, toolkits, and other resources. Do you find something that could help you with a current group of people/classmates/colleagues you are working with?

2. Access the web resources in Table 8.4.
3. Review the websites listed in Table 8.4. What do you identify as the consistent theme or focus of all of these websites?

4. What strategies do you see on these websites that would enhance teamwork?

REFERENCES


SUGGESTED READINGS


Upon completion of this chapter, the reader should be able to

1. Describe the importance of developing basic literature search strategies when looking for the best available evidence.
2. Explain how research topics and questions are used to search the literature.
3. Explain how the patient/population, intervention, comparison, outcome, time (PICOT) model for structuring evidence-based practice clinical questions is used to search the literature.
4. Identify high-quality electronic databases and online resources for basic literature searches.
5. Identify high-quality patient-care information tools including point-of-care databases and practice guideline sources for basic literature searches.
6. Utilize keywords and subject headings in electronic databases and online resources.
7. Utilize Boolean Operators and other search techniques in electronic databases and online resources.
8. Develop broad literature search strategies.
You are spending time on a surgical inpatient unit as one of your clinical rotation assignments. You observe that peripheral IV catheters are left in patients for 3 days prior to being changed. In a previous clinical rotation at a different organization, you recall that the policy for changing peripheral IV catheters was to change them every 4 days. You ask your preceptor about this as part of your efforts to better understand which organization has the safer practice. The preceptor appreciates your question and reports wondering the same thing. The preceptor comments that patients often dread having their IVs restarted on the third day when most of them are going home the next day. You and your preceptor decide to speak with your nurse manager about looking into the recommended practice for the timing for peripheral IV catheter changes. You review the literature and find that many studies report no increase in infection rates, infiltration risk, and so on, if an IV is changed every 96 hours instead of every 72 hours. You and your preceptor summarize key points from the literature, determine the expected cost savings from fewer IV replacements, and highlight the potential impact on patient satisfaction. You present your findings to the nursing practice committee. As a result, nursing practice is modified to reflect the best evidence for a safe experience for patients requiring peripheral IV catheters.

1. What opportunities are there in nursing to ask questions about current practice?
2. What opportunities are there in nursing to facilitate dissemination of information?
3. What other nursing actions should you take when adopting practice changes like this?

Basic literature search strategies are used to search the literature for research and evidence that will improve patient care and fill knowledge gaps. High-quality literature searches are needed to ensure that the most up-to-date research and best available evidence are being used to shape patient care. Nurses and healthcare delivery institutions use research to shape practice and ensure that the care delivered is at the forefront in terms of safety and quality. “As evidence-based practice becomes more integrated into routine care, systematically searching of the literature is essential to making informed clinical decisions. To uncover all the evidence and get the most unbiased sense of what is known about a particular phenomenon or caregiving practice, a clear method of searching that is systematic is needed” (McGrath, Brown, & Samra, 2012). This highlights the need for nurses to have skills in basic literature search strategies.

This chapter discusses the importance of basic literature search strategies as they relate to nursing. How to form research questions and use a structured patient/population, intervention, comparison, outcome, time (PICOT) model for searching the literature is described. High-quality electronic databases, point-of-care databases, and practice guideline sources are explored. Search strategies including the use of keywords, subject headings, Boolean Operators, and other search techniques are described. Techniques and support for broad literature search strategies are identified. Finally, the chapter identifies literature search resources for lifelong learning.
BASIC LITERATURE SEARCH STRATEGIES

Healthcare practitioners use basic literature search strategies to answer a clinical question or explore a research question (Boss & Williams, 2014). Librarians and other experienced literature searchers approach the literature search process differently than novice or inexperienced searchers. Experienced searchers think about the topic of interest and plan their systematic search before beginning the literature search (Stillwell, Fineout-Overholt, Melnyk, & Williamson, 2010b). Nurses who follow a similar approach to the literature search process can decrease the time a literature search takes and increase the relevancy of search results.

DEVELOPING RESEARCH TOPICS AND QUESTIONS

According to Melnyk and Fineout-Overholt, the first step of the evidence-based practice (EBP) process is to cultivate and maintain a spirit of inquiry within the nursing profession. Nurses should be encouraged to demonstrate a spirit of inquiry by questioning what is known and not known about a topic of interest, clinical care, and unit-based or institutional practice. Nurses should start by reviewing the policies and practices related to patient-centered care within their organization. Gathering additional information through literature searches can help a nurse better understand the topic or research question. A preliminary research topic can be as simple as pain management in children. Research topics are used at the start of a literature search process. Once the searcher begins to understand an area of interest more, a research question is often developed. A preliminary research question developed from the pain management in children topic can be as simple as, “What are nonpharmacologic ways to manage postoperative pain in children?” Once the topic or question to be researched is identified, an experienced literature searcher would conduct a simple and broad preliminary literature search for published information using the most relevant words or phrases. This simple and preliminary literature search provides the searcher with a better understanding of the topic or question and provides a sense of the information available. After a review of the results, the literature searcher would refine the topic or question further, adjust the keywords or phrases used, rerun the search, review the results again, and repeat the process as often as necessary until the results are
EVIDENCE FROM THE LITERATURE

Citation


Discussion

Evidence-based practice (EBP) involves either testing a new idea against existing practice or extending a proven EBP into real-world use. Research studies are one type of evidence used to inform EBP. The study of the care of preterm infants is a good example of how ongoing research and published studies can shape and inform patient-centered care.

Beginning in the 1970s, nurses in neonatal intensive care units (NICUs) began experimenting with what is sometimes called *kangaroo care*. Kangaroo care is a technique practiced on newborn, usually preterm, infants wherein the infant is held skin-to-skin with an adult. The NICU nurses explored whether there would be a positive difference in fragile preterm infants’ conditions if there were skin-to-skin contact between parents and preterm infants.

Initial studies demonstrated improved social development (Kramer, Chamorro, Green, & Kundston, 1975), food intake, and weight gain (Rausch, 1981; White & Labarba, 1976) in neonates, all of which lead to decreased lengths of stay, resulting in significant cost savings for both families and institutions (Field et al., 1986). By 2002, research studies indicated that positive cognitive, perceptual, and motor development in the infant were attributed to kangaroo care (Feldman, Eidelman, Sirota, & Weller, 2002). Trials continue today to test variations of physiologic and developmental milestones (Scher et al., 2009) and have even extended the use of kangaroo care to help manage pain (Cong, Ludington-Hoe, & Walsh, 2011; Johnston et al., 2008). Forty years of developing, testing, and extending the evidence of the beneficial effects of kangaroo care is an example of EBP within NICU settings.

Implications for Practice

Investigating new and improved ways to care for different patient populations is what continues to elevate patient-centered care. As evidenced from the earlier example, this can start with a simple question and lead to years of research, knowledge generation, best practice dissemination, and evidence utilization in clinical practice. The culture of inquiry is important to the profession of nursing as it encourages bedside practitioners to consistently question the efficacy of their current practice. This inquiry leads to improvements in care and improvements in patient outcomes.

relevant. An experienced literature searcher would repeat this process with as many sources of information as appropriate for the topic, the question, and the needs of the research.
USING THE PICOT MODEL TO STRUCTURE QUESTIONS

A slightly more sophisticated way to inquire about a topic is to develop a clinical question using the PICOT (pronounced peak-’at) model. Use of the PICOT model is an effective way to systematically identify and retrieve nursing and healthcare published studies (Table 10.1); the “P” represents the patient or population of interest, “I” represents the intervention of interest, “C” represents the comparison of interest, “O” represents the desired outcome of interest, and “T” represents the amount of time the outcome will be observed. The PICOT model ensures that a literature search question remains organized and all aspects are addressed within the search strategy. An example of a PICOT question is, “Does treatment of patients with type 2 diabetes with weight loss surgery result in maintained weight loss of 20 pounds or more compared to traditional patient management with pharmaceuticals, diet, and exercise over a 2-year period of time?” The “T” representing time can be difficult to search with so it is often left out of the question and subsequently the search. When that occurs, the question model is called PICO (pronounced peak-o). Even without the “T” represented, the model helps to provide the structure to transition a question into a systematic literature search.

Generating Synonyms

While thinking about a topic or question of interest, or while developing a PICOT question, it can be helpful to think of related and relevant synonyms. A synonym for weight loss surgery could be gastric bypass surgery. A synonym for body weight could be body mass index (BMI). Creating a list of synonyms and related terms will help to locate information that uses any of the related terms within the literature. While this may broaden the search results it will also capture relevant literature that might have otherwise been missed. Keeping track of synonyms that work well and do not work well throughout the search process will help the searcher identify the proper term or terms to use.

TABLE 10.1 PICOT MODEL

<table>
<thead>
<tr>
<th>(P) Patient/Population of interest</th>
<th>Answers the question, “who?”</th>
<th>Example: Patients with type 2 diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I) Intervention of interest</td>
<td>Answers the question, “what?”</td>
<td>Example: Weight loss surgery</td>
</tr>
<tr>
<td>(C) Comparison</td>
<td>Used to describe the intervention of interest</td>
<td>Example: Compared to management with pharmaceuticals, diet and exercise</td>
</tr>
<tr>
<td>(O) Outcome</td>
<td>Used to describe desired outcome</td>
<td>Example: Maintain weight loss of 20 pounds or more</td>
</tr>
<tr>
<td>(T) Time</td>
<td>Used to describe the amount of time the outcome will be observed</td>
<td>Example: Over 2 years</td>
</tr>
</tbody>
</table>


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Deciding Where to Search

After a topic’s research question using PICOT or PICO has been drafted, the next step is to consider where the best sources of information are. Nursing information can be found within textbooks, book chapters, scholarly journals, trade publications, professional association reports, white papers, online publications, and so on. Textbooks, and many other sources, tend to take a long time to be published so the information is not always the most recent. Trade publications and many other sources tend not to be peer reviewed so the information contained has not always been evaluated by experts prior to publication. Since the nursing profession favors scholarly, peer-reviewed journal articles and professionally published information, this chapter focuses on selecting high-quality electronic databases and online tools.

There are a few electronic databases with professionally published literature that are free, but most require a subscription and fee. Due to cost, access to electronic databases is usually provided by large organizations such as universities, hospitals, and libraries, or through a resource website, such as a university library web page. An institutional login is often required. The cost of an electronic database varies greatly by institution. Cost is based on factors such as number of students (for a university) or beds (for a hospital) and the nature of the institution (community college, nursing school, medical school, etc.). Personal subscriptions to these types of electronic databases are not usually practical or even possible. Literature searchers may not have access to all electronic databases but access to even a few can make a significant difference to a literature search and clinical practice.

ELECTRONIC DATABASES FOR SEARCHING THE LITERATURE

There are two main types of electronic databases: bibliographic databases or indexes as they are often called and full-text databases. Bibliographic databases provide a basic record, or citation, for an article and often provide an abstract or brief summary of the article itself; they do not necessarily contain the complete text of the article itself. MEDLINE is the U.S. National Library of Medicine’s (NLM’s) bibliographic database, indexing thousands of journals in the fields of medicine, nursing, dentistry, veterinary medicine, healthcare systems, and the preclinical sciences. The Cumulative Index to Nursing and Allied Health Literature (CINAHL), is another bibliographic database that indexes thousands of journals in the fields of nursing, biomedicine, alternative/complementary medicine, consumer health, and numerous allied health fields. CINAHL’s name contains the word “index,” which is a clue that not everything within the database is available in full text. Whether you will be able to access the full text of an item found in a bibliographic database depends on the institutional subscription. Bibliographic databases like MEDLINE and CINAHL are very important for EBP because they allow the user to search a wide range of relevant literature without limiting the results only to articles the user can access in full text.

Full-text databases provide the complete text of an article as well as the article citation. When using a full-text database, search results will still be presented in a list with basic information about each article, but unlike a bibliographic database, the user should be able to access the complete text of search results. Though MEDLINE and CINAHL are considered bibliographic databases, they are available via subscription...
to institutions with varying levels of full-text access. MEDLINE with Full Text and CINAHL Plus with Full Text are two of the levels of full-text access available for purchase by institutions.

The best type of database to use depends on the needs of the user. Involvement in a large-scale research study would require searching multiple bibliographic databases and full-text databases because it would be necessary to see all research relevant on the topic to create a good study design, to ensure that the idea in question has not already been studied, and to ensure that there are no major safety concerns. A student in need of one or two recent scholarly peer-reviewed articles about a topic might only need access to one or two full-text databases.

Depending on your institution, the bibliographic databases and full-text databases might be connected so citations and abstracts in a bibliographic database could be linked to the full text of an article available in another full-text database. Taking time to explore the databases and resources available through your library will ensure you are using the resources effectively. Taking time to email or meet with your librarian will ensure you are accessing all of the information available.

Access to Databases

Databases can be confusing. They can be bibliographic or full text. Most contain a combination of citations, abstracts, and full-text content. Some databases also provide free Internet access to content. The same database, CINAHL, CINAHL Plus, CINAHL Plus with Full Text, and so on, can be purchased with a differing amount of full-text content and can also be purchased from different companies including EBSCO and ProQuest. These differing levels of access and different providers can make accessing databases and accessing literature confusing.

MEDLINE is one of the most confusing databases of all. MEDLINE requires paid subscription access through companies including OVID and EBSCO. The MEDLINE search screen, search capabilities, and access to the full-text content of the more than 25 million citations varies by subscription. MEDLINE, MEDLINE Complete, and MEDLINE with Full Text can each be purchased. Most of the same citations contained within MEDLINE can also be accessed through PubMed (www.ncbi.nlm.nih.gov/pubmed). PubMed provides free Internet access to MEDLINE citations and abstracts, access to citations from journal articles not indexed within the MEDLINE database, citations from journals before the MEDLINE database began indexing the journal, articles from journals that submit their full text directly to PubMed Central, and citations for National Center for Biotechnology Information (NCBI) books. Though PubMed provides limited access to full-text articles, it is an excellent resource for those who do not have subscription access to electronic databases through their college, university, hospital, or organization.

Select Electronic Databases and Search Engines

Table 10.2 provides basic information about select electronic databases and search engines for literature searching. This is not intended to be an exhaustive list; rather, it is a snapshot of some of the resources available.
### TABLE 10.2 SELECT ELECTRONIC DATABASES AND SEARCH ENGINES

<table>
<thead>
<tr>
<th>ELECTRONIC DATABASES</th>
<th>SEARCH ENGINES</th>
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<tr>
<td><strong>CINAHL</strong> (<a href="www.ebscohost.com/nursing/products/cinahl-databases">www.ebscohost.com/nursing/products/cinahl-databases</a>) is a bibliographic database that indexes the contents of nursing and allied health publications, including journals, dissertations, and other materials. While MEDLINE indexes content from a wide variety of medical, nursing, and scientific fields, CINAHL is more nursing-focused, making it essential for nursing literature searches.</td>
<td><strong>Google</strong> (<a href="www.google.com">www.google.com</a>) is a general search engine. One should never feel bad about using it to find basic and preliminary knowledge about a topic or research question; search engines can provide quick access to general information. It is very important to avoid situations where a search engine is the only tool used during a literature search.</td>
</tr>
<tr>
<td><strong>MEDLINE</strong> (<a href="www.ovid.com/site/catalog/databases/901.jsp">www.ovid.com/site/catalog/databases/901.jsp</a>) is the U.S. NLM database of journal articles related to biomedicine. The NLM is a component of the National Institutes of Health. Literature from the life sciences and biomedicine dates back to 1809. PubMed is the NLM’s free publicly available version of MEDLINE.</td>
<td><strong>Google Scholar</strong> (<a href="scholar.google.com">scholar.google.com</a>) is a separate Google search engine focused on retrieving scholarly literature. It is very important to avoid situations where a search engine is the only tool used during a literature search.</td>
</tr>
<tr>
<td><strong>NCBI</strong> (<a href="www.ncbi.nlm.nih.gov/">www.ncbi.nlm.nih.gov/</a>), a resource of biomedical literature from MEDLINE, life science journals, and online books.</td>
<td><strong>PsycINFO</strong> (<a href="www.apa.org/pubs/databases/psycinfo/index.aspx">www.apa.org/pubs/databases/psycinfo/index.aspx</a>) is a bibliographic database of peer-reviewed literature in the fields of mental health and the behavioral sciences from the American Psychological Association. Historical records and summaries date as far back as the 1600s with one of the highest DOI matching rates in the publishing industry. Journal coverage, which spans from the 1800s to the present, includes international material selected from periodicals in dozens of languages. References for books, book chapters, and dissertations are included along with journal article citations and full text.</td>
</tr>
<tr>
<td><strong>The Cochrane Library</strong> (<a href="www.cochrane.org">www.cochrane.org</a>) is a collection of six databases including Cochrane Systematic Reviews, a full-text database of systematic reviews on a wide variety of clinical topics designed to help practitioners make healthcare decisions. Thousands of clinicians, researchers, providers, and consumers across the world have been adding to the library of evidence-based reviews since 1993.</td>
<td><strong>PubMed</strong> (<a href="www.ncbi.nlm.nih.gov/pubmed/">www.ncbi.nlm.nih.gov/pubmed/</a>) is the the NLM’s free publicly available version of MEDLINE. PubMed provides access to more than 25 million citations found within MEDLINE and in some cases links to the full text available for free from publishers or funding organizations.</td>
</tr>
<tr>
<td><strong>JBI EBP Database</strong> (<a href="joannabriggs.org/">joannabriggs.org/</a>) is similar to the Cochrane Library. The JBI EBP database provides systematic reviews, Best Practice Information Sheets, Evidence Summaries, and Evidence-Based Recommended Practices. The original focus of JBI was nursing; this emphasis remains but in recent years JBI has expanded to include evidence-based tools for medical and allied health researchers, clinicians, academics, quality managers, and consumers. The Institute began in 1996.</td>
<td><strong>Embase</strong> (<a href="www.elsevier.com/online-tools/embase">www.elsevier.com/online-tools/embase</a>) is a bibliographic database indexing peer-reviewed literature in the biomedical and pharmaceutical sciences. Embase contains more than 1,800 journal titles not indexed by MEDLINE, Google, or Google Scholar.</td>
</tr>
</tbody>
</table>

CINAHL, Cumulative Index to Nursing and Allied Health Literature; EBP, evidence-based practice; JBI, Joanna Briggs Institute; NCBI, National Center for Biotechnology Information; NLM, National Library of Medicine.
PATIENT-CARE INFORMATION TOOLS FOR SEARCHING THE LITERATURE

Most patient-care information tools are accessed online. Some are accessed at the bedside to provide immediate information for patient diagnosis, treatment, and procedure. Patient-care tools can be divided into two types, point-of-care databases (Table 10.3) and practice guidelines (Table 10.4). Both are similar in that they are designed to provide objective, evidence-based information to assist healthcare practitioners in clinical decision making. Like electronic databases, most point-of-care databases are only available by subscription. **Point-of-care databases** contain evidence summaries, literature reviews, and enhanced content such as pictures, videos, and patient education materials. Content from many point-of-care databases is accessible on handheld devices including smartphones and tablets. Point-of-care databases are designed to provide quick and accurate access to patient-centered care information. They include current summaries, reviews, pictures, videos, and so on, and are intended to be used at the bedside or during clinical decision making. Content is updated daily to ensure that practitioners are connected to the most recent evidence. Though access to point-of-care databases is beneficial, not all of them use the same processes to search, select, and appraise, nor do they describe their information in the same way, so literature searchers should be aware of the database’s processes before use. Access to point-of-care databases is often funded by hospitals, medical centers, or physician practices, and some can be purchased as an individual subscription by a practitioner. Point-of-care databases are rarely available within college, university, or public libraries.

<table>
<thead>
<tr>
<th>TABLE 10.3 SELECT POINT-OF-CARE DATABASES</th>
</tr>
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<tbody>
<tr>
<td><strong>Lippincott’s Nursing Advisor</strong>&lt;br&gt;(lippincott solutions.com/solutions/advisor) is a point-of-care tool developed specifically for nursing; it includes drug information, patient education handouts, evidence-based care guidelines, and care plans.</td>
</tr>
<tr>
<td><strong>Clinical Key for Nursing</strong>&lt;br&gt;(<a href="http://www.clinicalkey.com/nursing/">www.clinicalkey.com/nursing/</a>) is a point of care tool that connects nurses to clinically relevant information from books, journals, and practice guidelines.</td>
</tr>
<tr>
<td><strong>DynaMed</strong>&lt;br&gt;(<a href="http://www.dynamed.com/home/">www.dynamed.com/home/</a>) is an evidence-based, point-of-care reference database for nurses, nurse practitioners, physicians, residents, and other healthcare professionals.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 10.4 SELECT PRACTICE GUIDELINE TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines International Network&lt;br&gt;www.g-i-n.net</td>
</tr>
<tr>
<td>Registered Nurses’ Association of Ontario&lt;br&gt;www.rn ao.ca/bpg</td>
</tr>
</tbody>
</table>
Select Practice Guidelines

Practice guidelines are summaries of information developed by practitioners, professional organizations, expert groups, and others who synthesize information about a clinical topic, procedure, or scenario and make recommendations for clinical practice. The full text of guidelines can often be found on professional organizations’ websites or published within scholarly peer-reviewed journal articles.

Once the literature searcher selects the appropriate database or information sources to be searched, the next step in the process is to identify the keywords, phrases, or subject headings to be used in the search.

CRITICAL THINKING 10.2

Go to nccih.nih.gov/health/providers/clinicalpractice.htm. Find a clinical practice guideline for a healthcare condition that you are interested in.

1. What is the title of the clinical practice guideline?
2. What patient-care recommendations mentioned in the clinical practice guideline have you seen within a clinical experience or in current practice?
3. Is the organization you selected an authoritative source within the profession?

LITERATURE SEARCHING WITH KEYWORDS AND SUBJECT HEADINGS

A literature search can be done with keywords and with subject headings. A keyword is a search term that uses your own personal natural language to search the literature. A subject heading is a search term or phrase that represents a concept used consistently in data organization and retrieval. Subject headings are part of a larger system of controlled vocabulary, one that is structured as a hierarchy with broad terms and narrow subtopic terms.

Keyword Searching

Keyword searching allows the searcher to enter any keywords or groups of keywords into an electronic database. The electronic database matches the words exactly as entered; it does not evaluate the usefulness or relevancy of the words to the focus of the literature search (Sherwill-Navarro, 2010). Through practice and patience, a literature searcher will become better at evaluating the relevancy of search results and determining if the keyword or keywords being used are appropriate.

Different electronic databases use different search screens and processes. In PubMed, for example, you would accomplish a keyword search by entering each of your keywords in the PubMed search bar. After each search, click on Advanced. Then,
on the Results screen, scroll down to History and click Add to combine search results together. A keyword search done on June 1, 2017, within PubMed for type 2 diabetes retrieved 141,121 articles; then, a keyword search for diet retrieved 444,659 articles. When the searcher clicked on Advanced on the Results screen, scrolled down to History, and clicked on Add to combine the two search topics of type 2 diabetes and diet together, the combined search identified 19,061 articles.

Most electronic databases and online resources use similar techniques for phrase searching. Phrase searching, where a specific phrase is enclosed within quotes in the literature search box, for example, “gastric bypass surgery,” is used to ensure that more than one word is found within the search results. For example, to find the exact phrase, gastric bypass surgery, the literature phrase searcher would enter “gastric bypass surgery” within the search box. To find the exact phrase pressure ulcer, the phrase searcher would enter “pressure ulcer” within the search box. The search from the previous paragraph was rerun on June 1, 2017, within PubMed using phrase searching. A phrase search for “type 2 diabetes” retrieved 93,392 articles; then a keyword search for diet retrieved 444,659 articles. When the phrase searcher clicked on Advanced on the Results screen, scrolled down to History and clicked on Add to combine the two search topics together, the combined search identified 13,469 articles. Almost 6,000 articles fewer were retrieved because phrase searching located the exact type 2 diabetes phrase. Phrase searching can help find fewer but more relevant search results.

**Subject Headings/MeSH Subject Headings**

Electronic literature databases usually employ a subject heading system. These systems attach an index term to information using a single, controlled vocabulary subject heading, regardless of the keywords or phrases used within the information written by the author. The NLM introduced subject headings back in the 1950s. Medical subject headings (MeSH), is the current controlled vocabulary thesaurus of biomedical terms used to describe the subjects of each piece of literature in MEDLINE. MeSH contains approximately 28,000 subject heading descriptors and is updated regularly to reflect changes in medical terminology. MeSH subject headings are arranged hierarchically (Table 10.5) by subject categories with more specific subject headings arranged beneath broader subject headings. The MeSH hierarchy in its entirety is available at meshb.nlm.nih.gov/search.

Anyone who has used hashtags within social media tools including Twitter or Instagram has used subject headings. Hashtags categorize content within social media just like subject headings categorize content within electronic databases and Internet resources. When tagging a tweet with a photo taken while on a vacation, a user might tag it #vacation. The same hashtag, #vacation, is likely to have been used by others.

**TABLE 10.5 MESH SUBJECT HEADING STRUCTURE**

<table>
<thead>
<tr>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education, Nonprofessional</td>
</tr>
<tr>
<td>Health Education</td>
</tr>
<tr>
<td>Consumer Health Information</td>
</tr>
<tr>
<td>Health Education, Dental</td>
</tr>
<tr>
<td>Health Fairs</td>
</tr>
</tbody>
</table>
to tag their tweets or photographs related to vacations. There may be other similar hashtags, such as #roadtrip or #springbreak, which further categorize the same tweet or photo. When you search for vacation tweets or photographs, a search for the #vacation hashtag will retrieve other items tagged with the same hashtag. Like hashtags, using subject headings makes searching more efficient and precise because it groups similar information together (Sherwill-Navarro, 2010). Because of the efficiency and precision in which subject headings search for similar information, it is important to learn how to search the literature using them.

MeSH headings are commonly used within nursing and medical databases. Many electronic databases make this hierarchy of subject headings clearly visible while searching, although the location of the hierarchy will vary from database to database. The MeSH hierarchy of headings is visible within MEDLINE, the Cochrane Library, and many other electronic databases and Internet resources. Other databases use a slightly different set of subject headings. CINAHL’s subject heading structure, called CINAHL Headings, is a system of controlled vocabulary similar to MeSH. PsycINFO’s information is indexed by a thesaurus developed by the American Psychological Association. It too is similar to MeSH.

Because of the controlled vocabulary and structure, a literature searcher wishing to find articles on weight loss surgery in an electronic database using a controlled subject heading vocabulary will not need to search with the keywords, weight loss surgery, weight loss surgeries, gastric bypass, and so on. Instead, the literature searcher can identify and search using the relevant subject heading in that database. In PubMed, the MeSH subject heading for weight loss surgery would be bariatric surgery. Specific categories within bariatric surgery include gastric bypass, gastroplasty, and lipectomy. Subheadings within bariatric surgery include complications, economics, epidemiology, mortality, nursing, pharmacology, and therapy. If the complications subheading is selected, literature that does not discuss complications will be eliminated from the search results. Subject heading searches identify relevant and focused literature while keyword searches tend to be broader and include less-relevant results (Anders & Evans, 2010).

CASE STUDY 10.1

A nurse, a nutritionist, and a physical therapist have been caring for an overweight young adult patient with type 2 diabetes. They all are aware that type 2 diabetes is a widespread disease and traditional treatments often fail to provide adequate control. The patient has heard discussions on television about weight loss surgery providing better outcomes than traditional management with pharmaceuticals, diet, and exercise. The interprofessional team decides to conduct a literature search to find information related to the intervention options.

1. How will exploring the evidence be useful to the patient? To the interprofessional team?
2. What keywords or MeSH terms could be used in the literature search?
3. How will literature results be shared with the patient?
Almost all electronic databases make use of Boolean logic to define relationships between relevant terms in literature searches. **Boolean Operators** are terms such as AND, OR, or NOT that are used to expand or limit literature search results. A literature search in an electronic database, using the words, _Weight Loss Surgery AND Type 2 Diabetes_ makes use of the Boolean Operator AND. The specific attributes of the AND and OR Boolean Operators are frequently confused. The AND Boolean Operator means that all terms linked by the AND operator must be present in the literature to be included in the search results. When a search uses the AND operator, as in Figure 10.2, only the small amount of literature containing the words _Type 2 Diabetes AND_ the words _Weight Loss Surgery_ will be returned in the search results. When a search uses the OR operator, as in Figure 10.3, all literature containing either the words _Type 2 Diabetes OR_ the words _Weight Loss Surgery_ will be returned in the search results. The use of the OR Operator can, at times, return a large amount of results. The NOT Boolean Operator will eliminate all literature containing the term that follows the NOT operator from the literature search results, for example, _Type 2 Diabetes OR Weight Loss Surgery NOT Type 1 Diabetes_. Literature containing the words _Type 2 Diabetes_ or _Weight Loss Surgery_ will be returned, but literature containing the words _Type 1 Diabetes_ will not be returned in the search results. Literature searchers should be cautious when using the NOT operator because it eliminates literature that contains terms regardless of their context. Inappropriate use of the NOT operator can eliminate relevant and useful literature. Table 10.6 contains examples of how Boolean Operators and search techniques can be applied within the CINAHL database.

**Literature Search Limits**

When using electronic databases, be sure to look for literature search limits. **Literature search limits** will edit search results to only include those search results that meet your limiting criteria, for example, articles published in the last 5 years. Literature searchers should include search limits later in the search process, not within the broad initial search (Sherwill-Navarro, 2010). Every database has slightly different search limits, but common search limits include the following:
TABLE 10.6 BOOLEAN OPERATORS AND SEARCH TECHNIQUES

<table>
<thead>
<tr>
<th>KEYWORDS/PHRASES</th>
<th>SEARCH RESULTS</th>
<th>END RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>weight loss AND type 2 diabetes</td>
<td>1,630</td>
<td>Quotes around phrases ensure the words in the phrase are found next to each other as an exact phrase.</td>
</tr>
<tr>
<td>“weight loss” AND “type 2 diabetes”</td>
<td>1,119</td>
<td></td>
</tr>
<tr>
<td>“weight loss” OR “lose weight” AND “type 2 diabetes”</td>
<td>1,132</td>
<td>The OR Boolean Operator searches for both phrases within results.</td>
</tr>
<tr>
<td>“weight loss” OR “lose weight” AND “type 2 diabetes” NOT surgery</td>
<td>964</td>
<td>The NOT Boolean Operator excludes all results that include the word(s) after it.</td>
</tr>
</tbody>
</table>

- Limit results to English language publications. Note that larger electronic databases often index and provide full-text results in many languages.
- Limit results to scholarly peer-reviewed sources. Note that larger electronic databases often include scholarly and nonscholarly sources including newspaper articles and trade publications.
- Limit results by the date of publication, for example, current year, past 5 years, and so on.
- Limit results to the type of publication, for example, randomized controlled trials, literature reviews, meta-analyses, practice guidelines, and so on.

Even the most basic of literature search limits can lower the number of literature search results considerably. It is often best to start with basic literature search limits, for example, limit to English language and limit by publication date. Literature searchers should add more specific literature search limits as needed within subsequent searches.

REAL-WORLD INTERVIEW

The more chances nurses have to practice their literature searching skills, the better they will get at it. A well-planned and executed literature search can be both sensitive and specific—sensitive enough to identify what is important and specific enough so results are targeted and not overwhelming. I wish all nurses were aware of how the Boolean Operators AND and OR work. Boolean Operators translate to most databases and Google so a basic understanding is useful. Identifying and using synonyms within a literature search is also important. Databases are not that smart and only search for exactly the keywords and phrases searched, so a good list of synonyms can often lead to finding the best evidence.

(continued)
Other Literature Search Techniques

Other literature search techniques (Table 10.7) can improve the quality of literature search strategies and results. Literature searchers should be cautioned, however, that truncation and wildcard symbols can vary based on the database or tool. Inappropriately placed search techniques can result in poor results, so use the techniques wisely.

Critical Thinking 10.3

You are a nurse on a rehab unit. You and a physical therapist from your interprofessional team notice that others, including physicians, other nurses, and other physical therapists, are not washing their hands as often as they should. You and your colleague think this is leading to an increase in infection rates and would like to determine the best ways to improve hand washing practices on your unit.

1. How can this research topic be modified into a question using the PICOT model?
2. What databases or online resources would you search for information?
3. What keywords or exact phrases would you use in a preliminary search of the literature?

Citation Chasing

Once a literature searcher finds a relevant piece of literature, it is wise to look through its references for other relevant literature that might otherwise have been overlooked. Look at the other article titles, journal titles, book chapter titles, books, and so on listed in the literature’s references. Use the citation information provided within the references to locate the full text of the references of interest. This
process, called **citation chasing**, uses a citation or reference from one literature source to find the citation and then the full text for other relevant literature sources. Citation chasing helps ensure that valuable information is not missed during a literature search.

**Hand Searching**

Literature can be missed even after a sophisticated database search and citation chasing, which is why hand searching is a common practice for experienced searchers. **Hand searching** is the process of electronically or physically browsing a relevant journal cover-to-cover to locate literature. Most journal publishers have a website for each journal that describes the scope of the journal, its publication timeline, author submission criteria, subscription costs, and so on. These websites often provide an archive of journal issues and contents. Common headings to look for on a journal website would be **Archive** or **Previous Issues**. Then, click on or page through to the table of contents. Skim article titles, abstracts, and any full-text literature that appears relevant.

Researchers conducting systematic reviews and other in-depth analyses regularly conduct a hand search of key journals for a period of years as part of their evidence-gathering process.

### TABLE 10.7 OTHER LITERATURE SEARCH TECHNIQUES

<table>
<thead>
<tr>
<th>TECHNIQUE</th>
<th>SYMBOL EXAMPLE</th>
<th>END RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phrase searching</td>
<td>“”</td>
<td>Term for a literature search for exact phrases by putting quotation marks (“”) around a phrase, e.g., “pressure ulcer”</td>
</tr>
<tr>
<td>Truncation</td>
<td>*</td>
<td>Term for a literature search for variations of the same word at one time, e.g., nurs* finds nurse, nurses and nursing</td>
</tr>
<tr>
<td>Wildcards</td>
<td>?</td>
<td>Term for a literature search for alternative spellings of the same word, e.g., behavio?r finds behavior or behaviour</td>
</tr>
</tbody>
</table>

You are a nurse in a pediatrician’s office with many newborn patients. Some new patients’ parents are concerned about vaccinations causing harm to their children and are refusing to have their children vaccinated. The physician you work with has asked you to help find authoritative and current professional information about vaccinations so she can develop a vaccination policy for the office.

1. **What are two to three authoritative and professional information sources you would search for information?**
2. **What are one to two types of information sources you would not include in your search?**
3. **How will you share the results with your physician? And with the parents of the patients?**
DEVELOPING BROAD LITERATURE SEARCHES

When searching electronic databases for literature, especially when using databases that employ a controlled vocabulary such as subject headings, it is best to start your search broadly. An initial search that is broad helps to identify what literature is available on the topic before a search using every keyword, subject heading, and limiter is applied. A broad literature search helps gain an initial sense of how much published literature exists on the topic before the searcher begins to narrow results (Bartels, 2013).

If you were working with a research question that, for example, had four keywords, it is often best to initially search for the one or two more core keywords to see how many relevant search results are returned. For example, if you are interested in finding evidence to indicate whether or not weight loss surgery is a more effective treatment option for type 2 diabetes compared to traditional treatments specifically with normal-weight of nonobese patients, it would be best to initially search an electronic database for the phrases “weight loss surgery” AND “type 2 diabetes.” If a large enough data set is returned, add the additional phrase of “ideal body weight” OR “normal body weight.” If the literature is abundant, add the additional phrase of “traditional treatment.” If the initial phrases return a small set of literature, adding more phrases, and thus limiting your search further, will not be helpful. Table 10.8 illustrates a narrow PubMed search with limited results.

When searching with subject headings, it is beneficial to conduct an initial search with a broad subject heading, since more specific subtopics will automatically be included in the literature search. For example, in the MEDLINE electronic database, a literature search using the subject heading bariatric surgery will automatically include the subject heading gastric bypass, a specific type of bariatric surgery. It is also beneficial to search for information about each individual subject heading separately before combining search results. Adding more subject headings, keywords, phrases, and limiters to subsequent searches will refine and focus the results.

Checking for Usefulness and Relevancy

Once literature search results have been returned, they should be evaluated for usefulness and relevancy. A preliminary review of the article titles and abstracts will enhance the literature searcher’s understanding of the topic. During the literature review, the searcher should consider whether the results are what the searcher needs to find. Are the results relevant to the patient population or clinical scenario or intervention of interest? Are results too broad? Too narrow? Are there enough results? Not enough? There is no exact number, or number range, of search results that tell the literature searcher when a search is accurate and appropriate. If a research topic or question is a popular topic that is researched and written about often, there will be much literature to find. If a research topic or question has not been researched or written about much, or if research was conducted many years ago, there might not be much literature to find. Through practice and patience, a literature searcher will become more knowledgeable about the research topic or question and therefore better at crafting an accurate literature search to identify relevant search results. If search results do not appear relevant, several strategies can help improve the search results:

• Check the subject headings used in the literature search. Are they too broad for what you are seeking? Too specific? Not relevant enough? It may be necessary to
select additional subject headings or subheadings. For example, glucose metabolism disorders and diabetes mellitus, lipoatrophic are both subject headings that are related to diabetes mellitus, type 2. Glucose metabolism disorders is a broader MeSH subject heading than diabetes mellitus, type 2. Diabetes mellitus, lipoatrophic is a more specific MeSH subject heading than diabetes mellitus, type 2. Drug therapy, diet therapy, and genetics are all subheadings that can be used with the subject heading diabetes mellitus, type 2.

- If a few individual search results are relevant, but the overall set of search results do not seem relevant, examine the entire database entry for the relevant individual search results including subject headings and abstract, if available. Most databases that make use of subject headings show which subject headings were used
Pearl growing examines the complete record of one highly relevant article to see which subject headings have been attached to it, thus identifying relevant subject headings to be used in subsequent literature searches.

- Remember that while searching with subject headings is preferable, some topics need to be searched with keywords, phrases, and synonyms. To find literature about family involvement in palliative care, a literature searcher will soon determine that there is no MeSH heading for family involvement, so searching for phrases including “family involvement” OR “family participation” OR “family-centered” OR “family presence” could be the best way to identify relevant articles.

Once the literature searcher is confident in the search results, accessing the full text is the next step. If the full text is not available within the institution’s subscription, the searcher should see if full text is freely available within PubMed, Google Scholar, or elsewhere on the Internet. Due to funding from U.S. federal agencies and other grant makers, some published research literature must be made freely available to the public. If the full text is not accessible, the literature searcher should find out whether his or her institution participates in a shared resources system, most often called interlibrary loan. Interlibrary loan is a system through which institutions can share full-text literature with other institutions.

Library and Librarian Support

The most valuable resource for searching the literature for peer-reviewed and professional information is your institution’s library and, specifically, the librarians (Eresuma & Lake, 2016). Check to see if your institution has an on-site or an online library. Speak to your librarian about your library’s journals and electronic databases. Librarians within hospitals and healthcare centers often conduct literature searches for nurses, doctors, social workers, patients, patient family members, and other clinicians. If your institution does not have a library or reference librarian on-site, you may have
access to one from another location. Some organizations gain access to library services through a university or healthcare system affiliated with a school of nursing. Public libraries are also a viable option for stand-alone healthcare institutions that lack library resources. Healthcare questions are common at public libraries, so, many public librarians are well versed in healthcare electronic databases and how to conduct a literature search.

Figure 10.4. A nursing student studying.

Administrative and Computer Support

Administrative and computer support for literature searches is a resource that is increasingly necessary for working nursing professionals. Administrative support can take the form of making computers and library resources available or providing time away from patient care to access and examine the literature. Administrative support can provide funding for paid time away from the unit, mentorship, statistician support, or money to conduct original research studies. Often, scholarships through charitable boards or endowments are offered to those who aim to investigate and improve patient-centered care. Some of these scholarships and supports are offered for broad research interests, such as best practices, while others are offered to support certain patient populations, that is, patients with cancer, neonates, and so on. An important recommendation for novice nursing researchers is to seek a mentor who has the ability to coach a researcher through the research process and assist in securing funds, resources, or other necessary support. Mentors can also help navigate discussions about literature search results and change in practice recommendations with nurse managers and members of the interprofessional team.

Many healthcare organizations have a specific department or committee responsible for the advancement of nursing practice through research and EBP. Contact this department or committee to find out how it supports the access and use of literature for patient-centered care. Searching the literature requires access to a computer with Internet connectivity and access to electronic databases. Some electronic databases discussed in this chapter are free (e.g., PubMed at www.ncbi.nlm.nih.gov/pubmed) but most are only available through an institution with a subscription. Find out whether there are funds at your healthcare organization or elsewhere to support nurses interested in literature search efforts.

RESOURCES FOR LIFELONG LEARNING

Learning how to search for literature within electronic databases and online tools can be difficult (Table 10.8). Online tutorials, videos, and webinars developed by the companies that sell electronic databases can help to improve search skills and strategies. PubMed’s PubMed for Nurses tutorial can be completed in 30 minutes (www.
EBSCO Information Services has a YouTube channel of database videos and search guides (www.youtube.com/user/ebscopublishing). All of these tools and tutorials can keep nurses up to date on basic literature search skills, databases, and patient-care information tools.

Another way to keep up to date is through database features that save literature searches and provide email alerts of new information that meet the search criteria. PubMed has a free self-registration feature called My NCBI. My NCBI allows a literature searcher to save complex search strategies with limits and will automatically run the searches at a later time. The service sends an email with new results to the literature searcher on a predetermined schedule. Literature searches are saved on the NLM servers, not on a specific computer, so they can be accessed anywhere with Internet access. CINAHL and PsycINFO via the EBSCO platform, MEDLINE via the OVID platform, and most databases on the ProQuest platform also allow literature searchers to create an account and save searches that can be accessed and rerun on demand.

Another way to keep up to date is through email alert services offered through professional organizations or information providers. Examples include the following:

- The American Nurses Association (ANA) offers ANA SmartBrief, a regular news update service that is free to nonmembers. Sign up at www.smartbrief.com/ana.

Taking advantage of free training resources, features that save a search within electronic databases, and e-mail alert services can make it easy to stay current on topics of interest with a minimum of time and effort (Sherwill-Navarro, 2010).

**KEY CONCEPTS**

1. Developing a good research question is necessary to ensure a clear, purposeful research direction.
2. Basic literature search strategies are used to search electronic literature databases for healthcare literature using keywords and subject headings.
3. While searching with subject headings is preferable, some literature search topics are better searched with keywords in one’s own natural language.
4. Using Boolean Operators, synonyms, and search techniques such as truncation and phrase searching can help identify important content in electronic literature databases.
5. Once literature has been retrieved from relevant electronic databases, it must be evaluated to determine how useful and relevant it is to the situation to which it will be applied.
6. The PICOT model for searching the literature helps organize a search and ensure that all aspects of the research question are addressed.
7. There are several high-quality electronic databases for searching scholarly peer-reviewed professional journals and professionally published information sources.
8. If available, patient-care information tools, for example, point-of-care databases and practice guidelines, should be searched within basic literature searches.

9. It is often better to first approach a literature search broadly and then narrow the search after the initial literature search results are returned.

10. Lifelong learning can be facilitated with the use of resources on the Internet.

**KEY TERMS**

Bibliographic databases, Boolean Operators, CINAHL, Citation chasing, Full-text databases, Hand searching, Interlibrary loan, Keyword, MeSH, MEDLINE, Pearl growing, Phrase searching, PICOT and PICO, Practice guidelines, PubMed, Search limits, Subject heading, Truncation, Wildcards

**REVIEW QUESTIONS**

1. Which of these literature search strategies includes a Boolean Operator? Select all that apply.
   - A. Safety NOT security
   - B. Ginger OR cinnamon
   - C. Communicat*
   - D. Stroke AND heart attack
   - E. “Glucose levels”

2. From past clinical experiences, a nurse has noticed that postoperative patients who ambulate early require less pain medication. The nurse would like to initiate an ambulation protocol on the unit. What should the nurse’s first action be?
   - A. Meet with physicians to have them add early ambulation to the postoperative order set.
   - B. Encourage colleagues to integrate early ambulation into their patients’ postoperative care.
   - C. Perform a literature search to see if there is evidence to validate the efficacy of early ambulation of postoperative patients to control pain.
   - D. Suggest a pilot study that compares current practice to early ambulation.

3. After working with a few adult patients recently diagnosed with high cholesterol, the nurse notices that patients who grow herbs are more likely to manage their cholesterol without medication than patients who do not grow their own herbs. The nurse wonders if encouraging herb gardening is an intervention recommended in the literature. Which statements are accurate? Select all that apply.
   - A. It is only necessary to search for literature with one Internet search engine, since most search engines cover everything available on the Internet.
B. Not all published research can be found with an Internet search engine.
C. In order to find the greatest amount of literature, it is necessary to consult more than one bibliographic database, full-text database, or patient-care information tool including the Joanna Briggs Institute, the Cochrane Library, MEDLINE with Full Text, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus with Full Text, PubMed, UptoDate, and National Guideline Clearinghouse (NGC).
D. It is only necessary to search for literature within one bibliographic database like PubMed, MEDLINE, or CINAHL, since most bibliographic databases include research relevant to every topic.
E. Nurses should not question what is known or not known about an intervention.

4. A novice nurse researcher seeks to better understand the potential implications of a different wound dressing technique on postsurgical healing. A research mentor is assisting the nurse in developing a patient/population, intervention, comparison, outcome, time (PICOT) question. Which question best demonstrates the PICOT model?
   
   A. For postprocedural patients, does dressing the flap with a moist bandage, rather than a dry bandage, decrease healing time?
   B. For patients who have undergone a flap procedure following a single mastectomy, does dressing the flap with a moist bandage, rather than a dry bandage, decrease healing time over a 7-day period?
   C. Does dressing a surgical site with a moist bandage, rather than a dry bandage, decrease healing time?
   D. For patients who have undergone a flap procedure following a single mastectomy, does dressing the flap with a moist bandage decrease healing time?

5. The Chief Nursing Officer at your hospital has asked you to participate on a research team that will investigate the most effective models for assigning patients to the nursing staff for care. A member of the team suggests performing a literature search to see if any previous research has been done on models that base patient assignments on patient location instead of patient acuity. Why is this literature search important?

   A. Searching the literature could help provide methods for the research study design, help avoid duplicating previous research, and identify patient assignment models to study further.
   B. A literature search can help protect against legal liability in the event of a patient-care accident, even if no further action is taken.
   C. A literature search can eliminate the need to conduct original research since patient-care models will be described within the research results.
   D. A literature search would not be important in this scenario.

6. The interprofessional team on a general medical–surgical floor is interested in improving the outcomes of patients who have a tracheostomy. The first step would be which of the following?

   A. Review your hospital’s current policy and practice for how best to care for patients with a tracheostomy.
   B. Review available literature for best practices.
   C. Solicit the thoughts and opinions of experts around you.
   D. Implement a best practice highlighted in a medical–surgical nursing journal.
7. Before conducting a literature search in Medline, PubMed, or CINAHL, it is important to remember which of the following?

A. In most cases, the best search results will be returned if you search using multiple keywords, exact phrases, subject headings, and limiters all together in your initial search.

B. In most cases, it is preferable to search using the electronic database’s system of controlled vocabulary subject headings.

C. In most cases, the best search results will be returned if you search an electronic database with one keyword.

D. In most cases, the best search results will be returned if you search an electronic database with one specific phrase.

8. You are searching for evidence in an electronic database and notice that it makes use of a system of controlled vocabulary. Because of this, it is usually best to do which of the following?

A. Combine all search terms on the same search command line, as one normally would with an Internet search engine.

B. Disregard the system of controlled vocabulary and search using your natural language of keywords.

C. When the database allows it, break your search question down into separate subject headings and search for each subject heading separately before combining search results.

D. Maximize results by searching using many subject headings in the initial search.

9. Members of a nursing unit are planning to search the literature but their research question is very broad and involves many concepts. Searches of this type are best approached in which of the following ways? Select all that apply.

A. To maximize results, search for all concepts together within the initial search.

B. Initially search for one or two core concepts and add more specific concepts, keywords, subject headings, and limiters in subsequent searches.

C. Search only for the initial keywords identified by the nursing team. No other keywords, synonyms, subject headings, or limiters will be needed for the literature search.

D. Work with the nursing team to create a PICO or PICOT question based on the research question. The structured model will help organize the literature search question and make sure that all the important concepts are addressed within the search strategy.

E. Simplify the research question. Simple initial questions and simple initial searches can help the team begin to understand the research available in the area of interest. A more specific question can be developed later.

10. You are working with a principal investigator on a large-scale study to improve how frequently used nursing supplies and equipment are ordered and stored throughout your organization. You have been asked to conduct a literature search to look for scholarly peer-reviewed journal articles discussing best practices. What source of information will best serve your needs?

A. Bibliographic databases

B. Bibliographic and full-text databases
C. Full-text databases  
D. The Internet  
E. A collection of relevant print journals

**REVIEW ACTIVITIES**

1. Some literature searches work better with subject headings than with keywords and exact phrases. For example, try to find evidence to support the use of aspirin with patients who have had a heart attack. Try searching this topic using PubMed (www.PubMed.gov). Type “myocardial infarction” AND aspirin into the search bar at the top of your computer screen. See how many results you get. Assess the usefulness and relevancy of those results. Then click the medical subject headings (MeSH) link found in the drop-down box under PubMed, just left of the main search box. Instead of typing both terms together with the Boolean Operator AND in between, type one term at a time, search for it, select the best match from the MeSH results on the left side of the screen, click the link *Add to search builder* on the screen, and repeat the process until you are ready to click the *Search PubMed* button to run the search. Assess the usefulness and relevancy of the results returned from the MeSH search. What did you find? Which of the searches yielded more relevant and useful results?

2. You are working with the nurse manager. She is looking for research on the ideal patient-to-staff ratio for night shift charge nurses who practice in a neonatal intensive care unit (NICU). In this situation, it is probably best to start by looking for research evidence with the phrases “patient-to-staff ratio” AND “intensive care.” Once you see the number, quality, and relevancy of the search results returned, adjust the search using additional synonyms, keywords, exact phrases, and truncation symbols including “staff ratio*,” “staffing,” “charge nurs*,” “night shift*,” “neonatal intensive care,” or NICU. Try the search in Cumulative Index to Nursing and Allied Health Literature (CINAHL) and/or PubMed. How many results were you able to find in each database? Adjust the search as appropriate. Which keywords, phrases, MeSH, or CINAHL subject headings used identified the most relevant evidence?

**CRITICAL DISCUSSION POINTS**

1. How does the culture of the clinical environment affect a nurse’s spirit of inquiry? How does it affect a nurse’s ability to question current nursing practice?

2. What resources are needed for direct care nurses to regularly be able to engage in basic literature search activities?

3. Consider all the different kinds of information sources available including books, magazines, newspapers, websites, videos, and so on. Why do you think the nursing profession focuses so much attention on information published within scholarly peer-reviewed professional journals and electronic databases?

4. During your last clinical experience, did you see any nurses or members of the interprofessional team using information to guide their patient-centered care? What databases or tools did the information come from?

5. How are point-of-care databases different from bibliographic and full-text databases?
6. How are practice guideline sources different from bibliographic and full-text databases?

7. After you complete your nursing degree, how do you plan to keep up to date on patient-centered care practices?

**QSEN ACTIVITY**

1. Explore the Professional Organizations information listed on the QSEN site, qsen.org/faculty-resources/organizations. Name one organization listed that you would consider an authoritative source for nursing information. Do any of the organizations publish professional journals, point-of-care databases, or practice guidelines?

2. The Quality and Safety Education for Nurses (QSEN) competency for evidence-based practice (EBP) is defined as “Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal healthcare.” Go to the QSEN competencies page at qsen.org/competencies/pre-licensure-ksas/ and find the knowledge, skills, and attitudes targets for the EBP competency. What is one knowledge target that relates to this chapter? One skills target that relates to this chapter? One attitudes target that relates to this chapter?

**EXPLORING THE WEB**

1. Review the *Picking a PICO* guide for nursing from Southern Illinois University Edwardsville library (libguides.siue.edu/c.php?g=333872&p=2244149). Use the templates to practice creating PICO and patient/population, intervention, comparison, outcome, time (PICOT) questions of interest.

2. Compare the various Cumulative Index to Nursing and Allied Health Literature (CINAHL) database subscriptions including CINAHL Complete, CINAHL Plus, and CINAHL with Full Text available from EBSCO Information Services (health.ebsco.com/products/the-cinahl-database). Which of the subscriptions, if any, are available at your institution?


**REFERENCES**


### Suggested Readings


