

# Patient Safety and Quality: An Evidence-Based Handbook for Nurses

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# Foreword

The Agency for Healthcare Research and Quality (AHRQ) and the Robert Wood Johnson Foundation (RWJF) are pleased to have jointly sponsored the development of this handbook for nurses on patient safety and quality. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses* examines the broad range of issues involved in providing high quality and safe care across health care settings.

We know that nurses are at the center of patient care and therefore are essential drivers of quality improvement. From the Institute of Medicine's reports, including *To Err is Human* and *Keeping Patient's Safe: Transforming the Work Environment of Nurses*, we know that patient safety remains one of the most critical issues facing health care today and that nurses are the health care professionals most likely to intercept errors and prevent harm to patients. For us, both at AHRQ and RWJF, improving patient safety and health care quality is embedded in our mission and at the core of what we do.

We strongly believe that the safety and quality of health care in this nation is dependent upon the availability of the best research possible and on our ability to deliver the results of that research into the hands of providers, policymakers, and consumers so that all can make better decisions. We believe the result will be improved health care and safety practices, which will be manifested in measurably better outcomes for patients.

Given the diverse scope of work within the nursing profession in this country, AHRQ and the RWJF expect that the research and concepts presented in the book will be used to improve health care quality by nurses in practice, nurse-educators, nurse-researchers, nursing students, and nursing leaders. The 89 contributors to this book represent a broad range of nurse-researchers and senior researchers throughout this nation.

The product of this joint effort underscores the commitment of AHRQ and the RWJF to achieving a health care system that delivers higher quality care to everyone. We believe that high-quality health care can be achieved through the use of evidence and an enabled and empowered nursing workforce.

We welcome written comments on this book. They may be sent to Ronda Hughes, Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850.

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# Preface

Errors pervade our lives in our homes, on the roads, and in our places of work. Each hour of each day, patients and clinicians are affected by near errors and the consequences of adverse events. The effects of health care errors and poor quality health care have impacted all our lives—sometimes directly, at other times indirectly. Even during the writing of this book, many of the authors had firsthand experiences with near errors, adverse events, and a level of poor-quality care that should never have been presented to any patient. Given the importance of health and health care in our lives, the purpose of this book is to bring safety and quality to the forefront in nursing.

Throughout these pages, you will find peer-reviewed discussions and reviews of a wide range of issues and literature regarding patient safety and quality health care. Owing to the complex nature of health care, this book provides some insight into the multiple factors that determine the quality and safety of health care as well as patient, nurse, and systems outcomes. Each of these 51 chapters and 3 leadership vignettes presents an examination of the state of the science behind quality and safety concepts and challenges the reader to not only use evidence to change practices but also to actively engage in developing the evidence base to address critical knowledge gaps. Patient safety and quality care are at the core of health care systems and processes and are inherently dependent upon nurses. To achieve goals in patient safety and quality, and thereby improve health care throughout this nation, nurses must assume the leadership role.

Despite being a relatively new field of inquiry, particularly in terms of how patient safety and quality are now defined, the need to improve the quality and safety of care is the responsibility of all clinicians, all health care providers, and all health care leaders and managers. As clinicians, we are obligated to do our best, regardless of whether we are acting as a clinician or a patient. Just as we say there are “good patients” and “bad patients,” clinicians as patients can unfortunately be considered “bad patients” because they may know too much, ask too many questions, or are not up-to-date on the research or current practice standards. Yet that is a mindset that must end and become a part of history, not to be repeated. Instead, nurses need to ensure that they and other team members center health care on patients and their families. All patients—whether they include ourselves, our loved ones, or the millions of our neighbors throughout this country—need to be engaged with clinicians in their care.

Each of the chapters in this book is organized with a background section and analysis of the literature. At the end of each chapter, you will find two critical components. First, there is a “Practice Implications” section that outlines how the evidence can be used to inform practice changes. Practice leaders and clinicians can use this information, based on the state of the science, to guide efforts to improve the quality and safety of delivering services to patients. Second, there is a “Research Implications” section that outlines research gaps that can be targeted by researchers and used by clinicians to inform and guide decisions for practice. Faculty and graduate students will find innumerable questions and issues that can be used to develop dissertation topics and grant applications to uncover the needed evidence.

In all but a few chapters, you will find evidence tables. These tables were developed by critically assessing the literature, when possible, and present invaluable insight as to the type and quality of research that can inform practice, clarify knowledge gaps, and drive future research. As the reader will observe, the majority of patient safety and quality research presented in the evidence tables represent cross-sectional studies. In fact, 81 percent of the studies exploring the

various aspects of safety and quality employed cross-sectional study designs, predominately representing assessments at single sites of care and using qualitative surveys. This may be the byproduct of the challenges of the research process (including sources of funding) or the challenges of engaging in collaborative research. From this review of the literature, we can learn the importance of the need for longitudinal, multisite analyses to bring us forward into the next generation of evidence-based knowledge.

Great is the importance of nurses being involved throughout the research process and collaborating with interdisciplinary teams throughout care settings. Then, too, it is critical that nursing leaders and managers, clinical leaders, and nurses across care settings engage in a lifelong pursuit of using data and information as well as research evidence to inform practice. Combined with experiential knowledge, analyses, and evidence, nurses will be challenged to continuously improve care processes and encourage our peers and interdisciplinary colleagues to make sure patients receive the best possible care, regardless of where they live, their race or gender, or their socioeconomic circumstances.

The chapters in this book are organized into six sections. Each chapter can be read independently of the others; however, some do make reference to other chapters, and a greater understanding of the breadth and depth of patient safety and quality can be better obtained by reading the book in its entirety. Highlights from the chapters are summarized by section as follows:

In *Section I – Patient Safety and Quality*, patient safety is discussed as being foundational to quality, where nurses can be invaluable in preventing harm to patients and improving patients' outcomes (chapter 1). Even though the quality and safety of health care is heavily influenced by the complex nature of health care and multiple other factors, nurses have been held accountable for harm to patients, even when other clinicians and health care providers and characteristics of the care system in which they work often have—almost without exception—greater roles and, in some respects, have ensured that an error would happen (chapters 2 and 3). With the many challenges facing health care today, the Institute of Medicine's 11-volume *Quality Chasm* series brings to light the multitude of issues and factors that individuals and organizations, both within and outside of nursing and health care, need to understand and to work together to overcome (chapter 4). Moving toward and securing a culture of safety throughout health care will, by definition, acknowledge the influence of human factors in all clinicians, the results of human-system interfaces and system factors, and will institutionalize processes and technology that will make near errors and errors very rare (chapter 5). This paradigm shift will enable nurses to think more critically and clinically (chapter 6), and to achieve greater insights as to how education, training, and experience are needed and can be leveraged to ultimately achieve high-quality care in every care setting and for all patients.

To improve patient safety and quality, one needs to understand the state of the science at hand, as well as strategies that can be behind effective utilization of evidence and implementation of change, as discussed in *Section II – Evidence-Based Practice*. It is here that one can learn that implementing evidence into practice can be accomplished though several approaches—often more than one simple intervention is possible—and by early on engaging key stakeholders to move toward adoption of change by translating research-based evidence into everyday care (chapter 7). Yet in assessing the state of the science, it becomes apparent that the majority of care afforded patients is not evidence based, emphasizing the need for health services research to examine progress toward safer and higher-quality care and to assess new and innovative practices (chapter 8). While the future of health care is uncertain, clinicians must

continually assess, understand, and meet the needs of patients and prepare themselves to meet emerging health needs we might not expect (chapter 9).

Due to innumerable pressures to improve patient safety and quality, it may be important to focus on those areas of care delivery, as discussed in *Section III – Patient-Centered Care*, that are significantly influenced by nursing care. Providing health care is all about patients and their needs and meeting those care needs in settings where the majority of care is provided by clinicians—or, in certain circumstances, where loved ones and family members supplement nursing care or solely provide for the care needs of patients in community settings. Almost all the adverse events and less-than-optimal care afforded patients can be prevented, beginning by implementing research in practice. Situations in which failure to use evidence can be detected can include when preventable patients falls with injury occur (chapter 10), when illness-related complications are missed and lead to functional decline in the elderly (chapter 11), and when pressure ulcers develop in patients of any age (chapter 12). For nurses, ensuring and/or providing evidence-based, safe, and high-quality care become even more challenging when patients need care in their homes and subsequently rely on care rendered by family members and loved ones—care that can be dependent upon the guidance of nurses (chapter 13). Not only can the resources and functionality of the community or home setting pose potential threats to the safety of patients and may relegate them to care of a lower quality, but those who care for patients may also succumb to the physical and emotional demands of providing informal care; amelioration can require broadening nursing care to caregivers (chapter 14).

Nursing can also have a significant effect on the outcomes of specific groups of patients, particularly in preventing not only adverse events but the lasting effects of comorbidities and symptoms. The reason behind focusing on these specific populations is that their unique needs must not be considered less important than those of the majority. In the case of children, who are some of the most vulnerable patients due to developmental and dependency factors, it is difficult to provide safe, high-quality care that meets their unique needs. Instead, nurses need to use current best practices (chapter 15) to avert potentially lifelong comorbidities and address symptoms—and develop new practices when the evidence is not available. It is also important to focus on simple strategies to prevent morbidity—not just preventing adverse events—and ensure that patients receive preventive care services whenever possible, especially when the use of these services is supported by evidence (chapter 16). Especially for patients with moderate to severe pain, it is also important to prevent the adverse effects of their diseases and conditions by working with patients to manage their pain, promoting healing and improving function (chapter 17). And finally, in the case of potential adverse effects of polypharmacy in the elderly, nurses can also focus on simple strategies to improve adherence to intended therapies and detect unnecessary side effects, thereby improving medication safety (chapter 18).

Beyond the influence of evidence on quality processes and outcomes, there are health care system and organization factors and characteristics to consider. As discussed in *Section IV – Working Conditions and the Work Environment for Nurses*, evidence concerning the impact of health care system factors illustrates that working conditions and the work environment, which are heavily influenced by leaders, can have a greater impact on the safety and quality of health care than what an individual clinician can do. Instead of aggregating the various aspects of working conditions, the chapters in this section define and focus on specific aspects of key factors associated with patient and systems outcomes, centering on the importance of leadership.

The leadership and management of health care organizations and health systems are pivotal to safer and higher quality of care because they direct and influence: which model of care is used

to organize inpatient care services for patients (chapter 19); whether or not the organization embraces and is committed to fostering and sustaining a climate of safety and high-quality care (chapter 21); the impact of external factors, and the functionality and organization of microsystems within the context of the organization and relationships with others (chapter 22); how the specific care needs of patients are met with sufficient numbers of the right types of nurses (chapter 23 and chapter 25); how resource allocations and cost-saving strategies that involve restructuring, mergers, and organizational turbulence impact care delivery and patient outcomes (chapter 24 and chapter 29); the type of work environment that influences work stress and patient outcomes (chapter 26 and chapter 27); and how the actual physical environment and care processes influence the workload and workflow of nursing care (chapter 28, chapter 30, chapter 31).

Taken together, leadership throughout organizations, led by nurse executives and influenced by physicians, is critical in determining whether or not safety and high-quality care can be achieved through daily teamwork, collaboration, and communication (chapter 20). It is because of the importance of senior nursing leadership that emphasis is put on the moral imperative that senior nursing leadership has to lead health care in the quest for safer and higher-quality care (vignette *a*), to demonstrate the right type of leadership (vignette *b*), and to excel in the right competencies (e.g., business skills and principles, communication and relationship management, and professionalism) (vignette *c*).

Nursing leaders must actively work with and enable staff to transform the current work climate and care delivery. *Section V – Critical Opportunities for Patient Safety and Quality Improvement* puts forth several critical opportunities that leaders and staff can work together to achieve success. In almost every care setting and situation, effective communication is essential. Not only do clinicians need to constantly communicate in a professional and technical way (chapter 32) and with team members in a way that is respectful and attuned to individual differences (chapter 33), clinicians must also ensure that the right information is communicated to next caregiver or health care provider so that the safety and quality of care is not compromised (chapter 34).

Other opportunities for improvement center on the necessity to continually assess near errors and errors, not only those events that harm patients, and put in place strategies to avert the recurrence of both the near error and errors. Assessing and evaluating near errors and errors—and the ability to avert the recurrence of errors—is dependent upon having information that is reported by clinicians (chapter 35), so that some errors (e.g., wrong-site surgery) never happen (chapter 36). Many initiatives to improve patient safety and health care quality have focused on medication safety. While many medication errors are prevented from harming patients because a nurse detected the error, monitoring and evaluating both near misses and adverse drug events can lead to the adoption of strategies to decrease the opportunities for errors, including unit dosing, using health information technology (chapter 37), and reconciling a patient's medications (chapter 38).

The nature of the work and the stress of caregiving can place nurses and patients at risk for harm. Moving patients, being in close proximity to therapeutic interventions, the implications of shift work and long work hours (chapter 39 and chapter 40), and ignoring the potential risk of injury and the impact of fatigue can increase the risk of occupational injury. It follows then that, because of the nature of the work, the proximity of nurses to patients, and the chronic and acute needs of patients, particular attention must be given to preventing health care-associated infections through known effective strategies, such as environmental cleanliness, hand hygiene,



protective barriers (chapter 41), and strategies to address ventilator-acquired pneumonia (chapter 42).

The influence of nurse practitioners and of the new generation of doctorate-level nurse clinicians has the potential of enabling significant improvements in critical opportunities for patient safety and quality improvement (chapter 43). The opportunities to demonstrate the influence of these clinical leaders is endless. The last section of this book, *Section VI – Tools for Quality Improvement and Patient Safety*, focuses on the strategies and technologies that can be used to push health care to the next level of quality. One of the tools that can be used is quality methods, including continuous quality improvement, root cause analysis, and plan-do-study-act (chapter 44). Quality and patient safety indicators can also be used to assess performance and monitor improvement (chapter 45). These, as well as other tools, are integral in efforts to develop and demonstrate nursing excellence (chapter 46). With recent developments in information technologies, there are many potential benefits that can be afforded by these technologies that can facilitate decisionmaking, communication of patient information (chapter 47, chapter 48, chapter 49), therapeutic interventions (so long as the information technologies are used and function properly) (chapter 49), and education and training (chapter 51).

All of these various issues and factors come together to define the complexity and scope of patient safety and quality care but also the necessity for multifaceted strategies to create change within health care systems and processes of care. In using evidence in practice, engaging in initiatives to continually improve quality, and striving for excellence, nurses can capitalize on the information from this book and lead health care in the direction that it should and needs to be heading to better care for the needs of patients. What it all comes down to is for us, as nurses, to decide what kind of care we would want as patients then to do all that is possible to make that happen. Today we may be doing what we can, but tomorrow we can improve. With this evidence and the call to action to nurses, in 5 years from now, headlines and research findings should carry forth the message that there are significant improvements in the quality and safety of health care throughout this nation, and it was because nurses led the way.

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This book is dedicated to nurses everywhere.