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Adverse Events in Nursing: Identifying the Problem

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Patient Safety and Adverse Events: The Big Picture

Paper doesn't save people, people save people.
–Dan Petersen, Safety Professional

Patient safety is at the forefront of every healthcare organization. Despite initiatives from organizations such as Quality and Safety Education for Nurses (QSEN), The Joint Commission (TJC), and the Institute of Medicine (IOM), the rates of preventable harm among patients are still too high.

In this chapter you will learn:

1. About key areas in patient safety and adverse events
2. Factors related to medication errors, patient falls, pressure ulcers, and infections
3. How to describe QSEN and the competencies
4. Initiatives by the IOM
5. TJC initiatives on patient safety

BACKGROUND

According to the World Health Organization (WHO; 2019), one out of every four patients receiving primary or ambulatory care is harmed. The IOM estimates that medical errors cost between $17 and $29 billion per year. Domestically, according to a well-publicized 2016 study from Johns Hopkins, medical errors are the third-largest cause of death, with an estimate of more than 250,000 deaths annually. Other estimates put that number above 400,000. According to the Agency for Health Care Research and Quality (AHRQ) 10% to 12% of patients experience an adverse event, and half of these are considered preventable.

Nurses play an integral role in patient safety and spend the most amount of time with patients. For example, according to a 2018 study, nurses account for 86% of all patient-facing time in ICUs, with only 13% of that time devoted to physicians.

Fast Facts

Critical thinking, clinical judgment, and reasoning are clearly related to patient outcomes, and improving these cognitive skills in nurses will decrease medical errors and improve patient safety and outcomes.

This chapter highlights the significance of patient safety and adverse outcomes. An overview of the initiatives implemented by TJC, the IOM, and QSEN are also included.

THE BIG PICTURE

Patient safety and quality of care are integral to all healthcare organizations and multiple agencies have developed comprehensive initiatives to improve patient

outcomes and decrease the number of adverse events. However, in 1999, the IOM's *To Err Is Human: Building a Safer Health System* estimated the cost of medical errors was between $17 billion and $29 billion at hospitals across the country, with death rates between 44,000 and 98,000. This report highlighted the overall scope of the problem and various agencies, such as the IOM and TJC, created new initiatives to address these unacceptable rates of errors. However, a recent review by Daniel (2016) found that 250,000 deaths per year are due to medical errors, the third-highest cause of death in the United States, and that medical errors are underreported.

ADVERSE EVENTS

Adverse events have been described as an event that occurs because of medical care that could be considered preventable or nonpreventable. These include events that result in harm that is temporary or permanent (Harris, 2021), longer hospital stays, or death. Other events include "never events," such as wrong-side surgery, and "temporary events," such as an allergic reaction (U.S. Department of Health and Human Services/Office of the Inspector General, 2012). Adverse events take place in all healthcare settings; however, the Office of the Inspector General found that 21% of Medicare patients in long-term care hospitals experienced an adverse event, which is 46% higher than in hospitals, skilled nursing facilities, or rehabilitation hospitals (U.S. Department of Health and Human Services/Office of the Inspector General, 2018).

PATIENT SAFETY

According to the WHO (2020), patient safety is the absence of preventable harm and the reduction of the risk of unnecessary harm associated with healthcare to

an acceptable minimum. An accepted minimum considers factors such as current knowledge and resources weighted against the risk of alternative treatments or nontreatment.

ASSESSING THE PROBLEM

Common Causes of Errors

In 2003, the AHRQ identified eight common causes of medical errors:

- Communication problems (verbal and written may occur at any juncture)
- Inadequate information flow (critical test results/coordination of medication transfer)
- Human problems (not following policies and procedures)
- Patient-related issues (improper ID, failure to obtain consent, inadequate patient education)
- Organizational transfer of knowledge (lack of training and orientation)
- Staffing patterns/workflow (inadequate staffing)
- Technical failures (equipment failure)
- Inadequate policies and procedures (lack of clearly written policies) (Always Culture, 2021)

FALLS

Patient falls continue to occur at alarming rates and often with devastating results. According to the AHRQ (2022) annual falls range from 750,000 to 1 million, with a rate of three to five falls per 1,000 bed days. Approximately one third of all in-patient hospital falls result in injury and include fractures and head injuries, which may be life-threatening. Weil (2015) examined falls from the 1950s to the present day and found that

falls have increased during this period, which is related to an increase in patients who are older and have more comorbidities in addition to better reporting systems. Weil (2015) also posits that most safety committees have difficulty developing and implementing effective long-term aggressive fall prevention programs.

MEDICATION ERRORS

Medication errors may result in serious harm and are attributed to multiple factors and systematic breakdowns and occur in all settings. A medication error is defined as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer," according to the National Coordinating Council for Medication Error Reporting and Prevention" (U.S. Food and Drug Administration, 2019, p. 1). According to Salar et al. (2020), medication errors are the sixth-leading cause of death in America. A recent meta-analysis revealed that 39% of errors were related to healthcare prescribers, 38% to nurses, and 23% to pharmacies. These statistics are alarming, and to date, the various policies and strategies that have been implemented have not mitigated the rates.

PRESSURE ULCERS

Pressure ulcers have been identified as one of the nursing quality indicators, and they fall under the auspices of nursing and have been correlated with poor nursing care (Ebi, 2020). Pressure ulcers are related to immobility, incontinence, and comorbidities and are correlated with infections, increased length of stay, and mortality. In the United States, 2.5 million people develop a pressure ulcer every year (AHRQ, 2020).

Fast Facts

Pressure ulcers are currently the most harmful and costly adverse events, with recent cost estimates of $26.8 billion per year. Furthermore, hospitals experience legal and financial burdens and costs associated with the prevention and treatment and a 1% reimbursement reduction from the Centers for Medicare and Medicaid for nosocomial pressure ulcers (Morse, 2019).

HOSPITAL-ACQUIRED INFECTIONS

Hospital-acquiredinfections (HAIs), or nosocomial infections, are infections that are usually acquired after hospitalization unless they were incubating prior to admission. They include Clostridium difficile infections (CDIs), hospital-acquired pneumonia (HAP), central line–associated bloodstream infections (CLABSIs), surgical site infections (SSIs), catheter-associated urinary tract infections (CAUTIs), and ventilator-associated pneumonia (VAP; Monegro et al., 2020). Although there are multiple mediating factors and nonadherence to infection control policies occurs across the healthcare setting and disciplines, Recio-Saucedo et al. (2018) completed a systematic review and found a direct correlation between missed nursing care and poor clinical outcomes.

Impact of COVID-19 on Patient Outcomes

In 2020, the unthinkable occurred with the emergence of COVID-19 and the pandemic that followed, which caused significant illness and death and changed our way of life in ways we could have never imagined. There was much uncertainty and fear and trial and error. Major interventions included quarantining, masks, and virtually shutting down society to flatten the curve. The development of vaccines and treatments changed the trajectory. Two years

later, the number of cases has decreased, but we still live with uncertainty. Every facet of life has been impacted; however, the impact on healthcare and the resultant shortages across the various disciplines, especially nursing, have been significant. According to the AHRQ PSNet Annual Perspective (AHRQ, 2021) this novel virus disproportionately affected minorities, people with mental illness, the homeless, residents in long-term care facilities, the incarcerated, and people with comorbidities. The virus was so virulent that many people had to delay care and lifesaving treatments. In addition to workforce shortages, a lack of supplies, particularly personal protective equipment (PPE) complicated everything. A shift toward telehealth and workforce redesign was necessary to mitigate the spread. The effect on mental health across populations has been staggering in addition to the financial burdens we have all experienced. Some of the effects have not been quantified, and the long-term impacts are yet to be seen. According to Fleisher et al. (2022), there has been a severe decline in health care safety since the pandemic began. They further posit that the U.S. healthcare system is lacking and that there is a need to build a system that can maintain a culture of safety even in a pandemic. In support of this recent reports identify a correlation between the pandemic and infection control across healthcare settings, with increased percentages of infections in central lines (60%), CAUTI (44%), and increased incidence of methicillin-resistant *Staphylococcus aureus* (MRSA; 43%; Masson, 2022).

PATIENT SAFETY INITIATIVES

Adverse events and poor patient outcomes place myriad burdens on the healthcare system, with high morbidity and mortality rates among the most alarming. The financial burdens are staggering, despite multiple agencies implementing a wide array of strategies.

THE JOINT COMMISSION INITIATIVES

TJC is a global organization that focuses on patient safety and quality of care. Its mission is to improve healthcare and "inspire healthcare organizations to excel in providing safe and effective care of the highest quality and value" (TJC, 2022, para. 2). In 2003, TJC released the first patient safety goals. The original six goals were focused on the following:

- Patient identification
- Effective communication
- High-alert medications
- Eliminated wrong-side/site surgery
- Infusion pump safety
- Effectiveness of clinical alarms (JCAHO, 2003)

Every year TJC (2021a) continues to add new patient safety goals that healthcare facilities must address as part of their accreditation process. There are now 15 patient safety goals (see www.jointcommission.org/standards/national-patient-safety-goals/hospital-national-patient-safety-goals). They are also specific to the type of healthcare setting and now include infections, anticoagulant therapy, and a standardized protocol for preventing wrong-side/site surgery. Patient misidentification continues to be addressed and still occurs at unacceptable rates. According to TJC (2020), wrong-patient errors occur at all different stages of diagnosis and treatment. According to Choudhury and Vu (2020), it is challenging to detect; however, a review of a root-cause analysis by the Veteran's Administration found that out of 253 errors in the test cycle, 182 of them were related to patient misidentification. Furthermore, a survey of healthcare administrators found that 64% of them believe that the percentage of these types of errors are higher than the industry reported 8% to 10%. Clearly, there is still much work to do in achieving patient safety goals across all healthcare settings.

QUALITY AND SAFETY EDUCATION FOR NURSES

The QSEN competencies were created to address patient safety and improve patient outcomes. The Robert Wood Johnson Foundation funded the study, and a group of nursing experts collaborated to develop the QSEN competencies. There were four phases with specific criteria, and the website (https://qsen.org/) offers a plethora of strategies for helping students and nurses develop the knowledge, skills, and attitudes to incorporate the competencies in their practice settings. There are six competencies for the undergraduate and graduate nurse:

- Patient-centered care
- Teamwork and Collaboration
- Evidence-based Practice (EBP)
- Quality Improvement
- Safety
- Informatics (Hunt, 2012; QSEN, 2021)

NATIONAL ACADEMY OF MEDICINE

The National Academy of Medicine (NAM) was founded as the IOM in 1970. It is one of the three academies that make up the national academies. In partnership with the National Academy of Sciences, the National Academy of Engineering, and other stakeholders, the NAM draws on expertise across disciplines and domains to advance science, medicine, technology, and health. Its mission is to improve health, and its vision is a healthier future for all (NAM, 2021). In 1999, the IOM released its landmark report *To Err is Human: Building a Better Healthcare System,* in which it reported on the staggering fact that 98,000 died from preventable medical errors in the United States every year. In the past 20 years, initiatives have been implemented and progress has been made, but tens of thousands of patients are still being affected

by preventable medical errors. The goal of achieving zero harm to patients is ambitious; however, improvements have been made in several areas (Association of American Medical Colleges, 2019; Table 1.1).

These interventions and results were significant; however, current outcomes need to be correlated with interventions to reach the goal "zero harm" to patients (TJC, 2022a). In support of this goal, Press Ganey (2020) has developed a new initiative Safety 2025: Accelerate to Zero, aimed at reducing patient and caregiver harm by 80% over the next five years.

The Institute for Healthcare Improvement focuses on quality improvement and outcomes. The institute

Table 1.1

Examples of Successful Initiatives

Agency	Initiative	Outcomes
AHRQ	National Scorecard on Hospital Acquired Conditions	2014–2017 20,000 lives saved
The Joint Commission	National Patient Safety Goals	Initiative in 2011 18-month effort to reduce falls across the country = 62% reduction in falls
Institute of Healthcare Improvement	Save 100,000 lives	Over 18 months there were 122,000 fewer deaths
World Health Organization (WHO)	Safe Surgery Save Lives Checklist (2009)	Participating hospitals' death rate reduced by 50%
Affordable Care Act (2010)	The Partnership of Patients (2010–2015)	"In 2016, the Department of Health and Human Services reported that the partnership and other government initiatives had contributed to 125,000 fewer patient deaths from hospital-acquired conditions between 2010 and 2015" (Haskins, 2019).

was created in 1991; its mission is to improve health and healthcare globally, and its vision is that everyone will have the best healthcare (IHI, 2021).

The PSQ Advisory (2021) was founded by Ann Scott Blouin to offer a strategic perspective on the relationship between excellence in quality and safety and financial security.

SUMMARY

Each year myriad patients experience an adverse event that may result in serious harm. Patient safety and quality of care continue to be addressed by all healthcare agencies with some promising outcomes. Progress has been made in some areas, but the rates are still alarmingly high, and we have a long way to go to reach "zero harm." This chapter highlighted the issues and provided a brief overview of the various initiatives undertaken to improve patient outcomes.

VIGNETTE

Terri Green is a new nurse who has just finished her formal orientation. She is very organized, but due to several the fact that several patients had complications, she started to rush and almost administered the wrong medication to the patient in the other bed. She quickly realized her mistake and administered the correct medications to the correct patient. Would this be considered an error? If so, what type of error? Should she report it?

Discussion Questions

1. Select one of the QSEN competencies and discuss how it can be applied in healthcare settings to decrease patient errors.

2. What is a root cause analysis? Why is it done?
3. Discuss the current initiatives and findings of TJC about patient safety.
4. Describe the nursing quality indicators and their significance.
5. Identify the most common nosocomial infections. What strategies have been employed at your healthcare organization to decrease these types of infections?

TIPS FROM THE FIELD

7 Tips for Improving Patient Safety:

- Focus on reducing readmissions (staffing ratios, discharge planning, transition to care)
- Reduce transmission of superbugs with hygiene and surveillance
- Improve transitions of care (www.jointcommission.org/standards)
- Reduce adverse drug events (follow safety protocols)
- Minimizing hospital-acquired infections (hand hygiene campaigns)
- Develop a policy for "never events" (apologize to family; conduct a root cause analysis)
- Compare policies to evidence-based guidelines

(www.healthcaredive.com/news/7-tips-for-improving-patient-safety-in-hospitals/421712)

SPECIAL TOPICS: SENTINEL EVENTS

What is a sentinel event? According to TJC (2022b) a sentinel event is one that results in death, permanent harm, or severe temporary harm. TJC works closely with hospitals to help prevent these types of occurrences.

The following are the most frequently reviewed sentinel events:

- Falls
- Unintended retention of a foreign object (URFO)
- Suicide
- Wrong surgery
- Delay in treatment

Additional sentinel events include

- unanticipated death of a full-term infant,
- discharge of an infant to the wrong family,
- abduction of any patient, and
- any patient elopement.

(www.jointcommission.org/resources/patient-safety-topics/sentinel-event/#:~:text=A%20sentinel%20event%20is%20a,harm%2C%20or%20severe%20temporary%20harm)

SUGGESTED CLASSROOM OR UNIT-BASED ASSIGNMENT

Interview a member of the quality improvement team at your healthcare organization. What is this member's specific role? What are the most common errors they see? What strategies do they believe are the most beneficial?

CASE EXEMPLAR 1.1: QSEN COMPETENCIES

Debra A. Simons, PhD, RN

In nursing education, evaluation is an important process used to measure student learning outcomes. Evaluation of students learning outcomes is an ongoing challenge for nurse educators. Nursing faculty are responsible for obtaining information for making value judgments about the quality of student

learning and their competence in clinical practice. Collecting the right information about competencies in knowledge, skills, and attitudes is necessary for evaluation. The evaluation methods in clinical courses should provide data elements that provide information on how well students are meeting or have met the clinical objectives or competencies.

Nurse educators should incorporate QSEN competencies in their program outcomes and evaluation methods. The development of a clinical evaluation tool that incorporates the six QSEN competencies will assist nurse educators in gathering information on quality and safety when making value judgments about learners. A progression scale that includes expected behaviors allows student learners to make progress toward their learning as they progress through the program.

The Clinical Evaluation Tool

In addition to demographic data and course number and level, students are rated based on QSEN competencies on a proficiency scale of 0 to 4 (see Table 1.2). Based on the course level, points are converted (see Table 1.3). Examples of student expected behaviors are illustrated within each competency (see Table 1.4) and included in the evaluation tool.

Table 1.2

Proficiency Scale
How often does the student require the following:
1. Guidance
2. Direction
3. Monitoring
4. Support

(*continued*)

Table 1.2

Proficiency Scale (*continued*)

How often does the student exhibit the following:	
1. A focus on the client or system	
2. Accuracy, safety, and skillfulness	
3. Assertiveness and initiative	
4. Efficiency and organization	
5. An eagerness to learn	
SELF-DIRECTED: 4	
Almost never requires (less than 10% of the time)	Almost always exhibits (more than 90% of the time)
SUPERVISED: 3	
Occasionally requires (25% of the time) Very often exhibits (75% of the time)	
ASSISTED: 2	
Often requires (50% of the time)	Often exhibits (50% of the time)
NOVICE: 1	
Very often requires (75% of the time)	Occasionally exhibits (25% of the time)
DEPENDENT: 0	
Almost always requires (more than 90% of the time)	Very rarely exhibits (less than 10% of the time)

Table 1.3

Point Conversion Scale

Course	Pass	Need Improvement	Warning	Fail
Fundamental Nursing	2	1	0	0
Medical-Surgical Nursing	3	2	<2	0
Medical-Surgical II Nursing	3/4	<3	<2	0

Table 1.4

Example of Behaviors Demonstrating Competencies

Patient-Centered Care: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for the patient's preferences, values, and needs.

- Identify opportunities for teaching health promotion, risk reduction, and disease prevention and incorporates patient education into the patient's plan of care.
- Practice therapeutic communication in developing a trusting nurse–patient relationship. Establishes professional boundaries in the care of patients
- Identify patient barriers to effective communication.
- Integrate holistic care and ethical principles that are sensitive and compassionate into the care of patients and families.
- Demonstrate sensitivity to cultural influences on the individual's reactions to the illness. Advocate for and empower the patient/family as partners in the care process and support their right to safe, compassionate, and holistic nursing care.

Teamwork and Collaboration: Function effectively within nursing and inter-professional teams, fostering open communication, mutual respect, and shared decision-making to achieve quality patient care.

- Demonstrate professional collaboration with members of the interdisciplinary healthcare team to improve patient outcomes.
- Utilize the EMR to foster interdisciplinary communication for consistency in patient care and patient safety.
- Participate in interprofessional rounding.
- Provide assistance to peers and the healthcare team to support teamwork and reduce or avoid errors.
- Delegate as appropriate to team members within their scope of practice.
- Model IMSAFE behaviors as outlined in TeamSTEPPS.
- Communicate professionally with patients/families, healthcare team, and peers.
- Participate in post-conferences and support peers in civil discourse.
- Applies TeamSTEPPS communication tools to clinical situations as appropriate.

(*continued*)

Table 1.4

Example of Behaviors Demonstrating Competencies (*continued*)

Evidence-Based Practice (EBP): Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care.

- Integrate EBP in patient care delivery to support safe, quality patient care.
- Actively seek appropriate resources to answer clinical questions.
- Integrate best current evidence with clinical expertise, clinical data, and patient/family preferences and values for delivery of optimal health care.
- Apply essential patient/family information in the plan of care or teaching plan.
- Demonstrate knowledge of and adheres to evidence-based standards of care/policies/protocols for the institution.

Quality Improvement (QI): Use data to monitor the outcomes of care processes and use improvement methods to design and test changes to continuously improve the quality and safety of health care systems.

- Demonstrate awareness of and actively participates in the unit's quality improvement program.
- Identify practice gaps and opportunities for improvement within the clinical site/organization.
- Analyze the impact of factors such as access, cost, or team functioning on patient safety and quality improvement project efforts.

Safety: Minimize risk of harm to patients and providers through both system effectiveness and individual performance.

- Protect patient privacy and confidentiality in all communications (verbal, written, electronic).
- Use proper PPE and adhere to infection control procedures and policies. Demonstrate proper hand hygiene technique.
- Demonstrate competent use of medical devices in the care of a patient.
- Complete orientation to unit equipment.
- Use equipment per standards for safe patient assessment and monitoring.
- Identify personal gaps in knowledge and skill and seek help.

(*continued*)

Table 1.4

Example of Behaviors Demonstrating Competencies (*continued*)

- Use proper body mechanics and assistive devices to promote safe patient handling and avoid personal injury.
- Demonstrate safe medication administration.
- Use credible resources for researching medication information.
- Accurately record medication administration and monitor, report, and document the patient's response to the medication.
- Initially calculate correct dose and IV rate of administration prior to then using pump technology or other technology as a safety check.
- Identify IV compatibility and medication dilution.
- Describe the indication, action, and side effects of medications.
- Provide appropriate patient education on medications and medication safety to the patient/family.

Informatics: Use information and technology to communicate, manage knowledge, mitigate error, and support decision-making.

- Seek education about how information is managed in care settings before providing care.
- Apply technology and information management tools to support safe processes of care.
- Navigate the electronic health record.
- Document and plan patient care in an electronic health record.
- Employ communication technologies to coordinate care for patients.
- Use information management tools to monitor the outcomes of care processes.

Expected Outcomes: Allowing the student to participate in the evaluation process is important. Students should complete a self-assessment at the time of the formative and summative evaluation. Examples of expected behaviors should be included on the Clinical Evaluational Tool (CET) so students can see examples of the expected behaviors.

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