The Science of Patient Safety: Implications for Oncology Nursing Practice

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Patient safety is one of the most frequent terms used in health care today. Patients and their families are, first and foremost, focused on receiving effective and safe care, and oncology nurses strive to incorporate clinical evidence into day-to-day practice. This article provides a road map on how to incorporate emerging patient safety science into daily clinical practice to best serve patients and their families.

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Oncology nursing’s historical approach to patient safety has its roots in the safe administration of chemotherapy (Oncology Nursing Society [ONS], 1992). The first ONS standards for chemotherapy administration were written to address safe nursing practice, describing the knowledge and skill necessary to safely deliver chemotherapy to patients. The healthcare reality today has shifted to delivering results regarding patient-specific outcomes. The Centers for Medicare and Medicaid Services (CMS) now link reimbursement to the reduction and elimination of hospital-acquired infections (HAIs) and hospital-acquired conditions (HACs) (Lee et al., 2012; Richter, Jarrett, Hold, & LaBresh, 2013) (see Figure 1). The goal of patient safety is to reduce and eliminate preventable injury or harm resulting from the process of health care. Practicing oncology nurses must expand their knowledge and expertise beyond cancer care and embrace the principles and practice that serve as the foundation for the science of patient safety to reduce these patient harms.

Patient Safety

The topic of patient safety began appearing in the healthcare literature at an accelerated pace with the publication of To Err Is Human: Building a Safer Health System (Institute of Medicine [IOM], 1999). A key finding was that, despite an expensive healthcare system in the United States, patients continue to be injured or die at an alarming rate as a result of human error. The science of safety actually is an eclectic collection of principles borrowed from other disciplines that have been leading the field of safety (manufacturing, aviation, defense, and systems thinking). Oncology nurses who use structure, process, and people as a framework to guide safety initiatives will be able to address patient safety risks or gaps, regardless of the setting or role along the cancer continuum.

Structure

The way in which organizations are structured (see Figure 2) is very informative regarding priorities as well as the goals of the board of directors. Frequently, resources are dedicated to priority programs. At the cancer center or unit level, interdisciplinary quality improvement or process improvement projects often are initiated. The level of commitment can generally be gauged based on the leadership engagement in these improvement or safety initiatives. The unit-level initiatives provide oncology nurses with both clinical and leadership venues to address patient safety concerns for discussion, problem solving, and final resolution.

In addition, through participation in national meetings, oncology nurses can identify safety initiatives that colleagues from other cancer centers are implementing to improve care, and can bring those forward in their own institutions (i.e., new electronic health records [EHRs] and bar coding technologies) for possible adoption.

In the current healthcare setting, prior to bringing new equipment into a practice, a pilot study is conducted to determine the effectiveness of a product. Another opportunity to identify safety gaps, however, is when a new process, procedure, or new piece of equipment is introduced into an oncology site. Staff should monitor its reliability and gauge whether or not it delivers the desired results. Variability (i.e., is the same outcome achieved regardless of when the procedure is conducted or regardless of a particular staff member) has the potential to create safety gaps in clinical care.

Process

The second pillar is the process in which care is delivered. Understanding
the culture or norms of the organization is critical to understanding the process for identifying, reporting, and transparently discussing safety concerns. The goal is that organizational learning takes place and care is improved. Many health care systems and hospitals have used the standardized Agency for Healthcare Research and Quality (AHQRQ, 2013) culture of safety surveys. Four surveys currently are available from AHRQ: the hospital survey, the medical office survey, the nursing home survey, and the pharmacy survey on patient safety culture. These tools can be used to increase internal staff awareness, benchmark an organization’s progress internally, or assess the impact of safety improvement programs (AHQRQ, 2013).

Whether working in a hospital or ambulatory center associated with a hospital, most are familiar with the Joint Commission survey and the accreditation process. The Joint Commission (2012) has published 15 national patient safety goals, most of which are applicable to every patient with cancer at some point during his or her cancer journey. Oncology nurses should annually review the list of national patient safety goals and conduct an organizational risk assessment to identify gaps and opportunities to improve the safety and quality of cancer care. Failure Modes and Effect Analysis (FMEA) is the four-step process in patient safety for conducting this risk assessment (Institute of Healthcare Improvement, 2011). First, the healthcare team outlines the current steps in the process of care. Frequently, variability in both the practice and process of care is identified. The second step involves identifying what has or could go wrong with the process as it currently is practiced. Here, previous cases of harm or sentinel events can be discussed. The third step involves identifying the reasons or explanations for the defect and failure in the process. The final step includes the clinical team brainstorming about what effect each failure in the process will have on the patient.

The Joint Commission (2013a) has proposed a new national patient safety goal for 2014: alarm management. By issuing this new standard, the Joint Commission is calling on both executive and clinical leadership teams to make the management of patient alarms used in acute care settings a priority issue. If clinical alarms are prioritized, the clinical staff is educated about the standards for alarm management and, if alarm fatigue is incorporated into the organizational plans of care, the number of inpatients experiencing harm should decrease.

Another national organization that focuses on safety and technology used in healthcare systems is the Emergency Care Research Institute (ECRI). This AHRQ-designated evidence-based practice center has identified their top 10 health technology hazards for 2013 (ECRI, 2012). Many hazards on this list overlap with the Joint Commission’s national patient safety goals, providing additional support for oncology nurses to lead within their organization to error-proof the process of cancer care while using these technologies. Oncology nurses must examine their organization’s equipment and technologies and the patient care processes to determine where the greatest vulnerability is for the patients (i.e., infusion pumps used for antineoplastics, opioids, and telemetry).

The Affordable Care Act has led to the establishment of 26 national hospital engagement networks (HENs). The HENs are funded by CMS, with two very specific goals. First, “to keep patients from getting injured or sicker,” and second, “to help patients heal without complications” (CMS, 2011, p. 1). The HENs achieve their patient safety goals through the dissemination and implementation of evidence-based practice to reduce patient harms. For oncology nurses, the call to action regarding patient safety is to work with interdisciplinary teams using the current evidence from the HENs to reduce patient harms.

### People

The third and final pillar is understanding the people in the organization. Within every organization are clinical and executive leaders that, through both words and deeds, demonstrate the organization’s commitment to safety and safety improvement. These leaders demonstrate an openness to discussing issues and staff concerns, they are effective listeners, and they seek to understand first rather than being judgmental or defensive. Organizations with these types of effective interdisciplinary leaders are much more likely to have concerns brought forward to make clinical improvements, rather than keeping things “buried” until a very serious event occurs. The way in which the interdisciplinary team communicates the plan of care incorporating both the patient and family is critical to achieving the desired clinical outcome.

For more than 20 years, the Joint Commission has collected data summarizing the root causes of sentinel events in hospitals (Joint Commission, 2013b). The report identifies that communication (breakdowns and failures) amongst healthcare workers is identified as a root cause in 60%–70% of all sentinel events. Improving communication is the biggest opportunity to reduce and eliminate patient harms (AHRQ, 2010). The U.S. Department of Defense, in consultation with the AHRQ (2010) has developed and tested the effectiveness of the TeamSTEPPS® program, designed to enhance and improve interdisciplinary collaboration, improving the clinical outcomes for patients (Sheppard, Williams, & Klein, 2013). TeamSTEPPS is a program to foster effective interdisciplinary communication specifically for the healthcare setting. It has been effectively used in operating rooms to implement effective time-out checklists and ensure the safety of all surgical procedures. Oncology nurses should use tools to identify clinical conditions where potential gaps

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**Hospital-Acquired Infections**
- Catheter-associated urinary tract infections
- Central line-associated bloodstream infections
- Surgical site infections

**Hospital-Acquired Conditions**
- Air embolism
- Blood incompatibility
- Deep vein thrombosis
- Foreign object retained after surgery
- Hospital-acquired pressure ulcers
- Injuries from falls and trauma
- Latrogenic pneumothorax with venous catheterization
- Manifestations of poor glycemic control

**FIGURE 1. Categories of Patient Harms Contributing to Inpatient Morbidity and Mortality**

Note. Based on information from Richter et al., 2013.
in communication can occur and can negatively impact patient outcomes. Consistent use of the TeamSTEPPS tool is an approach that will help foster effective interdisciplinary communication. Oncology nurses can lead from the front of the team to improve interdisciplinary communication (Headrick et al., 2012).

Finally, oncology nurses must include the patient and his or her family members as critical members of the interdisciplinary team, enhancing communication of symptoms and concerns to ensure a reduction or elimination of harms and to achieve the desired outcome.

Implications for Nursing Practice

Taking action to address patient safety is the first step. Nurses should use the following items to implement patient safety into the clinical setting.

1. Use this article at upcoming staff meetings to gain commitment to one action step in the clinical area.
2. Use the reference list from this article to begin incorporating patient safety discussions into journal club discussions.
3. Invite safety, quality, and performance improvement teams to clinical areas to help support efforts.
4. Review the list of harms for the clinical area for the past 12 months. Set an improvement goal for 2014. Display, track, and monitor monthly during the next year.

This column is a first step to support the four pillars (knowledge, leadership, quality, and technology) of the ONS Strategic Plan (ONS, 2013). After reading this column, attempt to address a patient safety issue and apply one principle. After taking that one action, evaluate and monitor its impact on improving the system, structure, or process of care. Focus on improving the communication amongst the cancer care team. Did patient safety improve? Finally, use this feature column to share the successes and lessons learned with colleagues.

References


FIGURE 2. Framework for the Science of Safety